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I-ASTM Jet A Fuel and Dry Air

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Cleveland, Ohio*

NASA

National Aeronautics
and Space Administration

Scientific and Technical
Information Branch

Summary

A series of computations has been made to produce the equilibrium temperature and gas composition for ASTM Jet A fuel and dry air. The computed tables and figures provide combustion gas property data for pressures from 0.5 to 50 atmospheres and equivalence ratios from 0 to 2.0. Only sample tables and figures are provided in this report. The complete set of tables and figures is provided on four microfiche films supplied with this report.

Introduction

A series of computations was made to determine the equilibrium properties of combustion gas products resulting from the combustion of ASTM Jet A fuel and dry air. During combustion research it is important that the properties of combustion gases be readily available and in a form that is convenient and useful to the designer and researcher.

In the past, the combustion gas properties of gas turbine fuels as well as a variety of other hydrocarbon fuels have been computed and reported (refs. 1 to 5). These reports have been used extensively at NASA and throughout industry. The computational schemes that have been developed over the years by Huff, Gordon, Zeleznik, and McBride (refs. 6 to 8) form the basis for these reports and have been used to compute combustion gas properties for a wide spectrum of fuel and oxidant combinations. Often, however, the tables and charts have not been prepared for specific fuels. For example, the data of reference 5 are in a tabular form for hydrogen-carbon (H/C) ratios of 1.7, 2.0, and 2.1 for a range of assigned pressures, temperatures, and fuel-air mixtures. The data in this report also include combustion thermodynamic properties for a range of inlet-air temperatures, but the data herein are plotted to facilitate their use. The resulting figures have proven to be extremely useful in combustion research, and copies of such figures have been prepared for a wide variety of fuels. Because of the numerous requests for these figures as well as the interest in high pressure combustion research (ref. 9), we have decided to prepare a new series of figures and tables and extend the applicable range of the parameters covered.

This report presents tables and figures for the combustion gas properties of ASTM Jet A fuel and dry air for pressures from 0.5 to 50 atmospheres, inlet-air temperatures from 250 to 1150 K, and equivalence ratios from 0 to 2. Only sample tables and figures are provided in this report. The complete set of tables and figures is provided on the four microfiche films supplied with this report.

Procedure

The computations for this report were performed using the NASA Lewis chemical equilibrium computer program documented in reference 8 by Gordon and McBride. The computational method uses a free energy minimization method assuming all gases are ideal and interaction among phases can be neglected. The possible products of reaction are Ar, C (graphite), CH₄, CO, CO₂, H, HO₂, H₂, H₂O(l), H₂O, N H₃, N, NO, NO₂, N₂, O, OH, and O₂. These data, the atomic weights, and physical constants are the same as those used in reference 5.

The computations presented in this report were made for ASTM Jet A and dry air. ASTM Jet A is a kerosene-type commercial grade aviation fuel. The molecular hydrogen-carbon ratio of 1.9067 and lower heat of combustion of 18 600 Btu/lb used in the computations were average values obtained from the analysis of several fuel samples.

Charts of various useful combustion gas properties were also generated and plotted using computer programs. In the past, these figures had to be generated by crossplotting values from the tables. It was possible to avoid the manual crossplotting of tabular data by having the computer calculate the desired values for a given set of input parameters. For example, the plots in figure 1 are of equilibrium combustion temperature generated over a range of inlet-air temperatures, pressures, and fuel-air ratios. This was done by selecting the final equilibrium combustion temperature, assigning a pressure and fuel-air ratio, and then computing, in an iterative manner, the required value of inlet-air temperature. These computed values were then stored as a data set and figures were produced by the computer. In regions where the results became highly nonlinear, additional computations were

performed in order to present the computed results with the same level of accuracy. A careful examination of these regions shows that the curve fit consists of very short linear segments. In a similar fashion, an appropriate iterative procedure was used to produce the other combustion gas property figures.

Results

The computation procedure was used to produce the tables and the figures that are presented with this report. The major portion of the information is included on the four microfiche films enclosed at the back of this report. Only sample tables and figures are shown and discussed within the report.

Tabular Listing

The computations are listed in tabular form on the microfiche. Table I(a) is a copy of a typical listing of the combustion gas properties and species. Included in each table are the following:

(1) The case number and description of reactants, the oxidant-fuel weight ratio (O/F), the fuel-air weight ratio (F/A), the percent fuel, and the equivalence ratio, ϕ , which is the ratio of the F/A value to the stoichiometric F/A value, are included. The variation or change in case number has been used to specify a different inlet-air temperature; e.g., case 1 (shown) is 250 K; case 3 is 600 K; case 7 is 1150 K.

(2) Combustion gas properties:

- (a) Equilibrium temperature, T , K and $^{\circ}\text{F}$
- (b) Density, ρ , g/cc
- (c) Molecular weight, M
- (d) Specific heat (at constant pressure), C_p , cal/g-K
- (e) Isentropic exponent, $\gamma(s)$ (as defined in ref. 8)
- (f) Sonic velocity, m/sec

(3) Mole fractions of the various combustion gas species are given when the concentration is equal to or greater than 5 parts per million by volume (ppm).

The listing at the beginning of table I(a) is the input information on the fuel and oxidant. Listed are, from left to right, the fuel and oxidant atomic formulas, the weight fraction of each component, the heats of formation, the inlet temperature (fuel was introduced at 298 K and air for case 1 is 250 K), and the density of the fuel in the last column. This is a typical input listing used by Gordon in reference 5. Table I(a) lists the gas properties and species concentrations for 1820 different combinations of parametric conditions. The parameters and values used are as follows:

- (1) Combustion pressure, atm: 0.5, 1, 1.5, 2, 3, 4, 6, 10, 15, 20, 30, 40, 50
- (2) Inlet air temperature, K: 250, 400, 600, 800, 1000, 1100, 1150 (case numbers 1 through 7, respectively)
- (3) Equivalence ratio, ϕ : 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.85, 0.9, 0.95, 1.0, 1.05, 1.10, 1.15, 1.2, 1.4, 1.6, 1.8, 2.0

Information contained in table I(a) has been used to generate figures 1, 2, 3, and 6.

Table I(b) lists the combustion gas properties for different combinations of parametric conditions. These tables were computed by assigning pressure, temperature, and fuel-air ratio and then performing iterative calculations to obtain equilibrium composition and properties. The parameters used are the following:

- (1) Pressure, atm: 0.5 to 50 (in steps as indicated previously)
- (2) Temperature, K: 300 to 2800 in 100 K increments
- (3) Fuel-air ratio (weight): 0.000 to 0.100 in increments of 0.010

Information contained in table I(b) has been used to generate figures 4 and 5.

Graphical Presentations

Some typical figures have been included to illustrate the nature of the figures available on the included microfiche. Table II is a listing of the parameter variations and the range of computed gas properties for each of the six figures presented herein. Figure 1 gives computed values showing the effect of varying the inlet-air temperature, fuel-air ratio, and combustion pressure on equilibrium gas temperature. This figure covers pressures from 4 to 50 atmospheres. Figures at lower pressures, 0.5 to 4 atmospheres, are available on the microfiche.

Figure 2 is similar to figure 1 except that the equilibrium temperature is plotted as a function of fuel-air ratio for various values of inlet-air temperature at a single specified level of combustion pressure; in this case, 1 atmosphere.

Figure 3 is similar to figure 2 except that temperature rise values are plotted versus fuel-air ratio for a range of inlet-air temperatures, again at the 1-atmosphere pressure level. Curves at other pressure levels are to be found on the microfiche.

Figure 4 presents the variation in the isentropic exponent γ (ref. 8) as a function of the mixture temperature for various values of fuel-air ratio at single values of combustion pressure; again, at the 1-atmosphere pressure level. For the purposes of this report, mixture temperature and equilibrium temperature may be used interchangeably.

Figure 5 presents the variation in mixture molecular weight as a function of mixture temperature for various fuel-air ratios at specified levels of combustion pressure.

Figure 6 presents the relationship between the computed equilibrium temperature as a function of the initial temperature for various values of the equivalence ratio (ϕ) at specified pressure levels.

Summary of Results

Advanced computational schemes have been used to produce a series of tables and figures specifically for the combustion properties of ASTM Jet A fuel and dry air. Complete tabular listings and graphical representations are provided on the four enclosed microfiche.

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TABLE I. - CONCLUDED.

(b) Assigned temperature, pressure, and fuel-air ratio

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465													
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	1.1767-4	1.2607-4	1.3577-4	1.4709-4	1.6046-4	1.7651-4	1.9612-4	2.2063-4	2.5215-4	2.9418-4	3.5301-4	4.4126-4	5.8835-4					
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967					
CP, CAL/(G)(K)	0.2996	0.2950	0.2907	0.2864	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2422					
GAMMA (S)	1.2971	1.3030	1.3089	1.3151	1.3215	1.3285	1.3369	1.3466	1.3574	1.3688	1.3799	1.3893	1.3952					
SON VEL,M/SEC	747.3	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	346.6					
MOLE FRACTIONS																		
AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O	0.01960	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17642	0.17667	0.17683	0.17693	0.17699	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703
MOLE FRACTIONS																		
AR	0.00907	0.00912	0.00915	0.00918	0.00920	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00574	0.00408	0.00273	0.00172	0.00102	0.00057	0.00030	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01477	0.01654	0.01797	0.01905	0.01979	0.02027	0.02056	0.02072	0.02081	0.02085	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00213	0.00128	0.00072	0.00039	0.00019	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00069	0.00051	0.00036	0.00024	0.00015	0.00009	0.00005	0.00003	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01210	0.01373	0.01513	0.01629	0.01723	0.01795	0.01849	0.01889	0.01916	0.01935	0.01947	0.01954	0.01959	0.01959	0.01959	0.01959	0.01959	0.01959
NO	0.03138	0.02779	0.02423	0.02080	0.01756	0.01455	0.01182	0.00940	0.00729	0.00549	0.00401	0.00281	0.00189	0.00119	0.00072	0.00041	0.00022	0.00011
NO2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.74368	0.74963	0.75454	0.75853	0.76173	0.76429	0.76633	0.76797	0.76927	0.77032	0.77114	0.77178	0.77227	0.77267	0.77298	0.77321	0.77337	0.77353
O	0.02082	0.01410	0.00922	0.00580	0.00351	0.00202	0.00111	0.00057	0.00028	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01083	0.00899	0.00720	0.00557	0.00416	0.00299	0.00207	0.00137	0.00087	0.00052	0.00030	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000
O2	0.14877	0.15421	0.15871	0.16241	0.16546	0.16795	0.16999	0.17165	0.17299	0.17406	0.17491	0.17556	0.17606	0.17646	0.17677	0.17700	0.17716	0.17724

TABLE II.—LISTING OF PARAMETER VARIATIONS FOR FIGURES 1 to 6

Figure	Fuel-air ratio (weight)	(Fuel-air ratio)/(stoichiometric fuel-air ratio), ϕ	Initial temperature, K	Equilibrium temperature, K	Temperature rise, K, kelvins	Combustion pressure, atm	Mixture temperature, K	$\gamma(s)$	Molecular weight
1(a)	0.000-0.080	-----	250-1150	500-2600	-----	0.5-4.0	-----	-----	-----
(b)	.060-0.140	-----	↓	2600-1600	-----	0.5-4.0	-----	-----	-----
(c)	.000-0.080	-----	↓	500-2700	-----	4.0-50.0	-----	-----	-----
(d)	.060-0.140	-----	↓	2700-1600	-----	4.0-50.0	-----	-----	-----
2(a)	0.000-0.095	-----	250-1200	250-2580	-----	0.5	-----	-----	-----
(b)	↓	-----	↓	250-2630	-----	1.0	-----	-----	-----
(c)	↓	-----	↓	250-2650	-----	1.5	-----	-----	-----
(d)	↓	-----	↓	250-2670	-----	2.0	-----	-----	-----
(e)	↓	-----	↓	250-2690	-----	3.0	-----	-----	-----
(f)	↓	-----	↓	250-2705	-----	4.0	-----	-----	-----
(g)	↓	-----	↓	250-2730	-----	6.0	-----	-----	-----
(h)	↓	-----	↓	250-2755	-----	10.0	-----	-----	-----
(i)	↓	-----	↓	250-2775	-----	15.0	-----	-----	-----
(j)	↓	-----	↓	250-2780	-----	20.0	-----	-----	-----
(k)	↓	-----	↓	250-2800	-----	30.0	-----	-----	-----
(l)	↓	-----	↓	250-2815	-----	40.0	-----	-----	-----
(m)	↓	-----	↓	250-2830	-----	50.0	-----	-----	-----
3(a)	0.000-0.095	-----	250-1200	-----	0-2000	0.5	-----	-----	-----
(b)	↓	-----	↓	-----	0-2025	1.0	-----	-----	-----
(c)	↓	-----	↓	-----	0-2030	1.5	-----	-----	-----
(d)	↓	-----	↓	-----	0-2040	2.0	-----	-----	-----
(e)	↓	-----	↓	-----	0-2045	3.0	-----	-----	-----
(f)	↓	-----	↓	-----	0-2050	4.0	-----	-----	-----
(g)	↓	-----	↓	-----	0-2060	6.0	-----	-----	-----
(h)	↓	-----	↓	-----	0-2070	10.0	-----	-----	-----
(i)	↓	-----	↓	-----	0-2080	15.0	-----	-----	-----
(j)	↓	-----	↓	-----	0-2085	20.0	-----	-----	-----
(k)	↓	-----	↓	-----	0-2090	30.0	-----	-----	-----
(l)	↓	-----	↓	-----	0-2095	40.0	-----	-----	-----
(m)	↓	-----	↓	-----	0-2098	50.0	-----	-----	-----
4(a)	0.000-0.06824	-----	-----	-----	-----	0.5	300-2800	1.400-1.134	-----
(b)	↓	-----	-----	-----	-----	1.0	↓	1.400-1.139	-----
(c)	↓	-----	-----	-----	-----	1.5	↓	1.400-1.143	-----
(d)	↓	-----	-----	-----	-----	2.0	↓	1.400-1.146	-----
(e)	↓	-----	-----	-----	-----	3.0	↓	1.400-1.149	-----
(f)	↓	-----	-----	-----	-----	4.0	↓	1.400-1.151	-----
(g)	↓	-----	-----	-----	-----	6.0	↓	1.400-1.156	-----
(h)	↓	-----	-----	-----	-----	10.0	↓	1.400-1.160	-----
(i)	↓	-----	-----	-----	-----	15.0	↓	1.400-1.165	-----
(j)	↓	-----	-----	-----	-----	20.0	↓	1.400-1.168	-----
(k)	↓	-----	-----	-----	-----	30.0	↓	1.400-1.172	-----
(l)	↓	-----	-----	-----	-----	40.0	↓	1.400-1.175	-----
(m)	↓	-----	-----	-----	-----	50.0	↓	1.400-1.178	-----
5(a)	0.000-0.06824	-----	-----	-----	-----	0.5	300-2800	-----	28.97-27.60
(b)	↓	-----	-----	-----	-----	1.0	↓	-----	28.97-27.60
(c)	↓	-----	-----	-----	-----	1.5	↓	-----	28.97-27.62
(d)	↓	-----	-----	-----	-----	2.0	↓	-----	28.97-27.76
(e)	↓	-----	-----	-----	-----	3.0	↓	-----	28.97-28.00
(f)	↓	-----	-----	-----	-----	4.0	↓	-----	28.97-28.00
(g)	↓	-----	-----	-----	-----	6.0	↓	-----	28.97-28.06
(h)	↓	-----	-----	-----	-----	10.0	↓	-----	28.97-28.21
(i)	↓	-----	-----	-----	-----	15.0	↓	-----	28.97-28.30
(j)	↓	-----	-----	-----	-----	20.0	↓	-----	28.97-28.35
(k)	↓	-----	-----	-----	-----	30.0	↓	-----	28.97-28.42
(l)	↓	-----	-----	-----	-----	40.0	↓	-----	28.97-28.50
(m)	↓	-----	-----	-----	-----	50.0	↓	-----	28.97-28.50
6(a)	-----	0.10-1.00	250-1250	540-2580	-----	0.5	-----	-----	-----
(b)	-----	↓	↓	540-2620	-----	1.0	-----	-----	-----
(c)	-----	↓	↓	540-2650	-----	1.5	-----	-----	-----
(d)	-----	↓	↓	540-2665	-----	2.0	-----	-----	-----
(e)	-----	↓	↓	540-2685	-----	3.0	-----	-----	-----
(f)	-----	↓	↓	540-2700	-----	4.0	-----	-----	-----
(g)	-----	↓	↓	540-2725	-----	6.0	-----	-----	-----
(h)	-----	↓	↓	540-2750	-----	10.0	-----	-----	-----
(i)	-----	↓	↓	540-2770	-----	15.0	-----	-----	-----
(j)	-----	↓	↓	540-2790	-----	20.0	-----	-----	-----
(k)	-----	↓	↓	540-2805	-----	30.0	-----	-----	-----
(l)	-----	↓	↓	540-2815	-----	40.0	-----	-----	-----
(m)	-----	↓	↓	540-2830	-----	50.0	-----	-----	-----

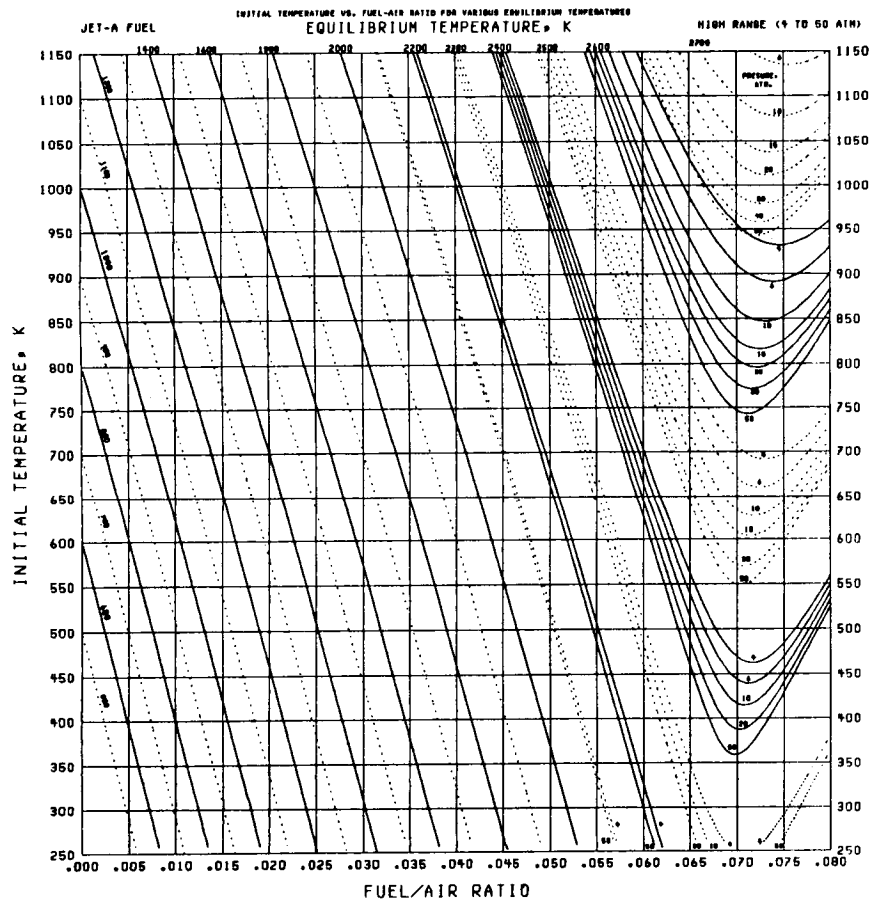


Figure 1.—Equilibrium temperature as function of initial temperature, fuel-air ratio, and pressure range of 4 to 50 atmospheres. Reproduction of microfiche figure 1(c).

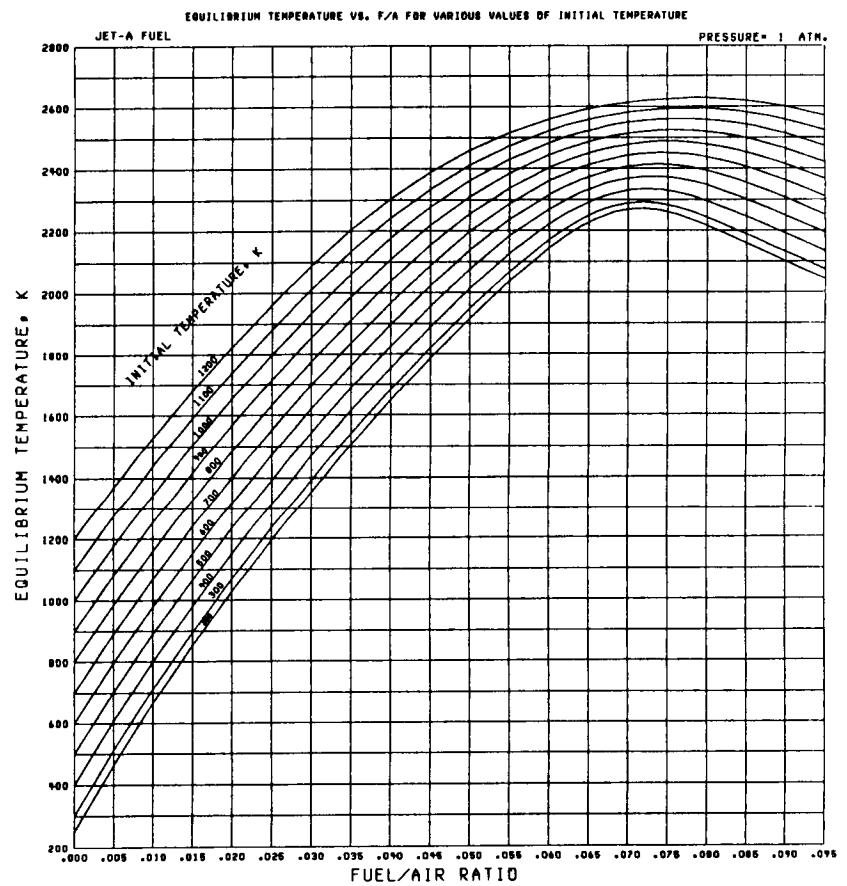


Figure 2.—Equilibrium temperature as function of initial temperature and fuel-air ratio at pressure of 1 atmosphere. Reproduction of microfiche figure 2(b).

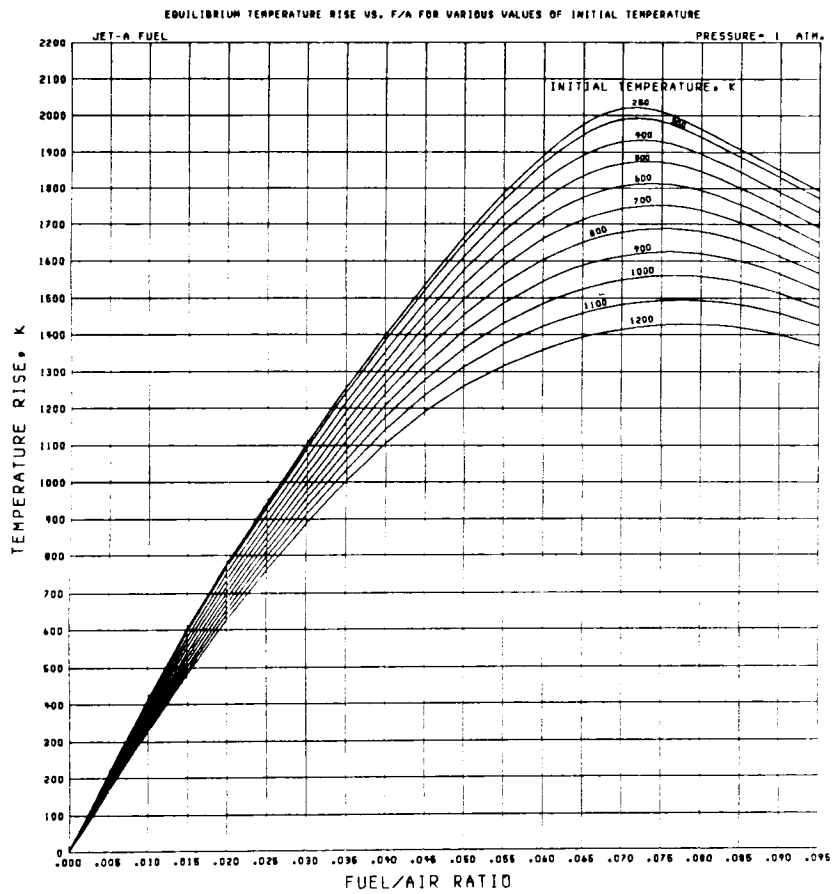


Figure 3.—Equilibrium temperature rise as function of initial temperature and fuel-air ratio at pressure of 1 atmosphere. Reproduction of microfiche figure 3(b).

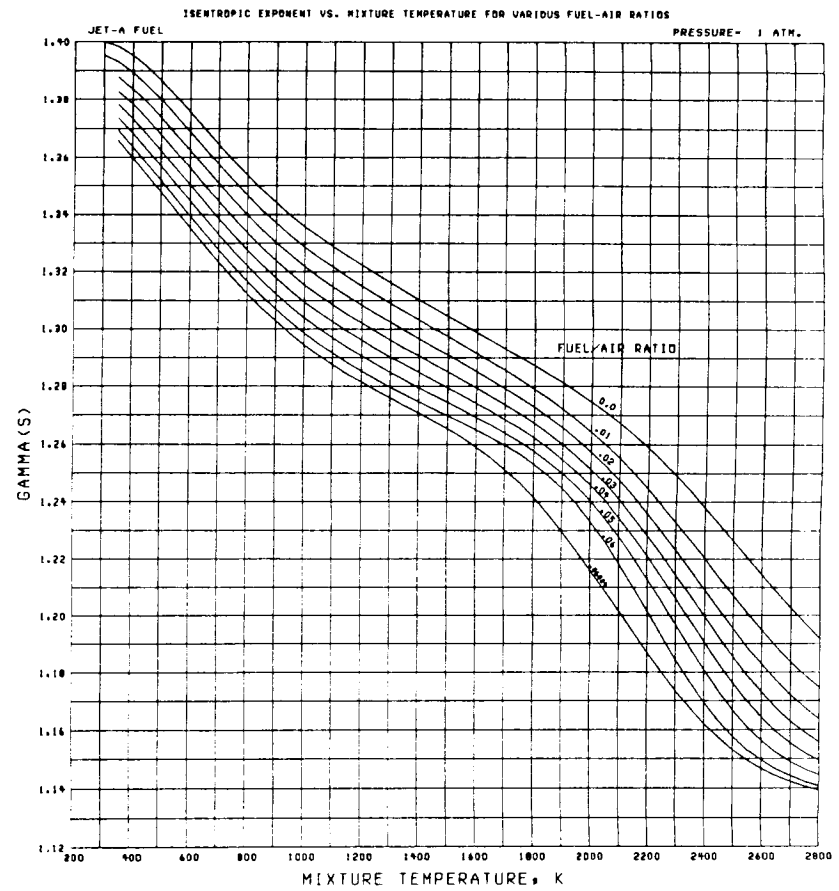


Figure 4.— $\gamma(s)$ as function of mixture temperature and fuel-air ratio at pressure of 1 atmosphere. Reproduction of microfiche figure 4(b).

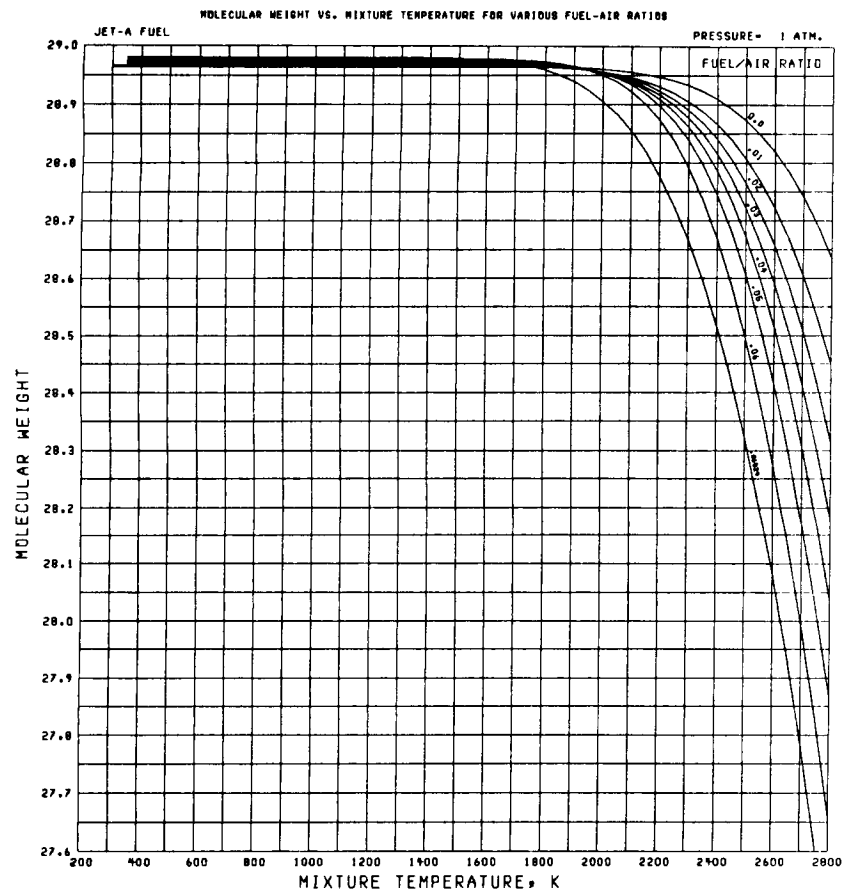


Figure 5.—Molecular weight as function of mixture temperature and fuel-air ratio at pressure of 1 atmosphere. Reproduction of microfiche figure 5(b).

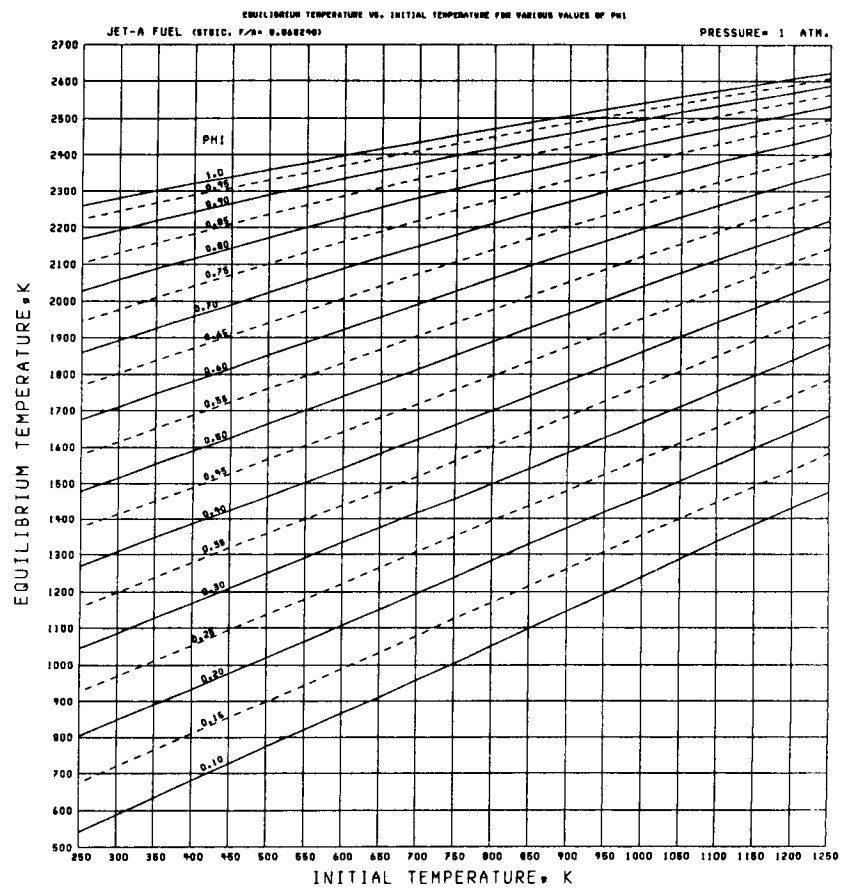


Figure 6.—Equilibrium temperature as function of initial temperature and equivalence ratio ϕ at pressure of 1 atmosphere. Reproduction of microfiche figure 6(b).

1. Report No. NASA TP-2359		2. Government Accession No.		3. Recipient's Catalog No.	
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16. Abstract A series of computations has been made to produce the equilibrium temperature and gas composition for ASTM Jet A fuel and dry air. The computed tables and figures provide combustion gas property data for pressures from 0.5 to 50 atmospheres and equivalence ratios from 0 to 2.0. Only sample tables and figures are provided in this report. The complete set of tables and figures is provided on four microfiche films supplied with this report.					
17. Key Words (Suggested by Author(s)) Combustion gas properties			18. Distribution Statement Unclassified - unlimited STAR Category 07		
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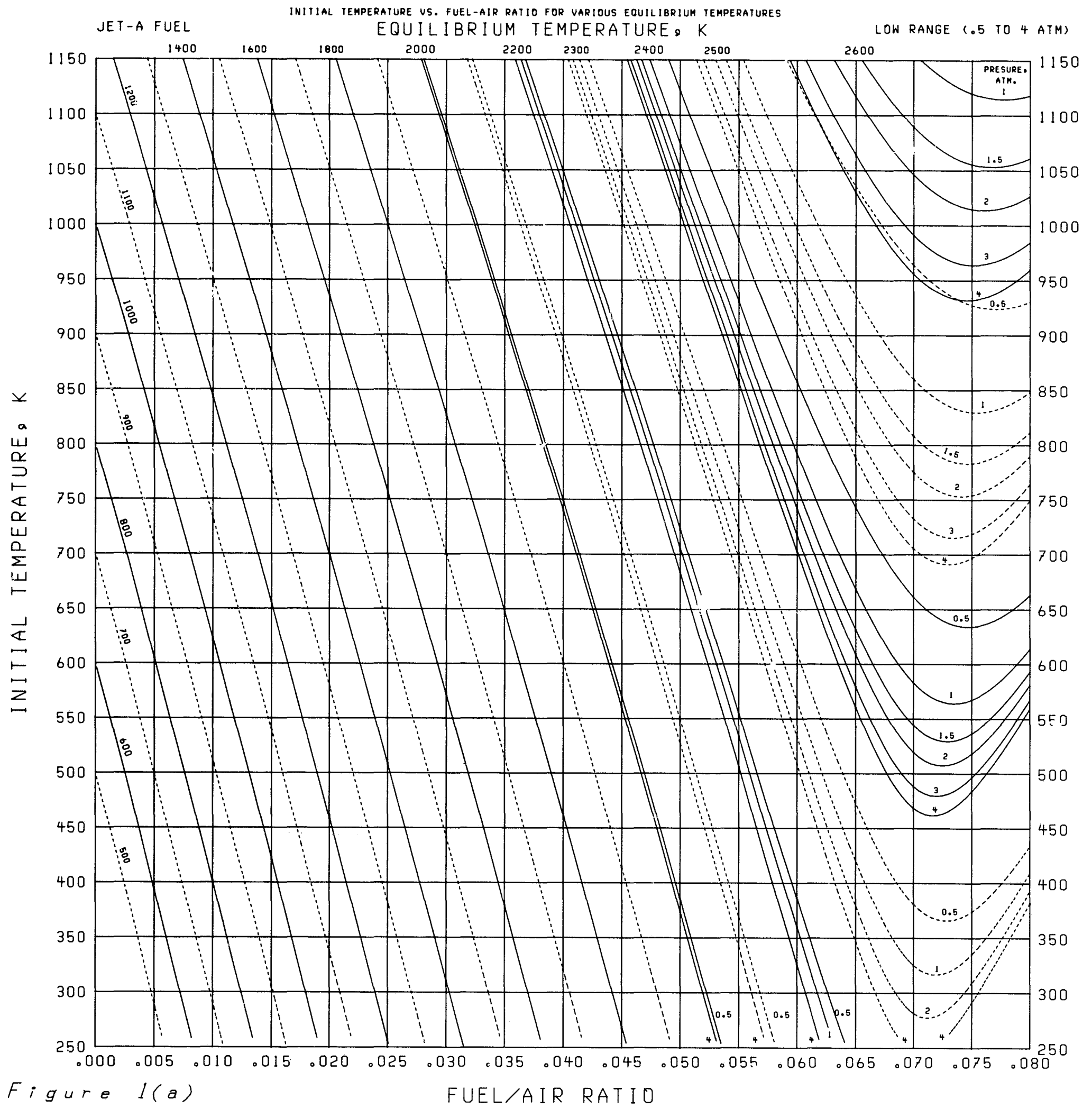


Figure 1(a)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

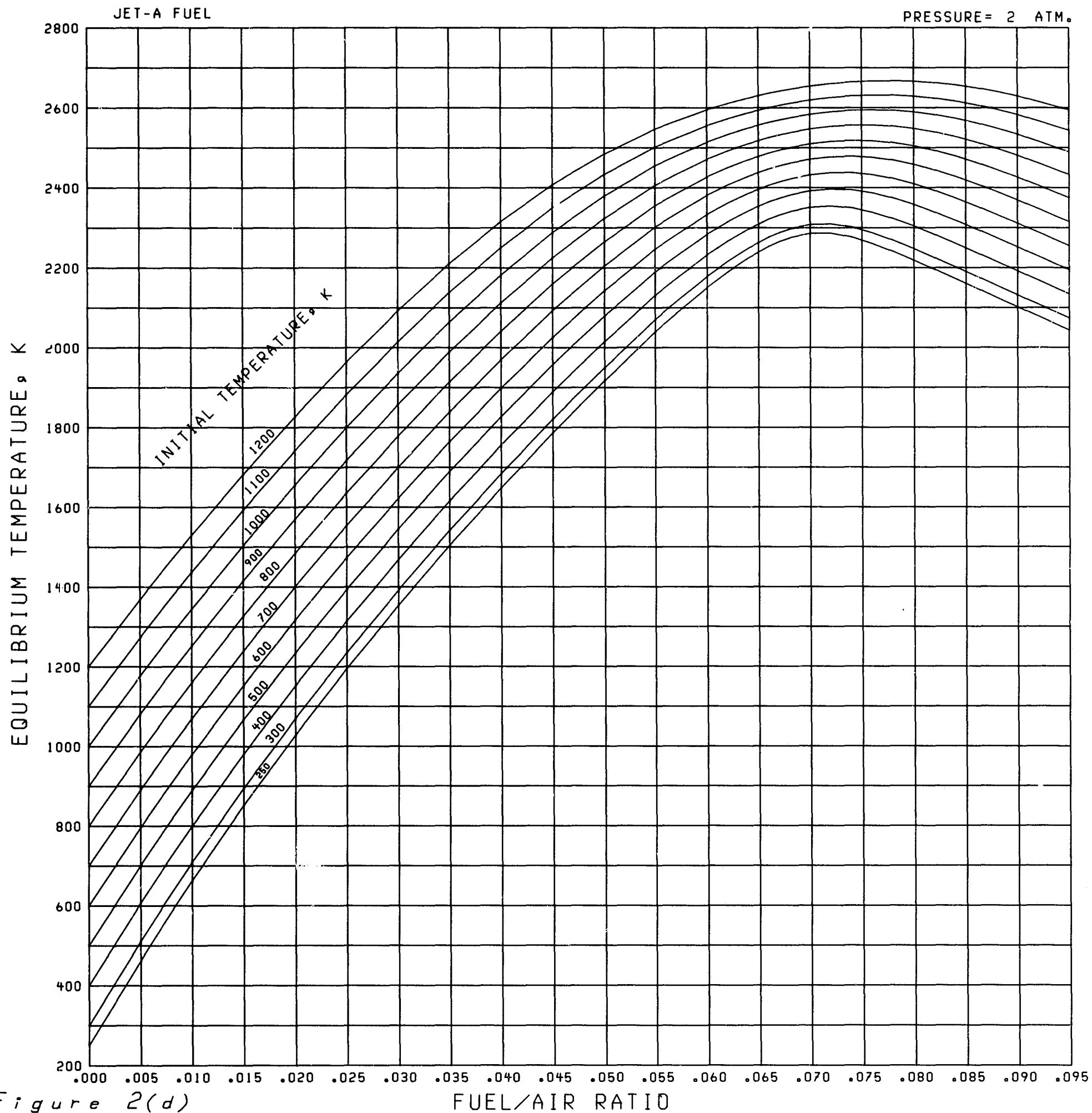


Figure 2(d)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE=30 ATM.

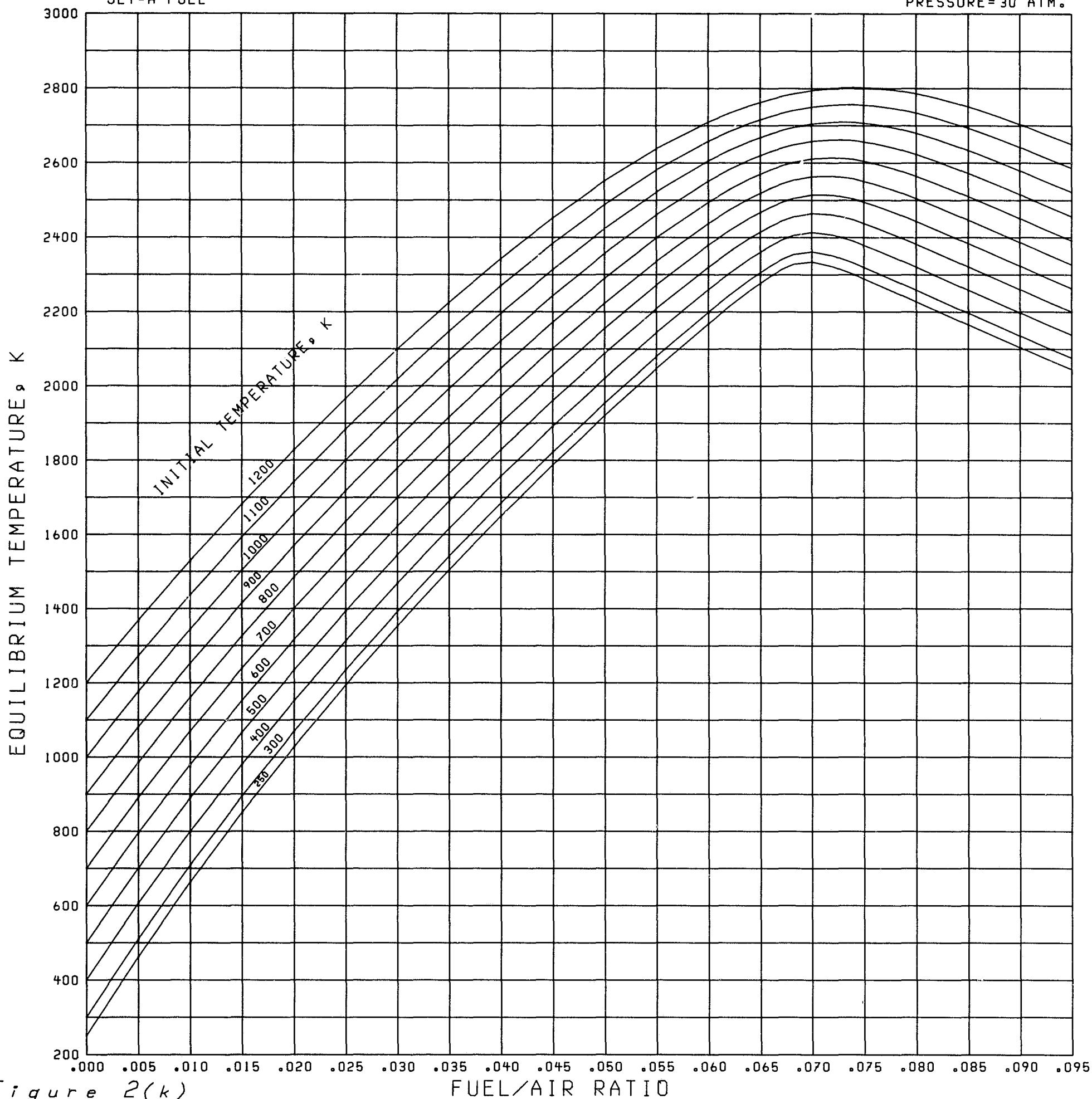


Figure 2(k)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

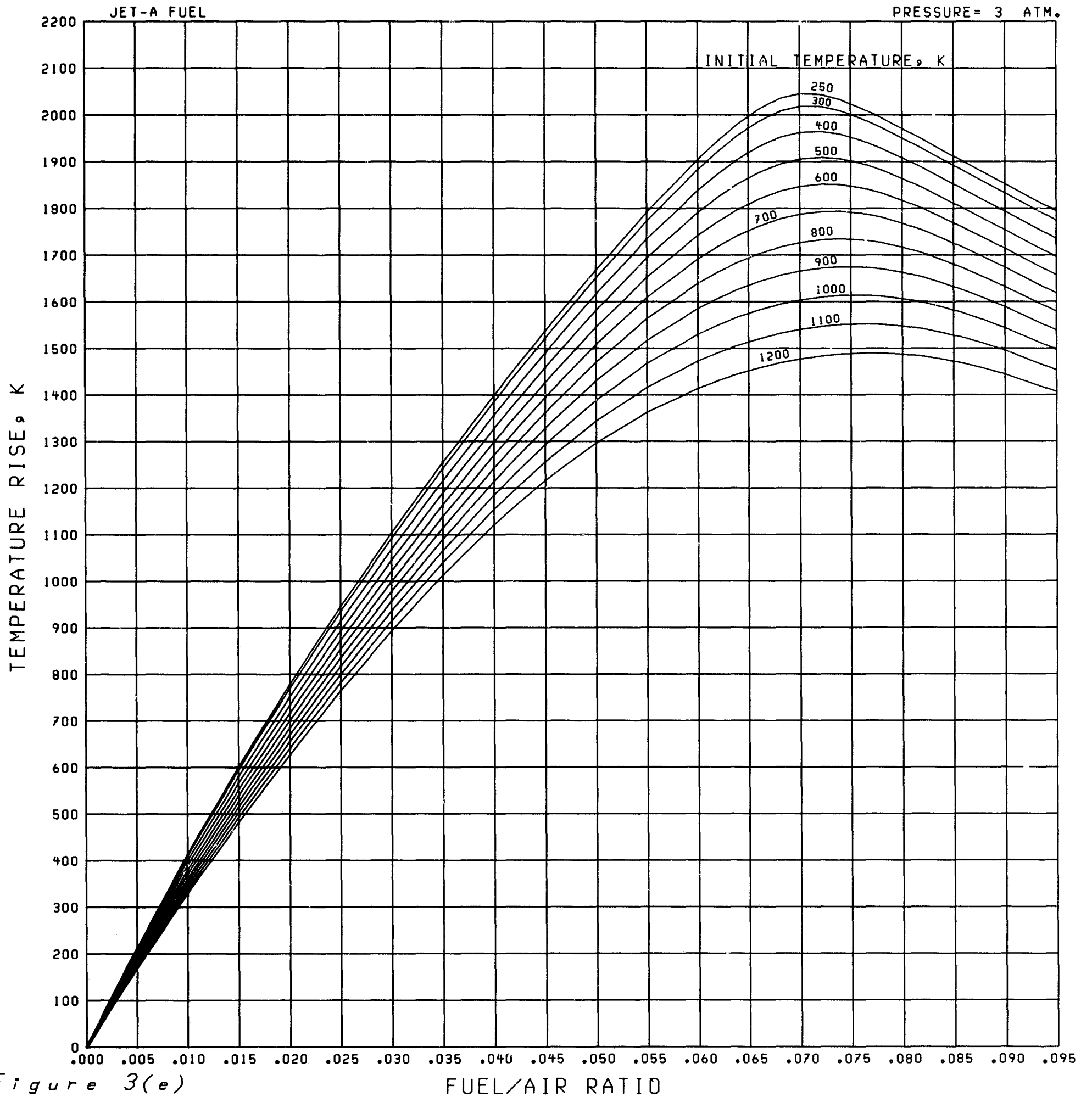


Figure 3(e)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

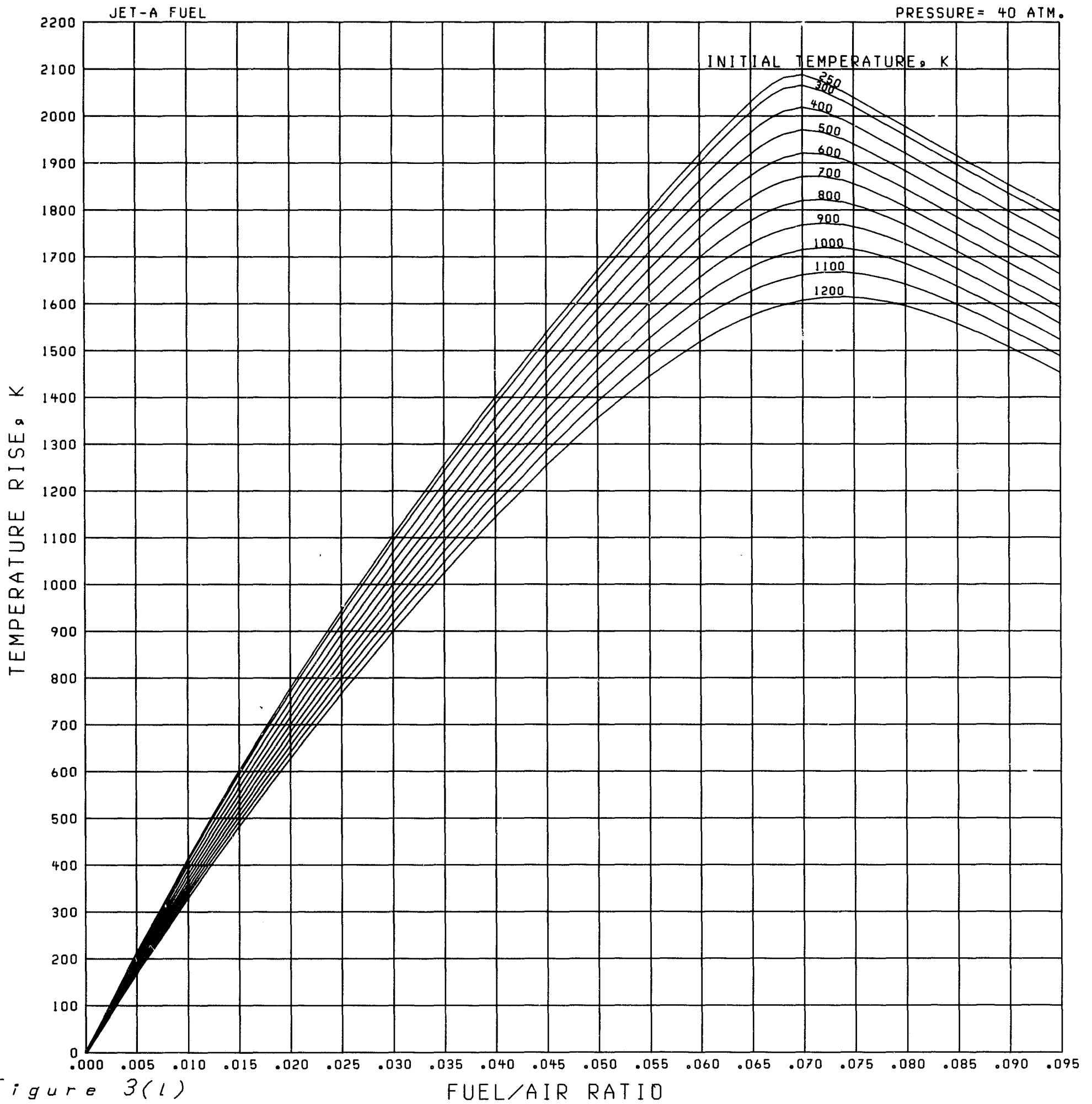


Figure 3(1)

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 4 ATM.

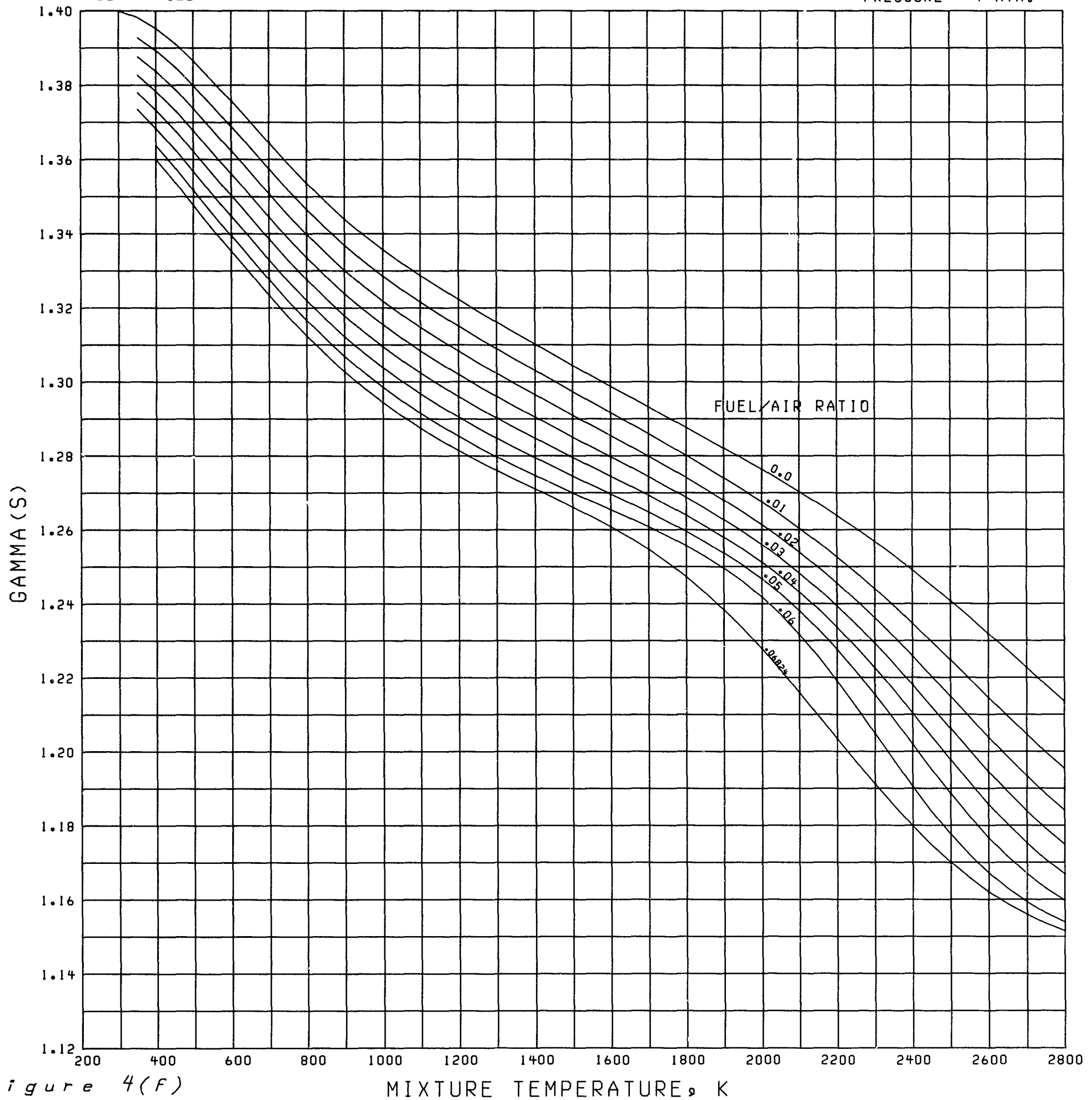


Figure 4(f)

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 50 ATM.

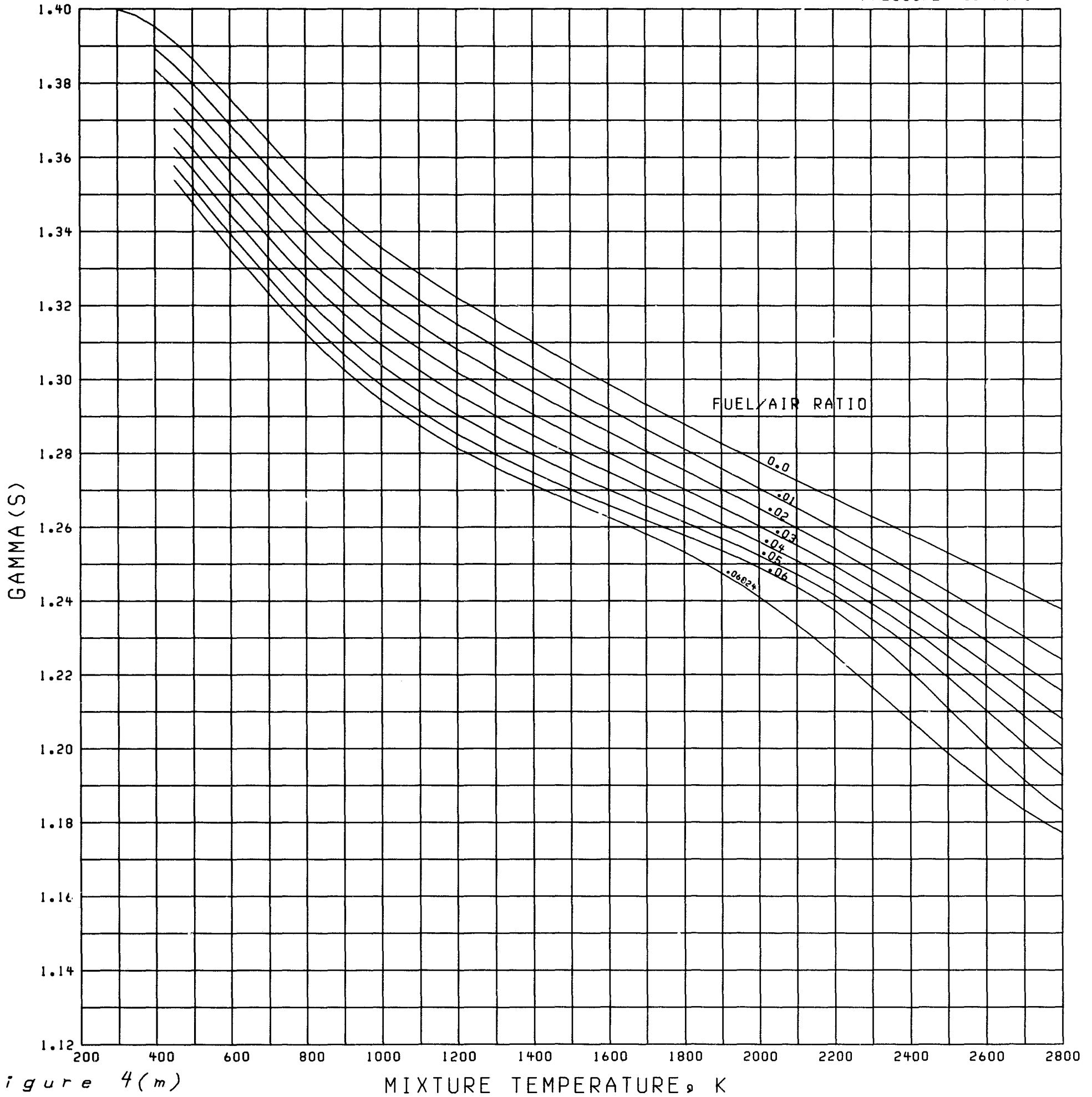


Figure 4(m)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 6 ATM.

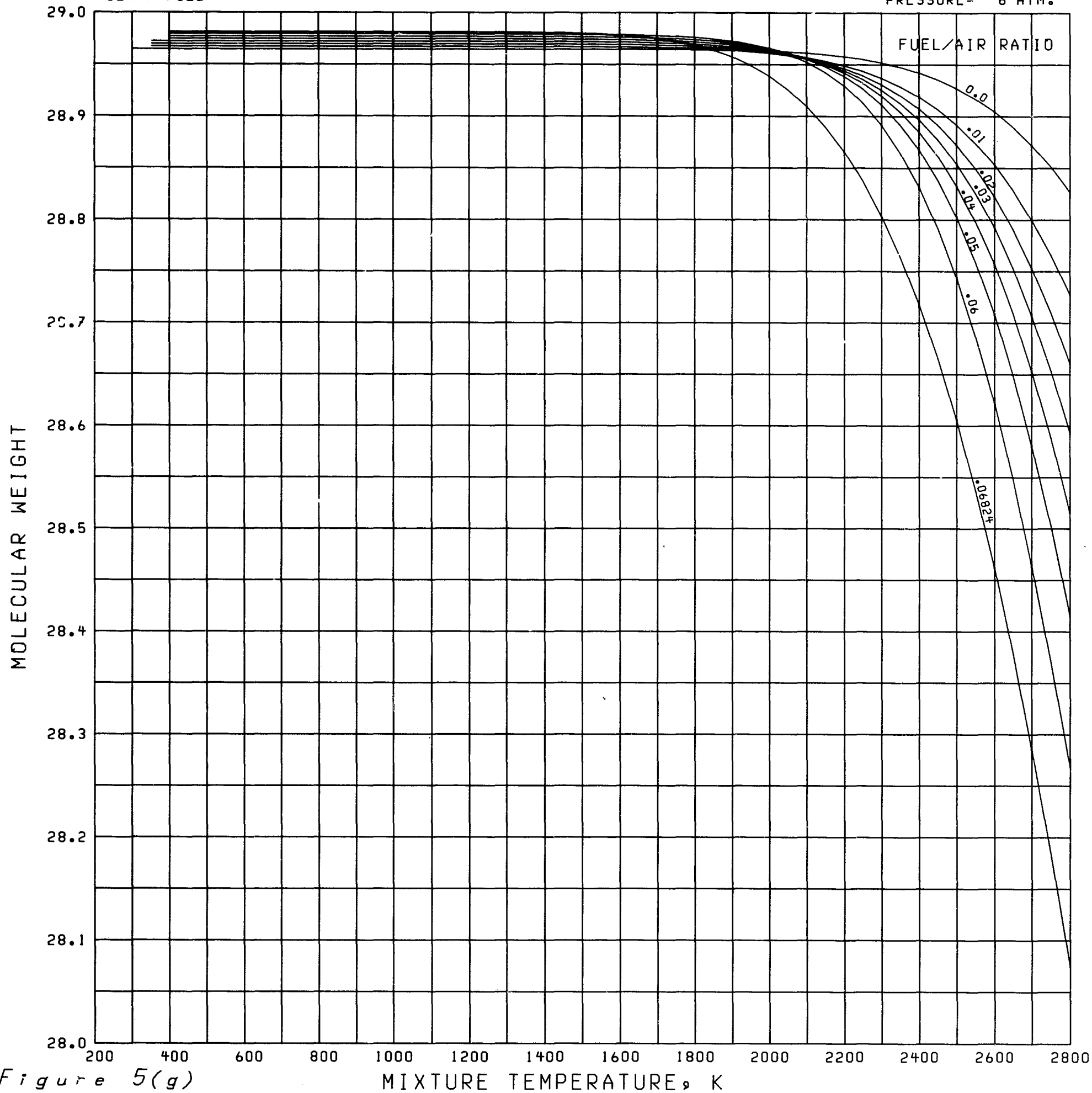


Figure 5(g)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE=0.5 ATM.

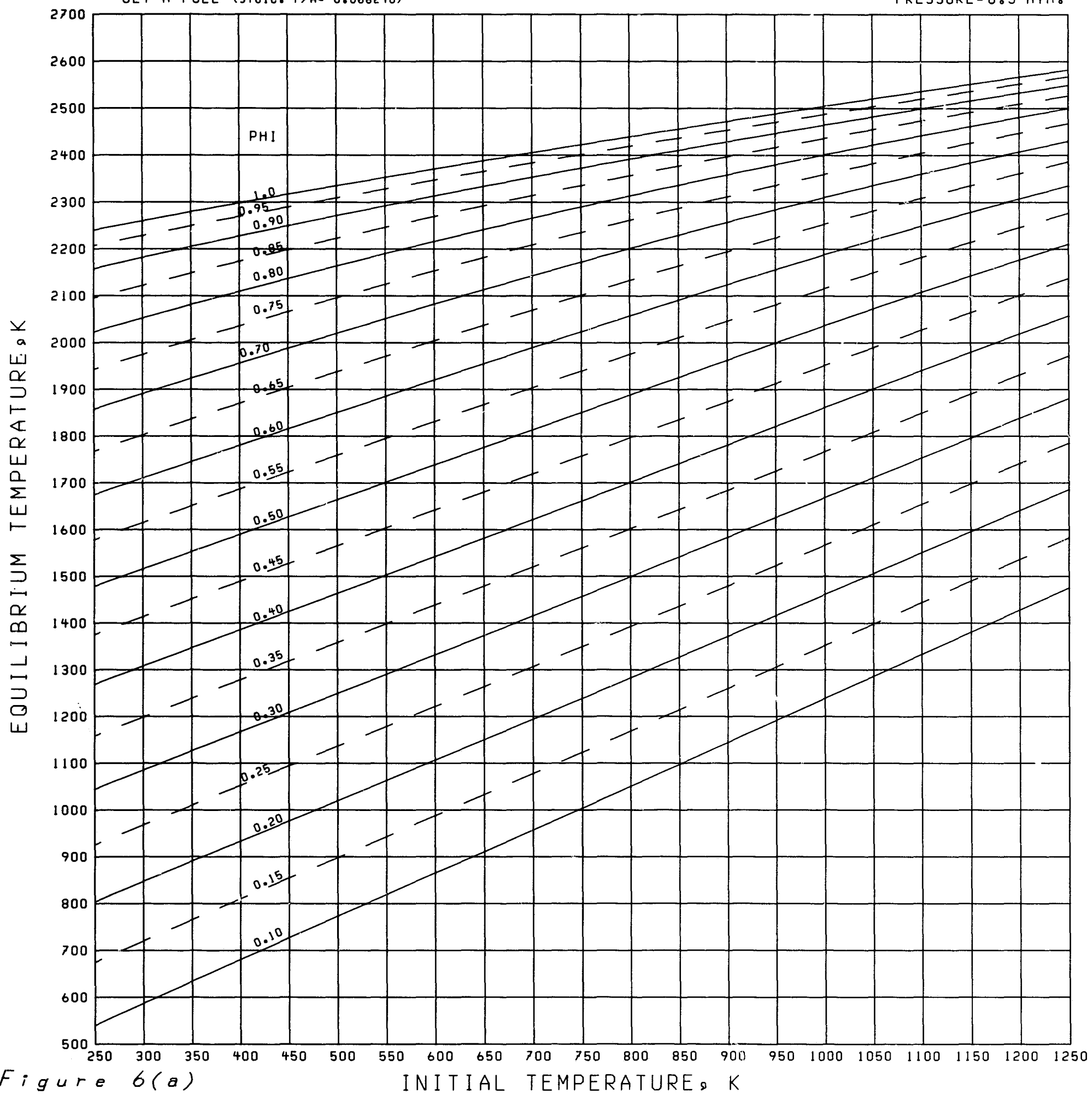


Figure 6(a)

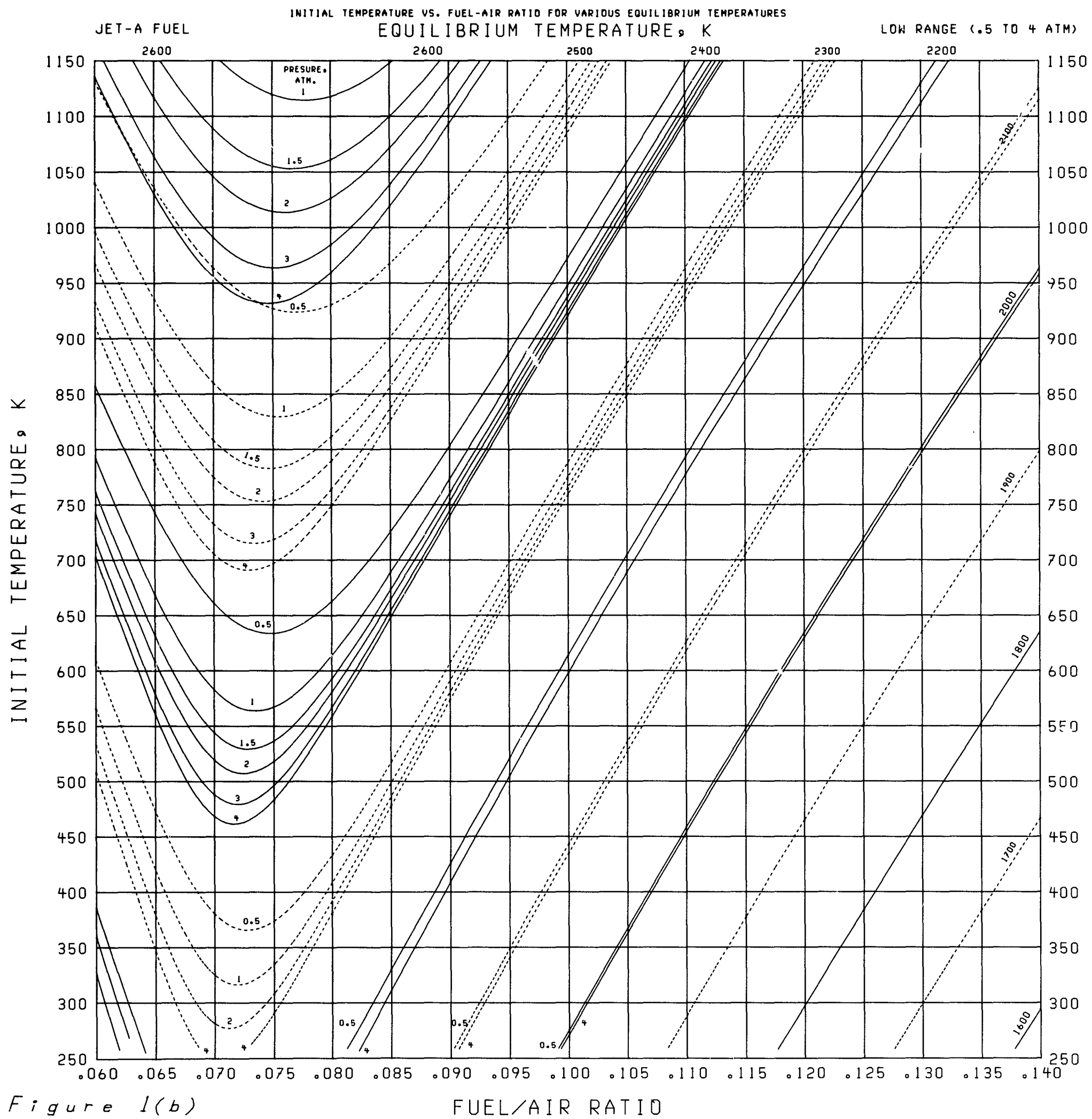


Figure 1(b)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

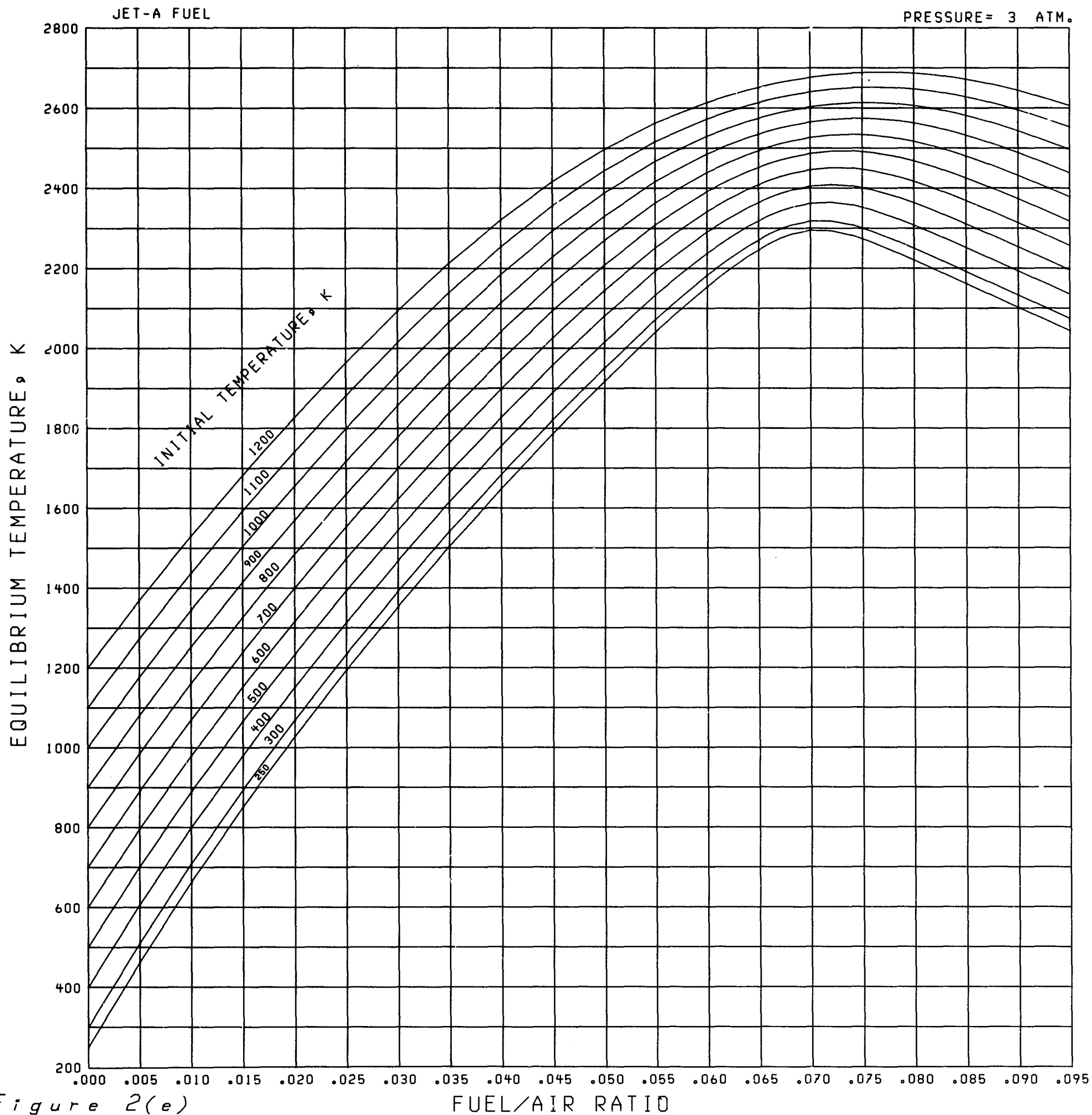


Figure 2(e)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE=40 ATM.

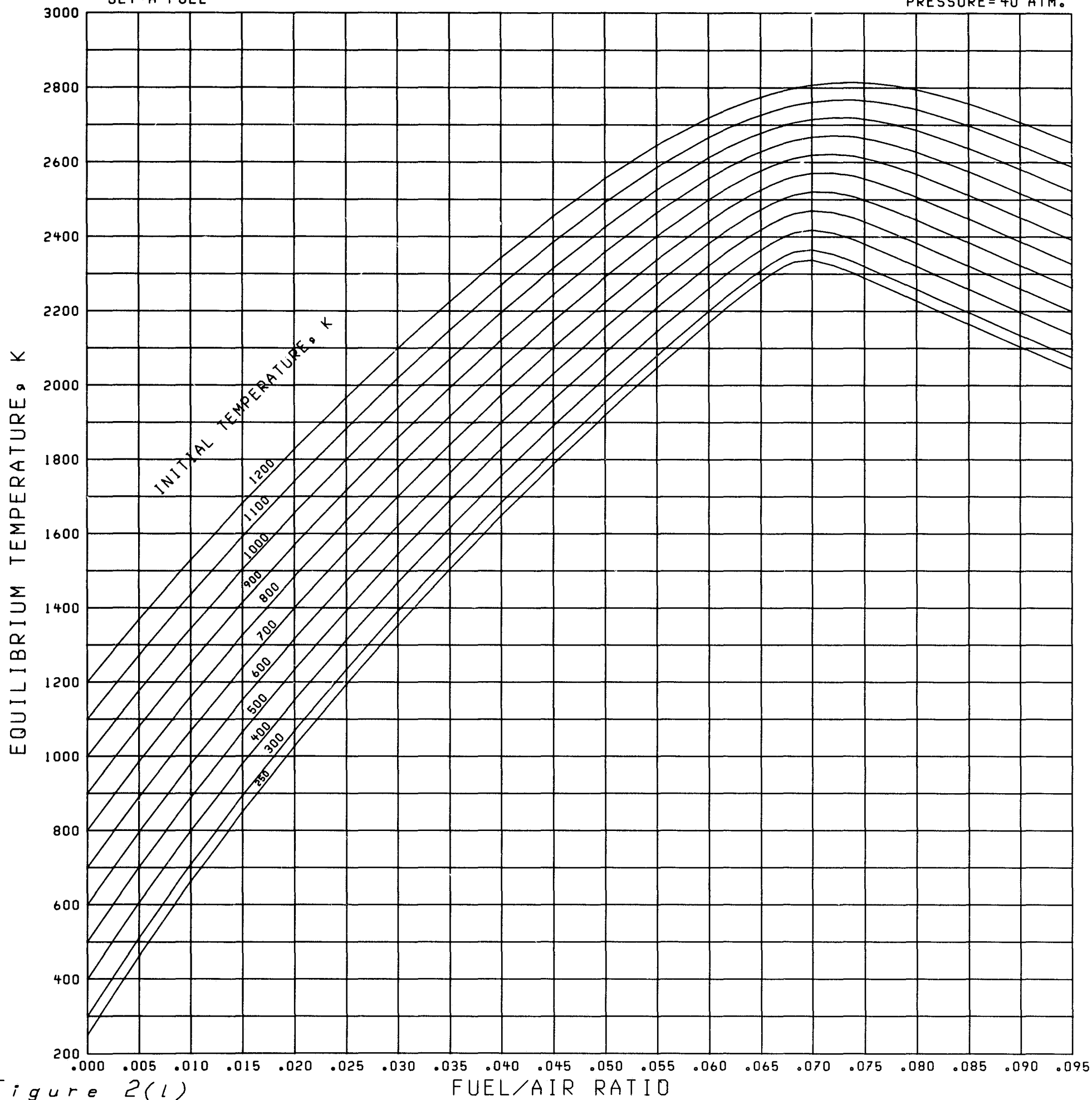


Figure 2(1)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

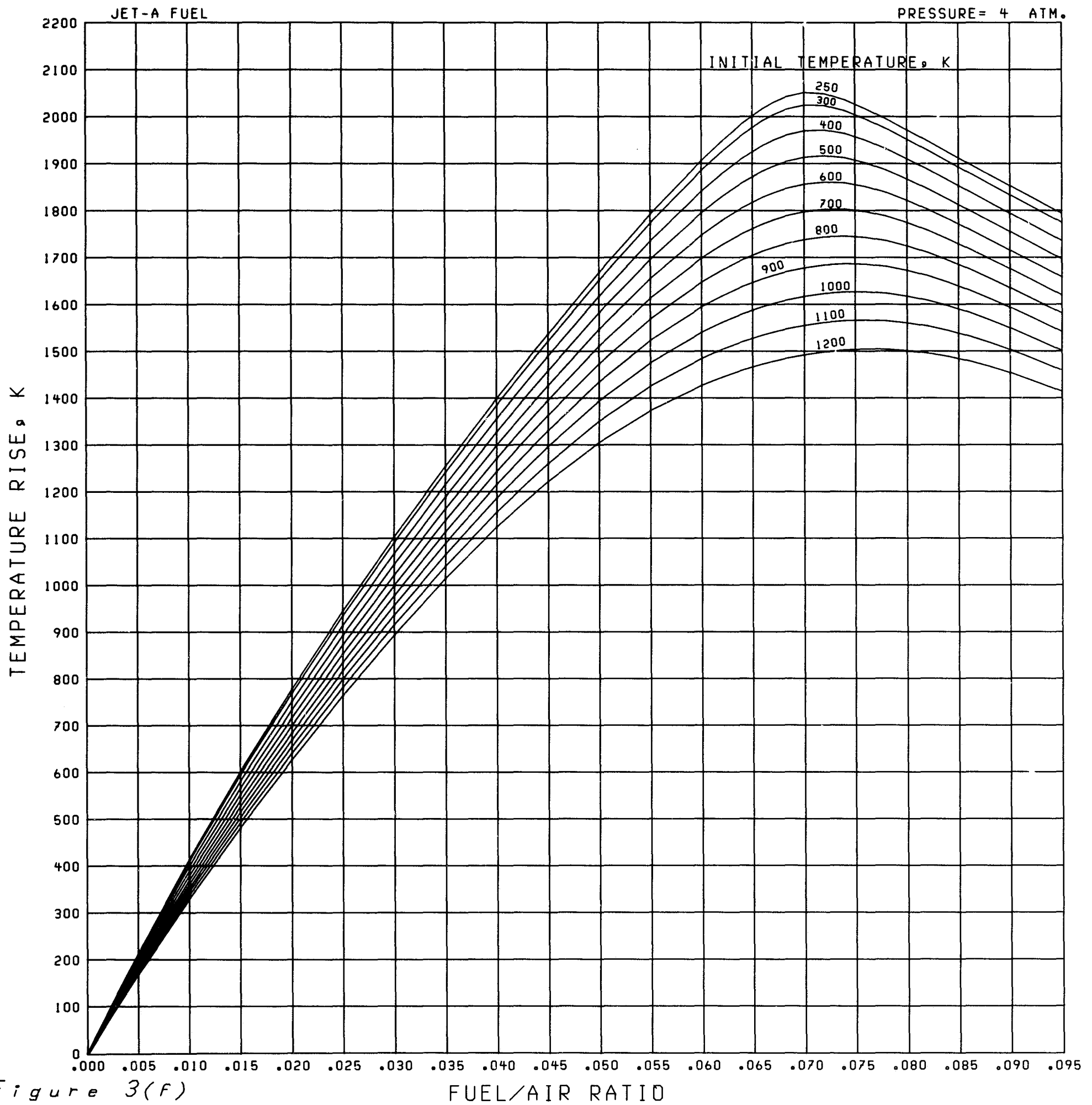
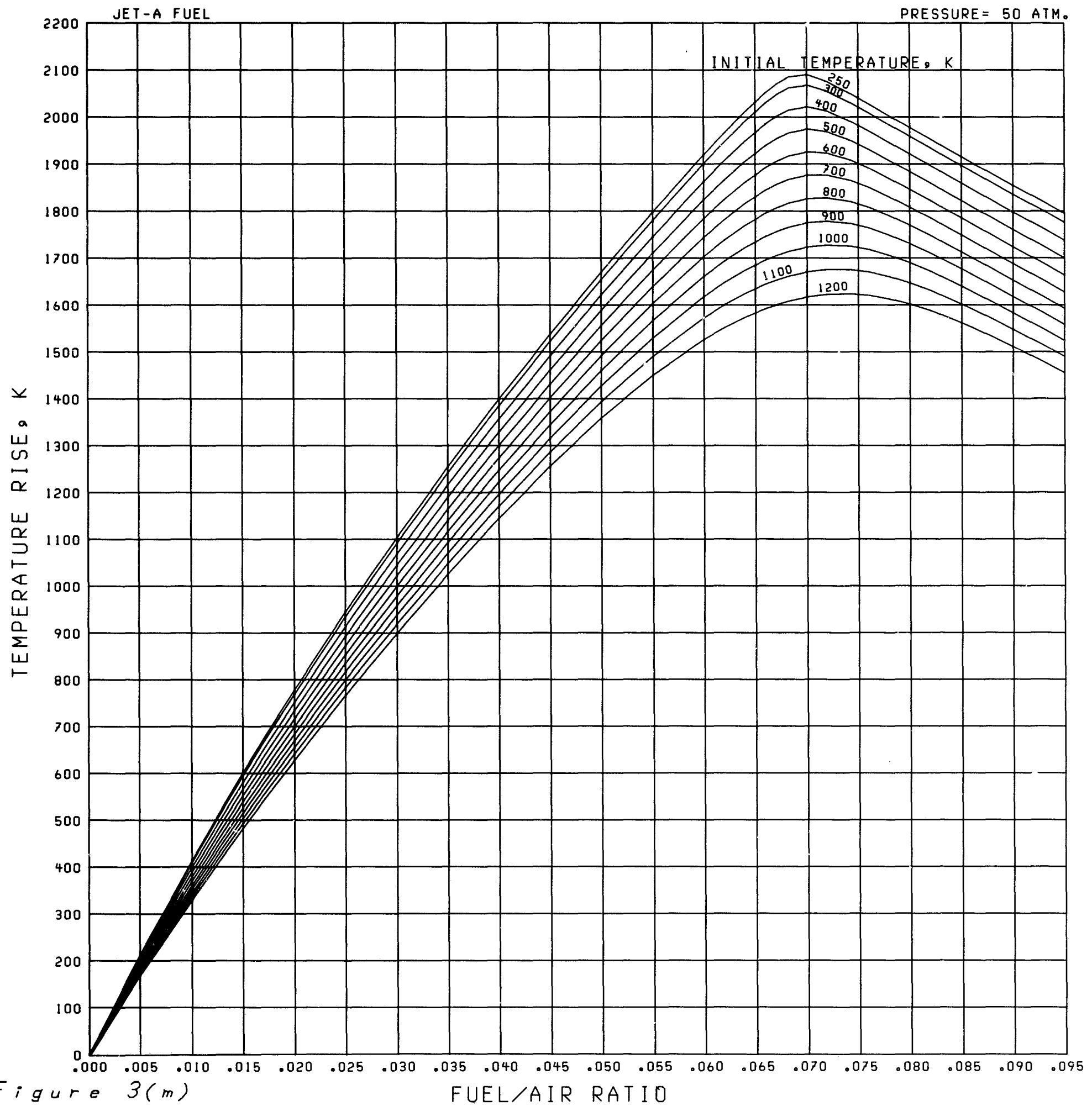


Figure 3(f)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE



ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 6 ATM.

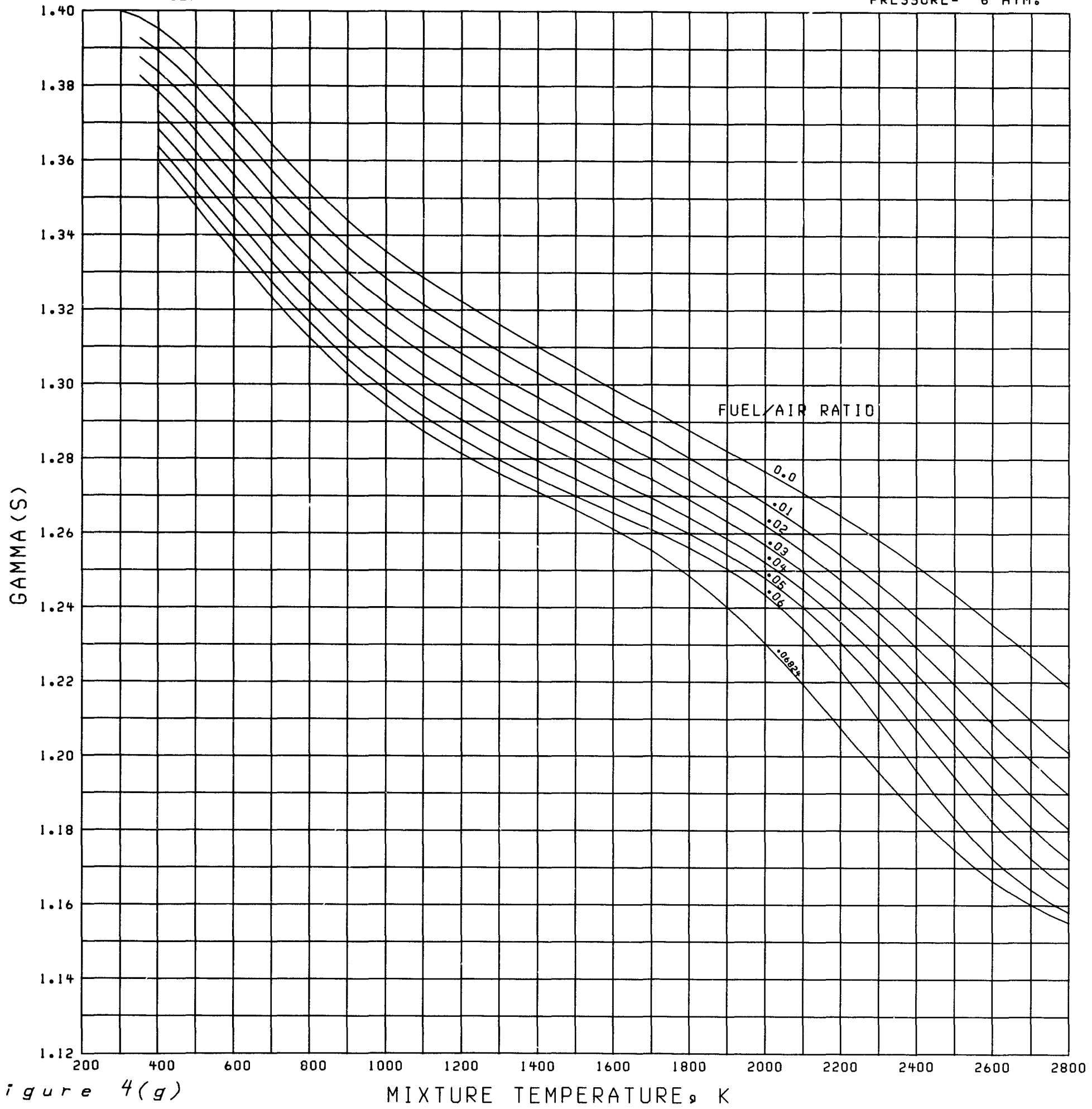


Figure 4(g)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE=0.5 ATM.

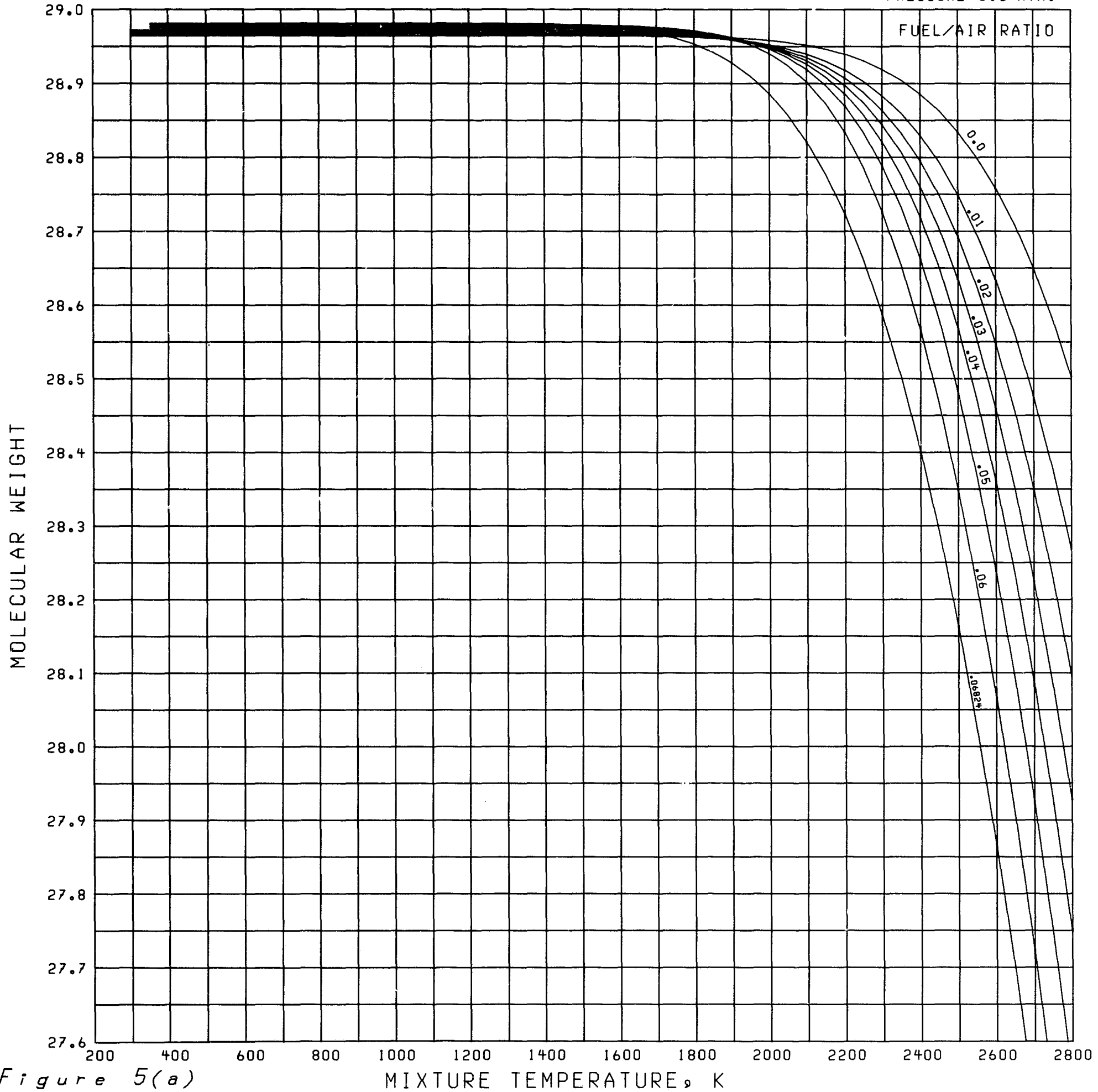


Figure 5(a)

MIXTURE TEMPERATURE, K

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

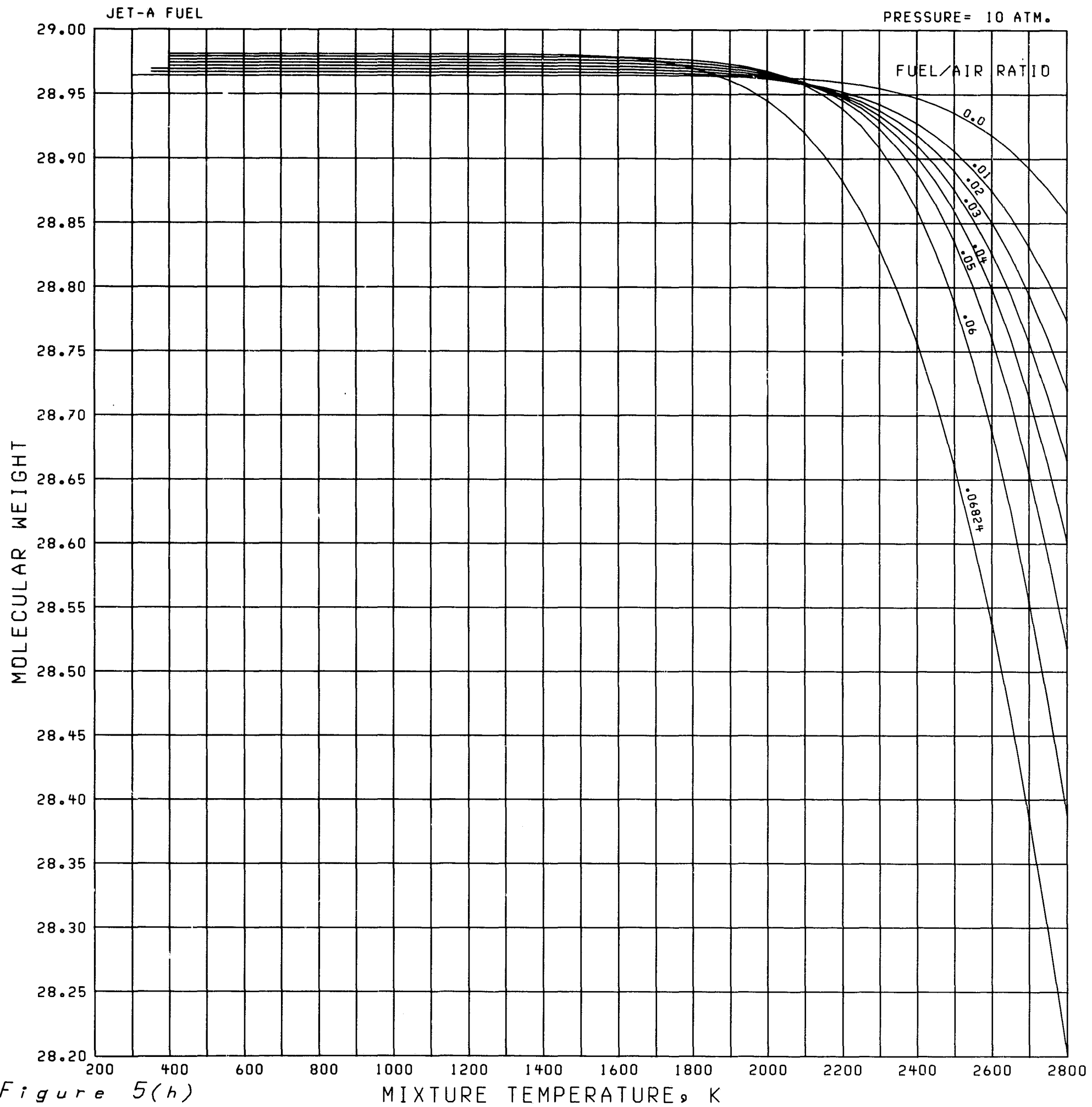


Figure 6(a)

INITIAL TEMPERATURE, K

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 1 ATM.

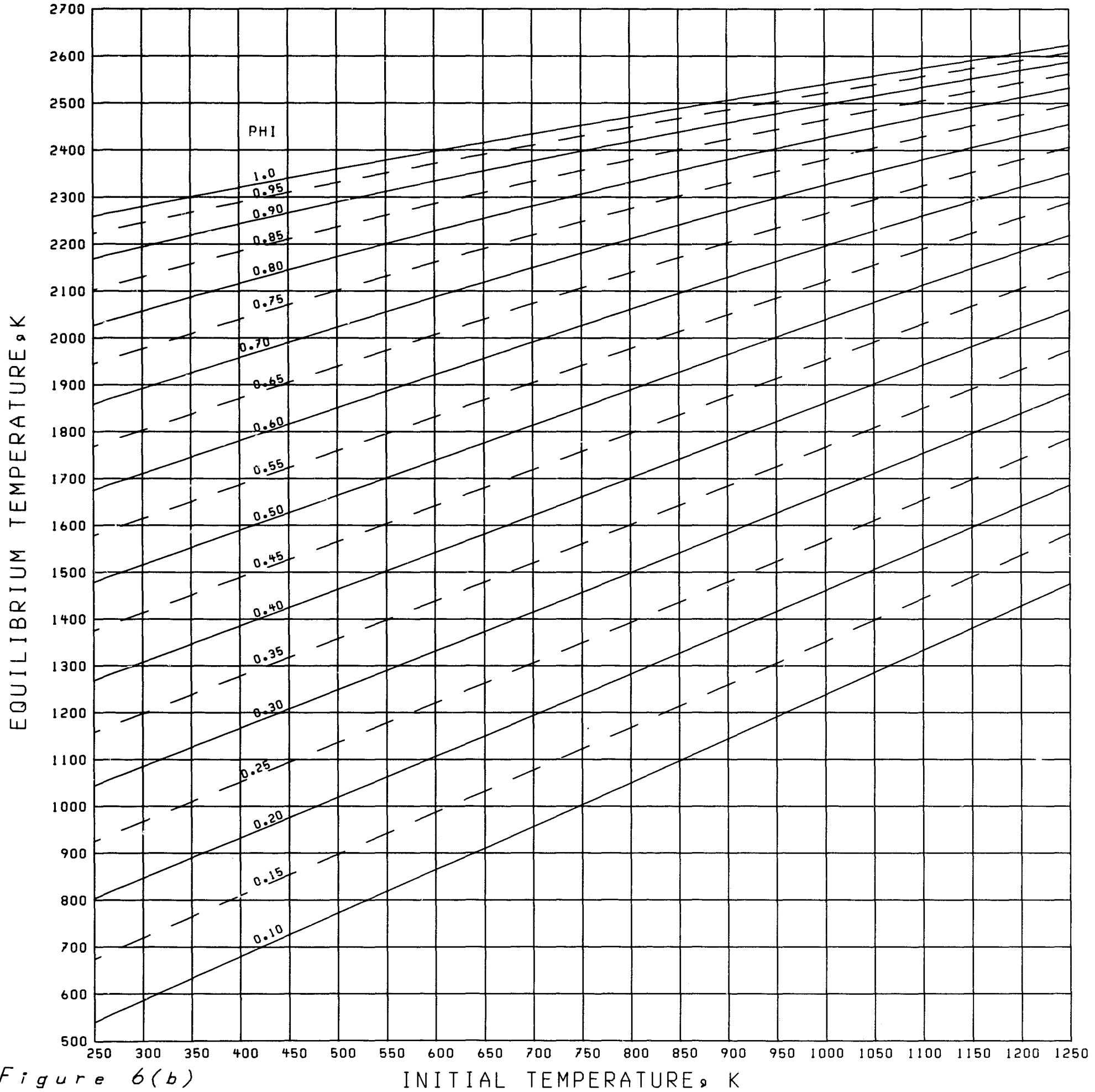


Figure 6(b)

INITIAL TEMPERATURE, K

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE = 4 ATM.

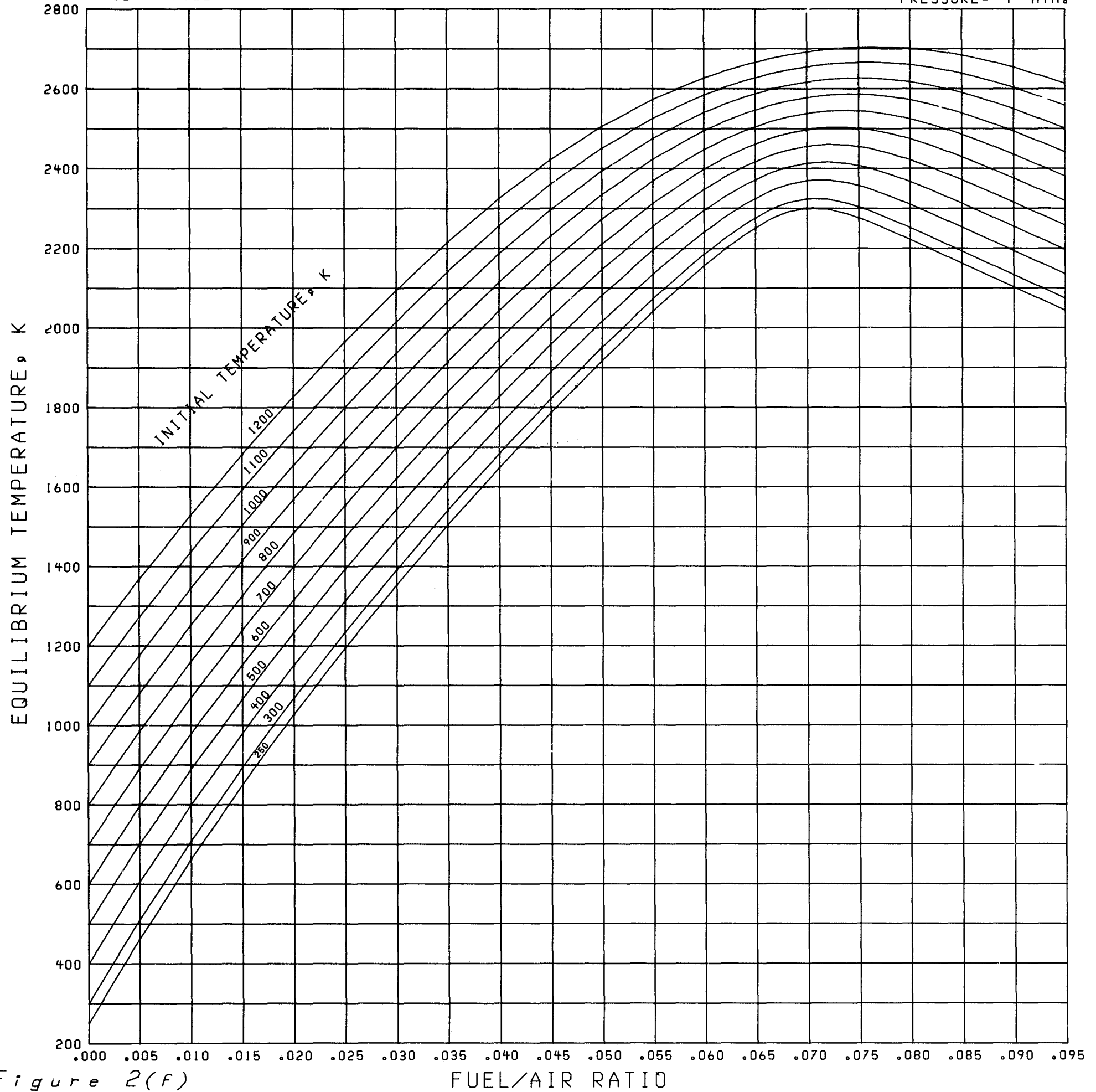


Figure 2(f)

FUEL/AIR RATIO

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE=50 ATM.

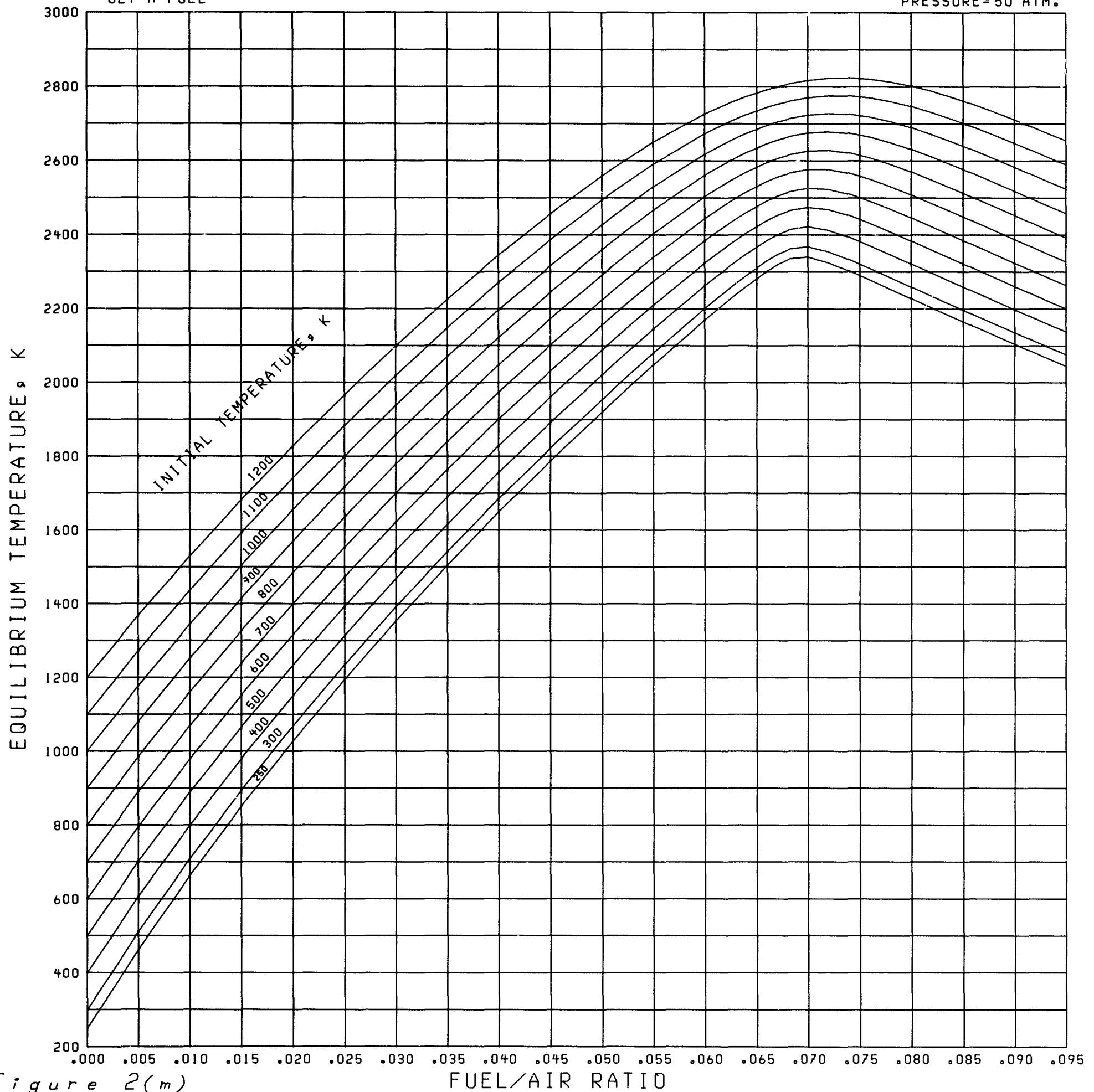


Figure 2(m)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

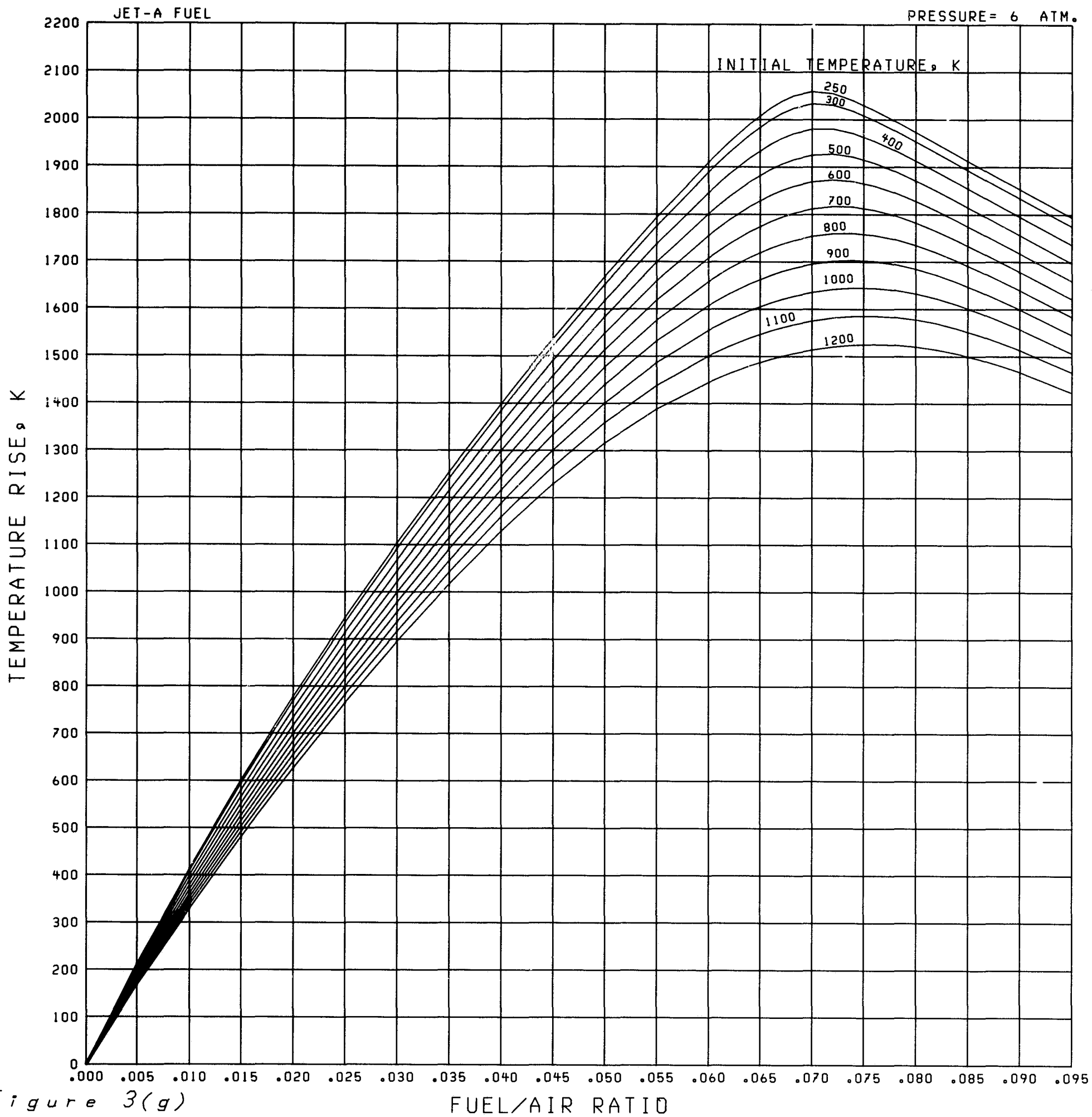


Figure 3(g)

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 0.5 ATM.

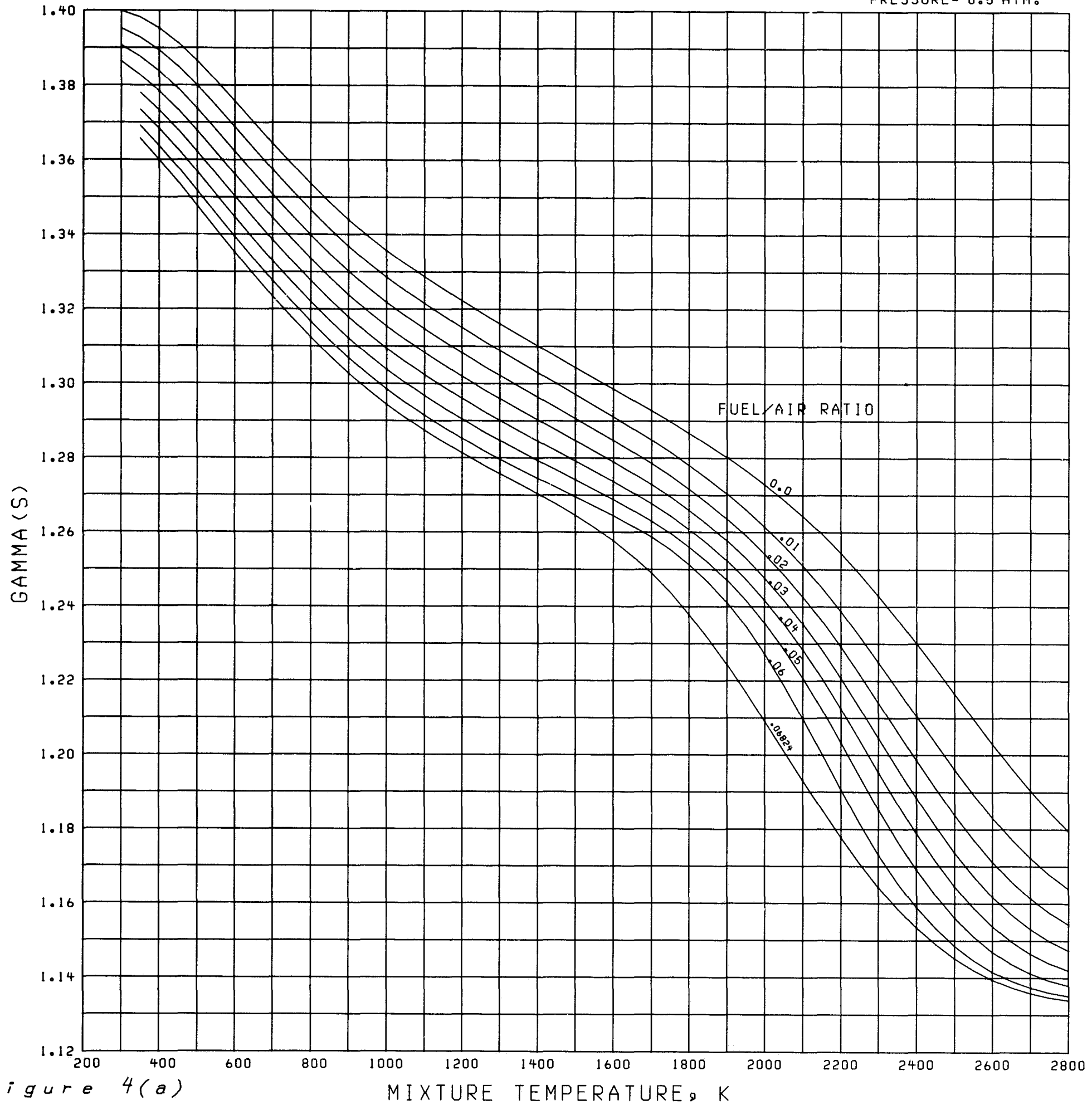


Figure 4(a)

MIXTURE TEMPERATURE, K

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 10 ATM.

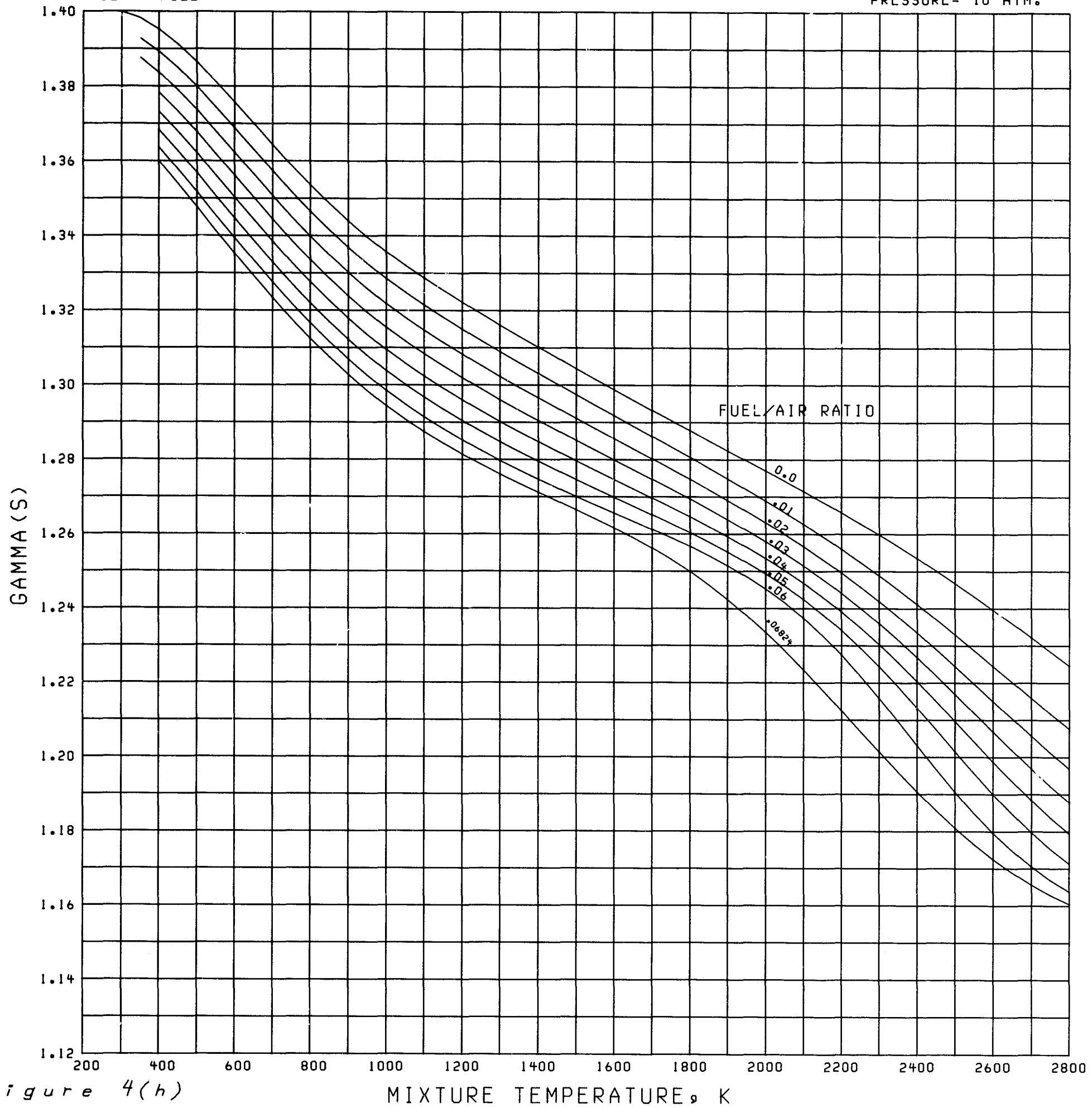


Figure 4(h)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 1 ATM.

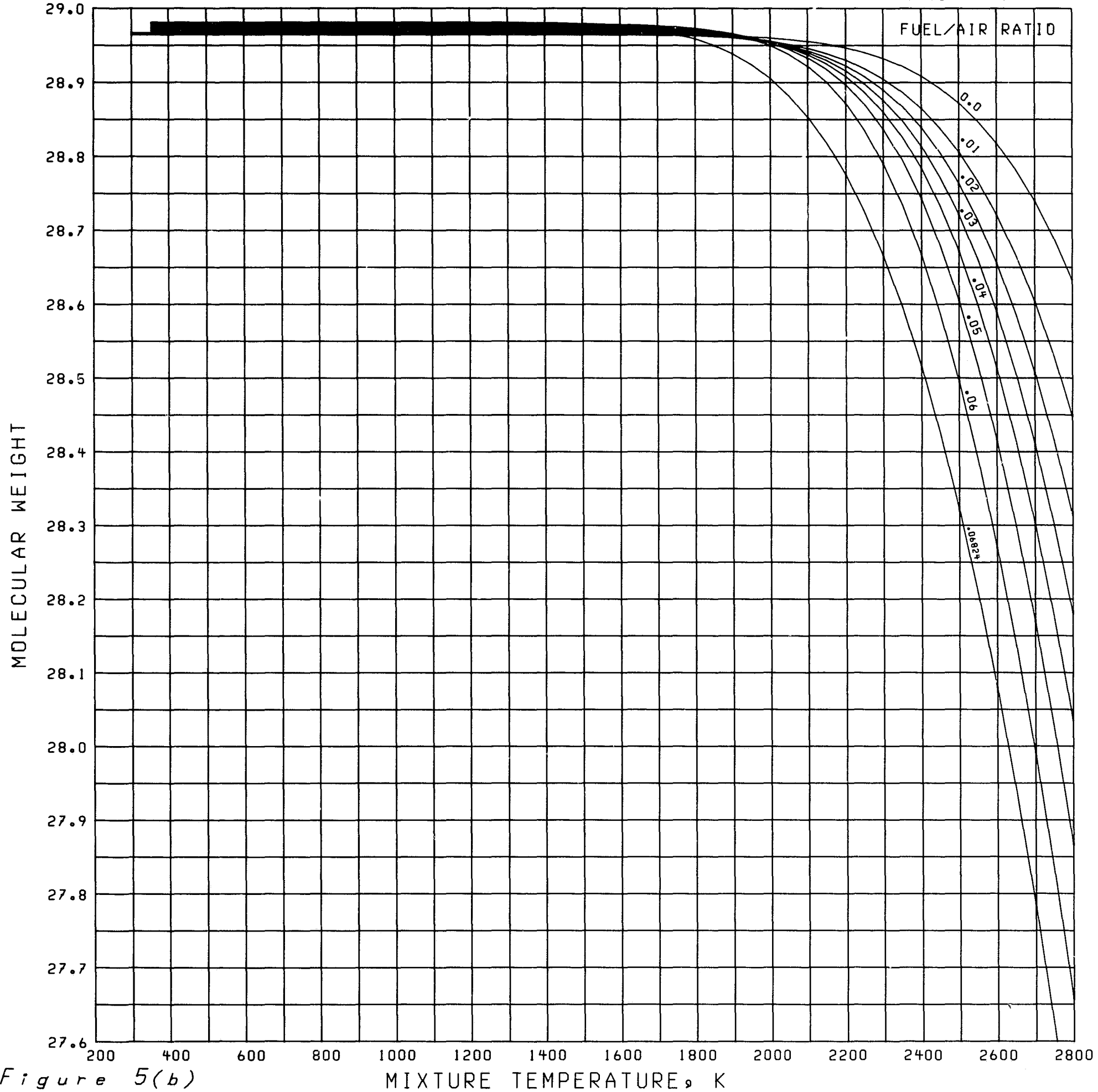


Figure 5(b)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 15 ATM.

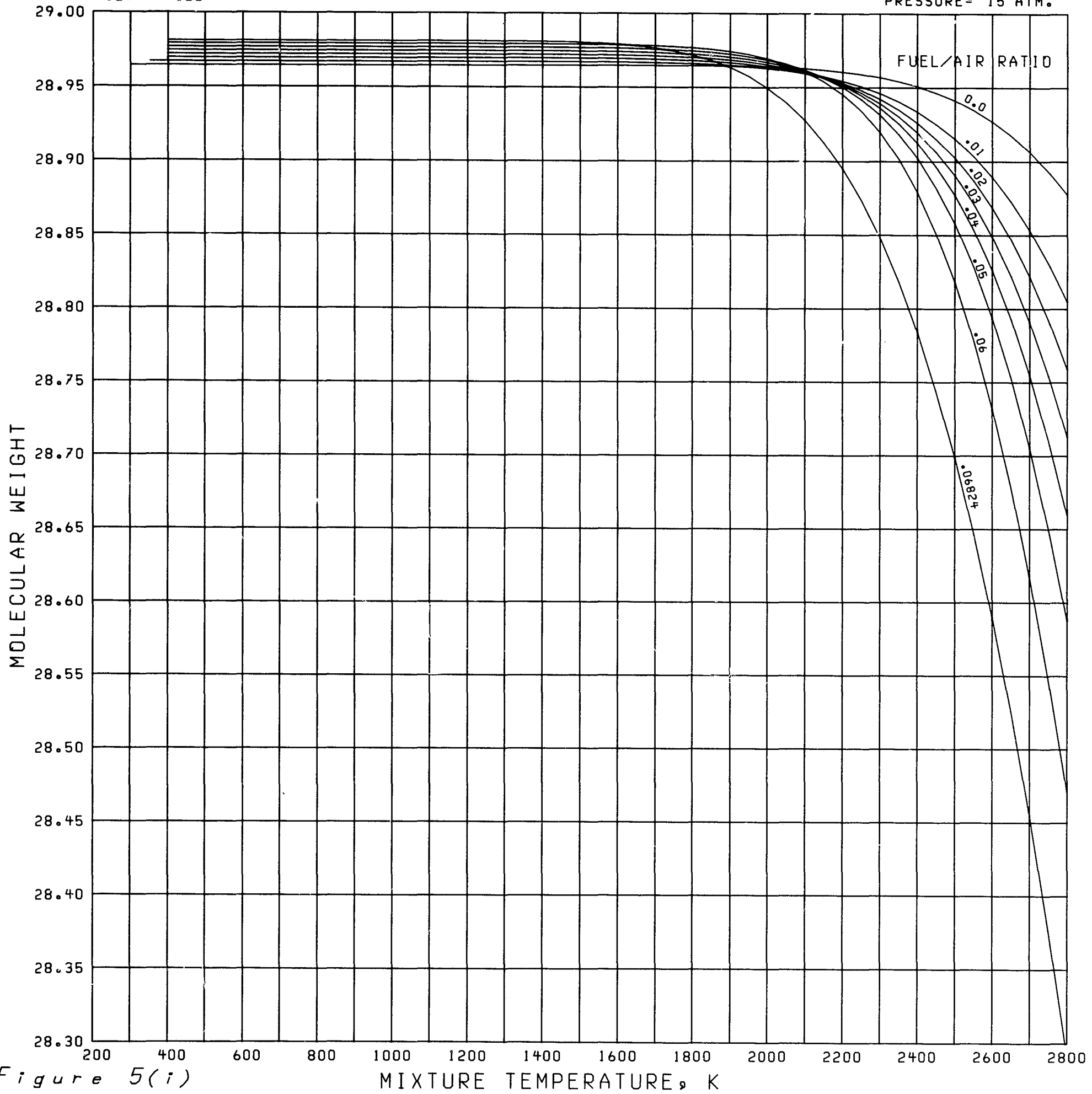


Figure 5(i)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE=1.5 ATM.

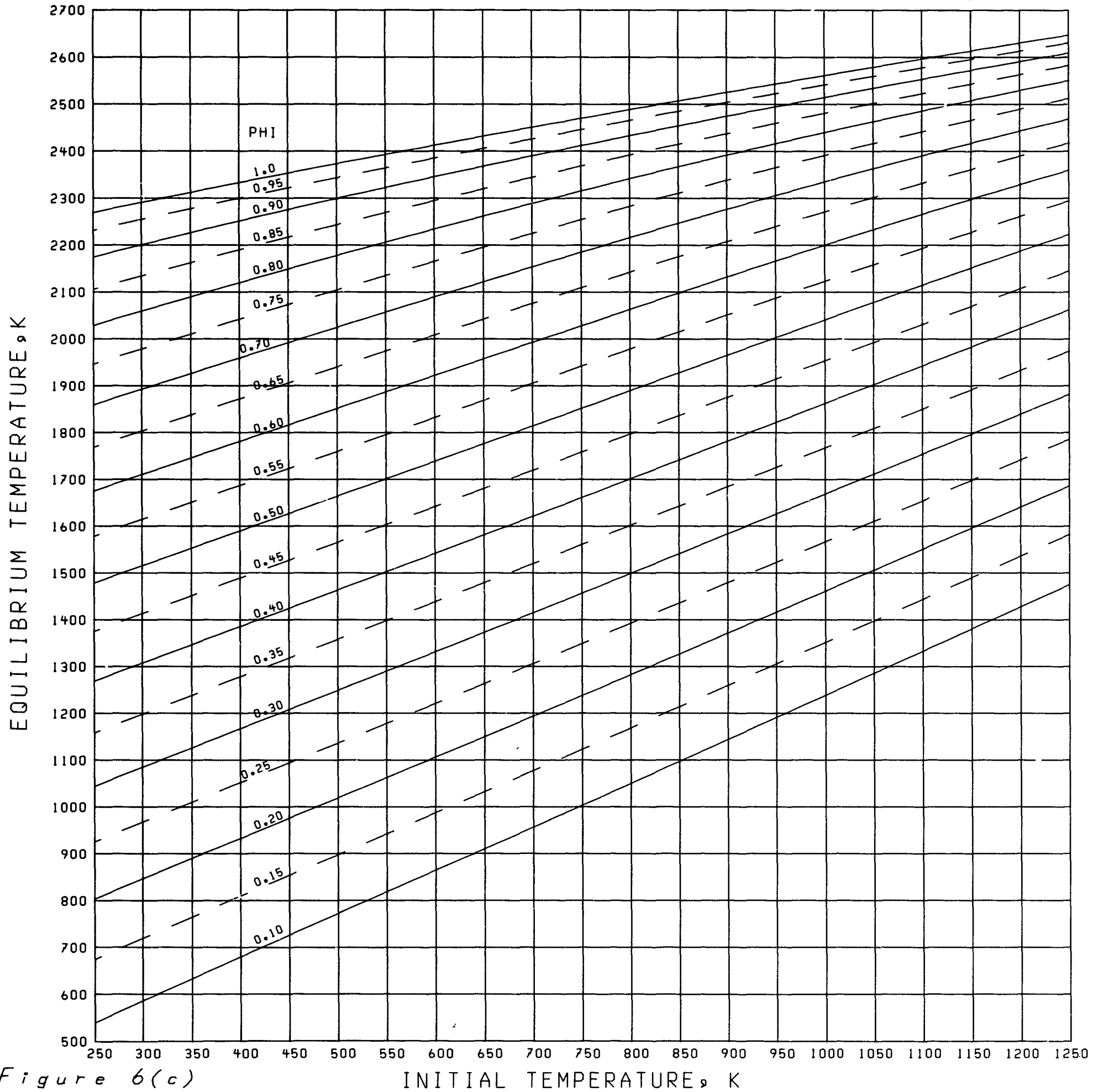


Figure 6(c)

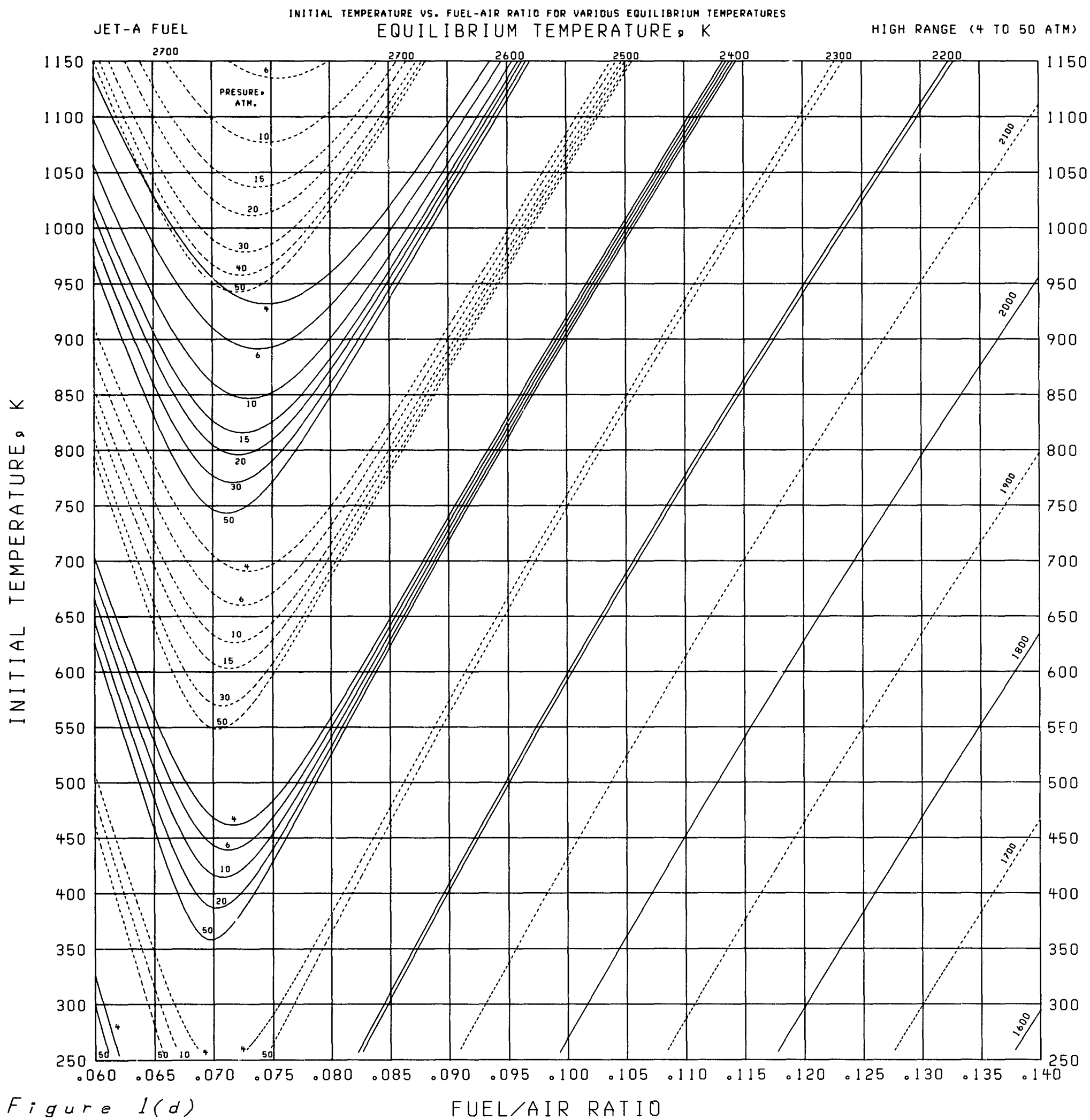


Figure 1(d)

FUEL/AIR RATIO

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE= 6 ATM.

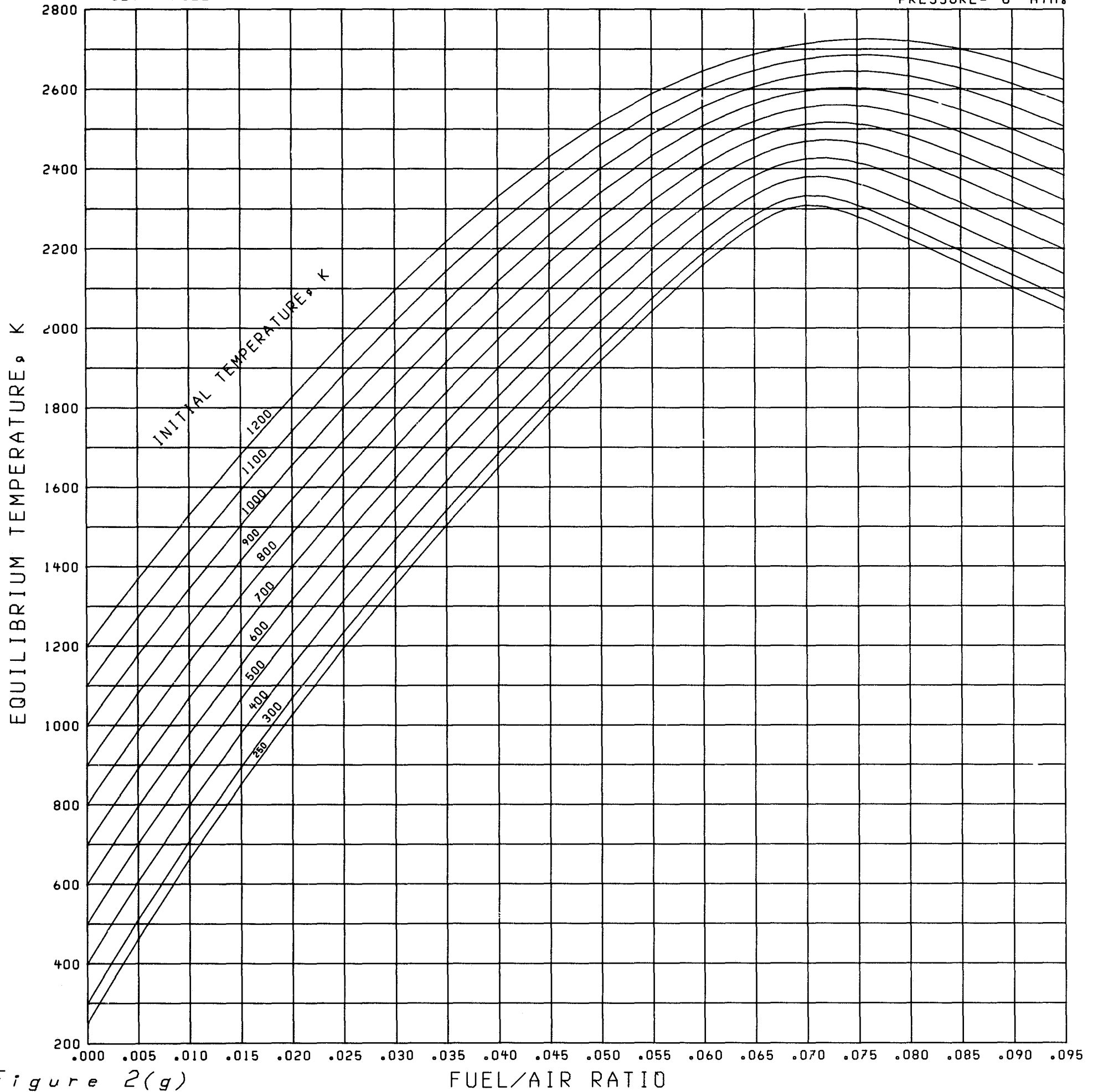


Figure 2(g)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

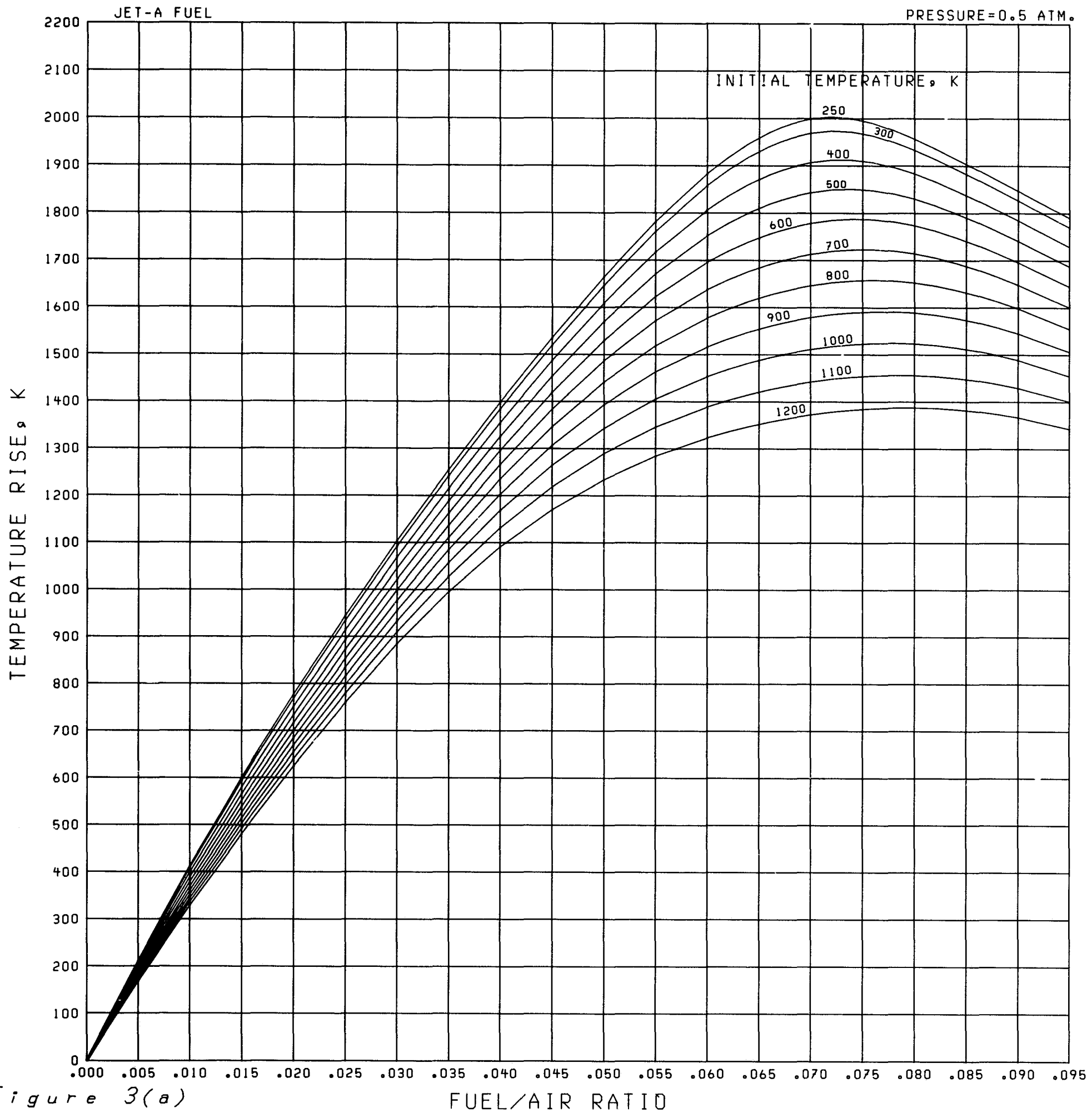
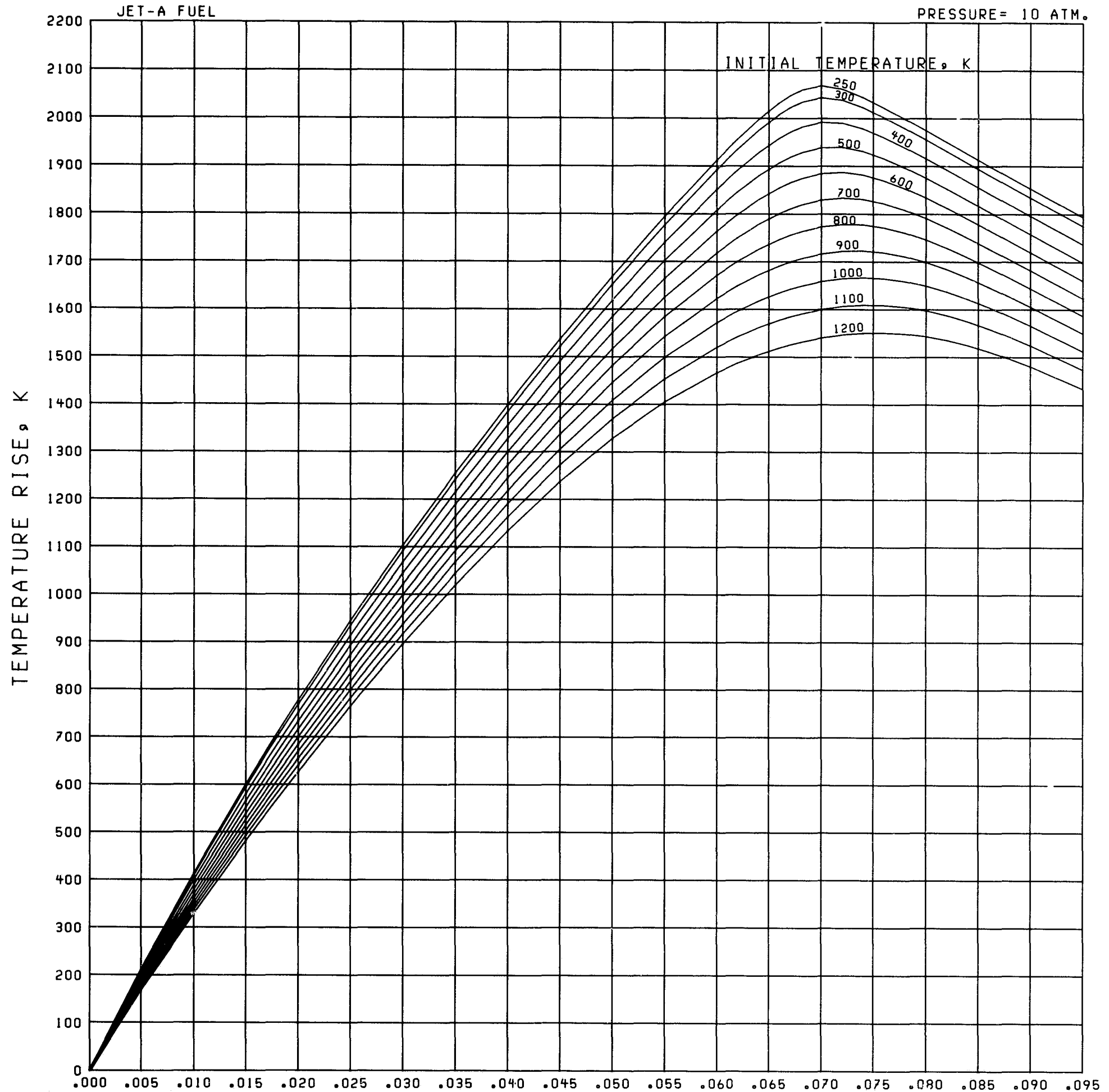


Figure 3(a)

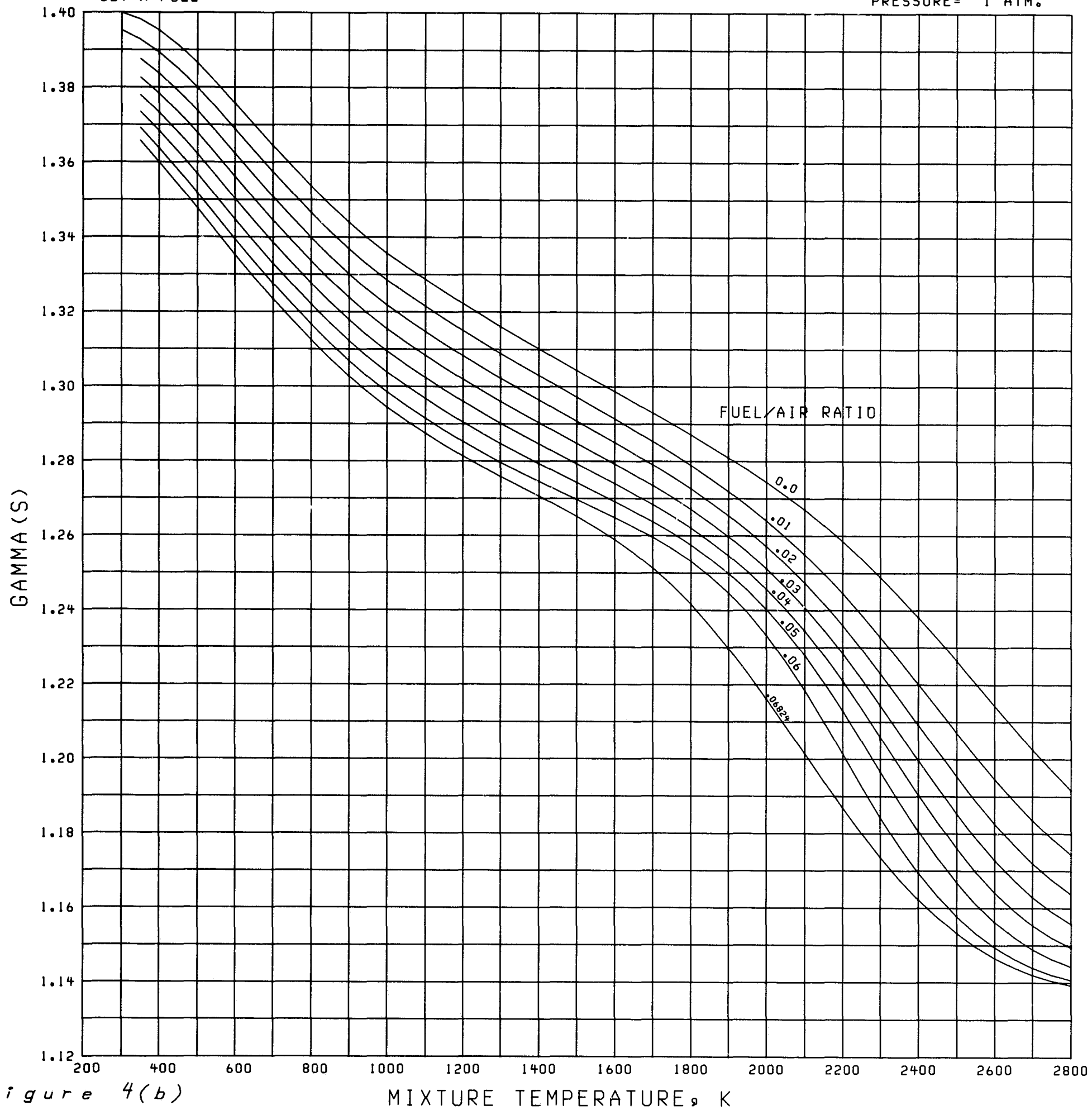
EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE



ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 1 ATM.



ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 15 ATM.

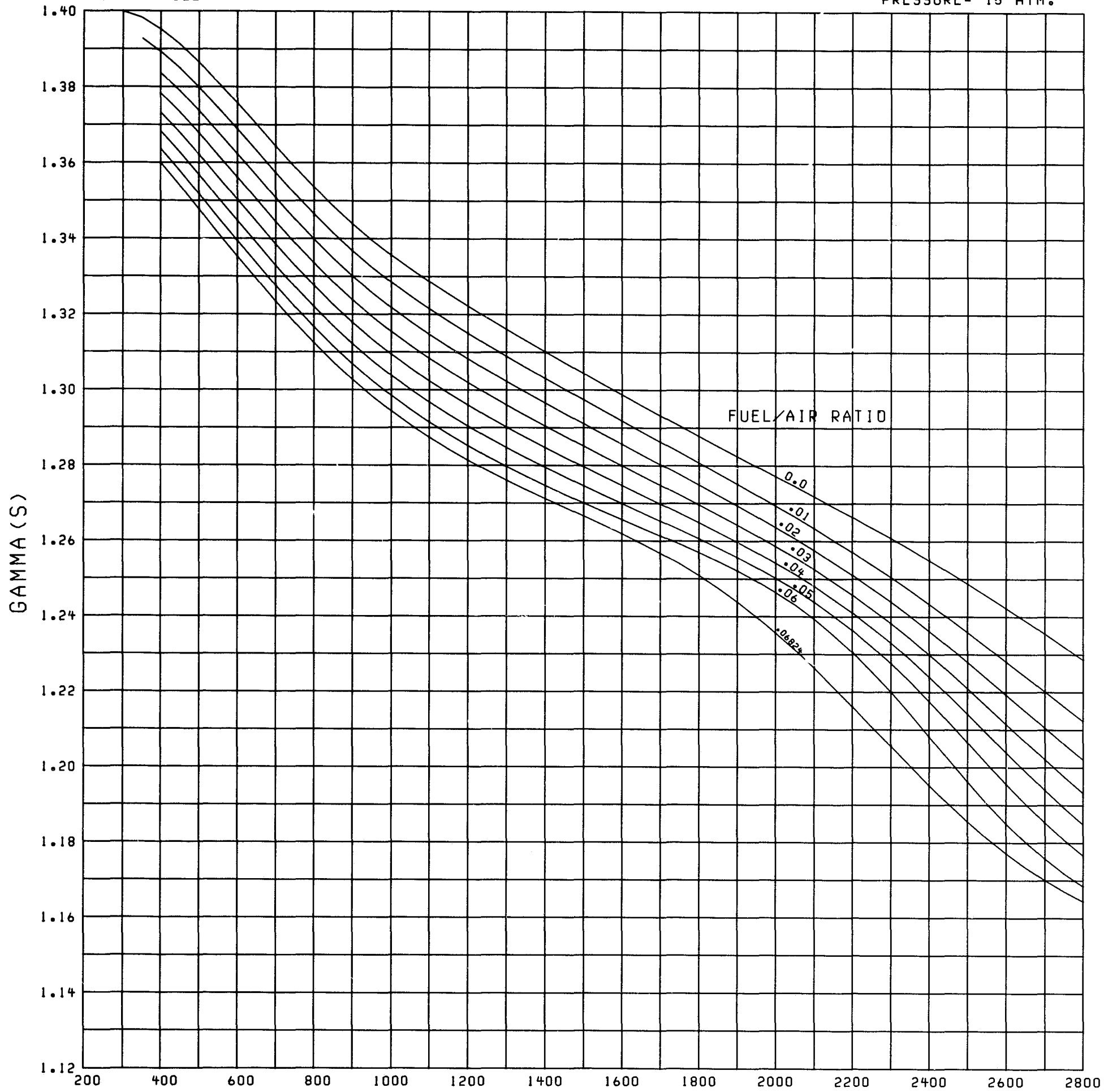


Figure 5(b)

MIXTURE TEMPERATURE, K

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE=1.5 ATM.

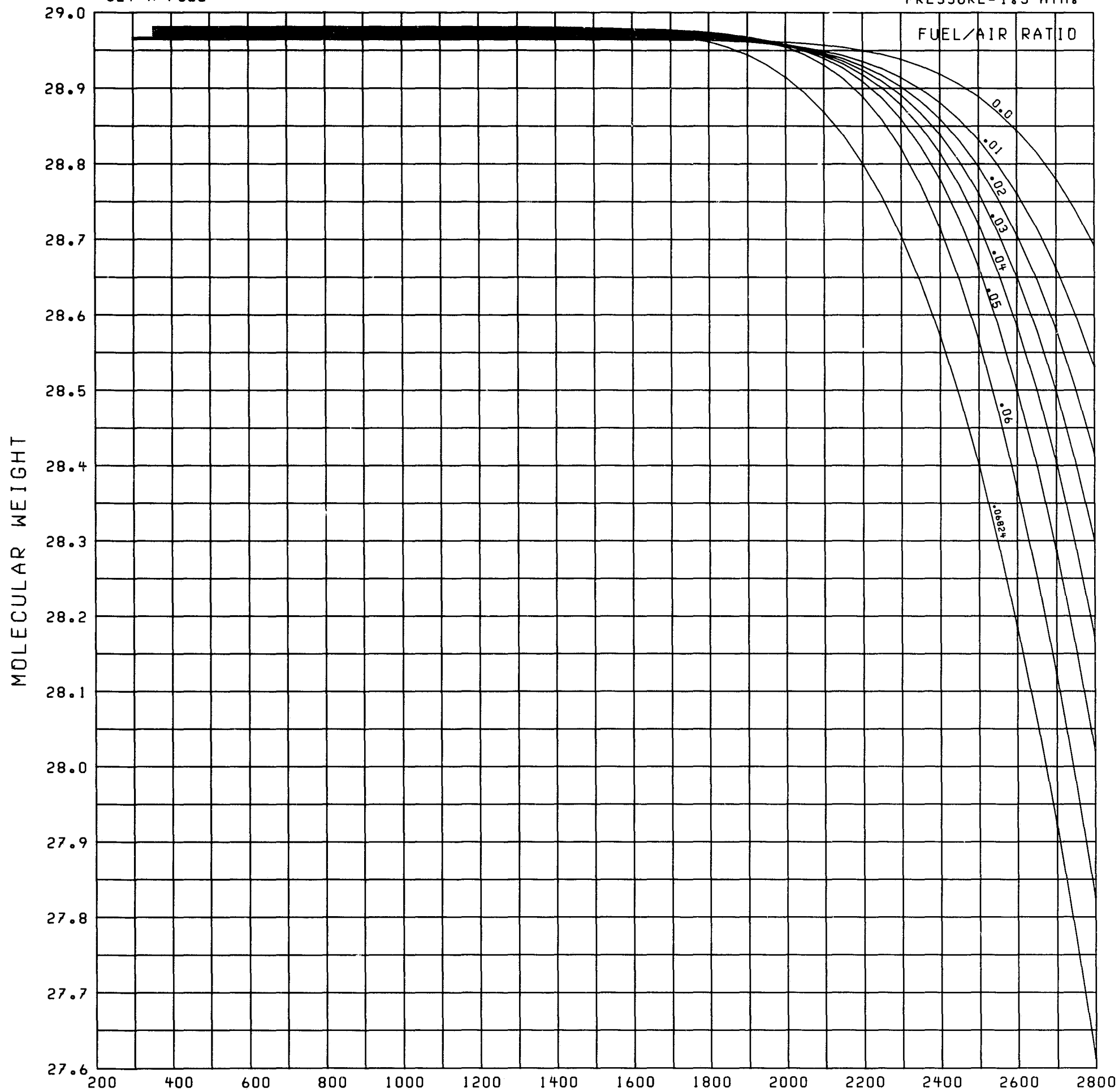


Figure 5(c)

MIXTURE TEMPERATURE, K

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 20 ATM.

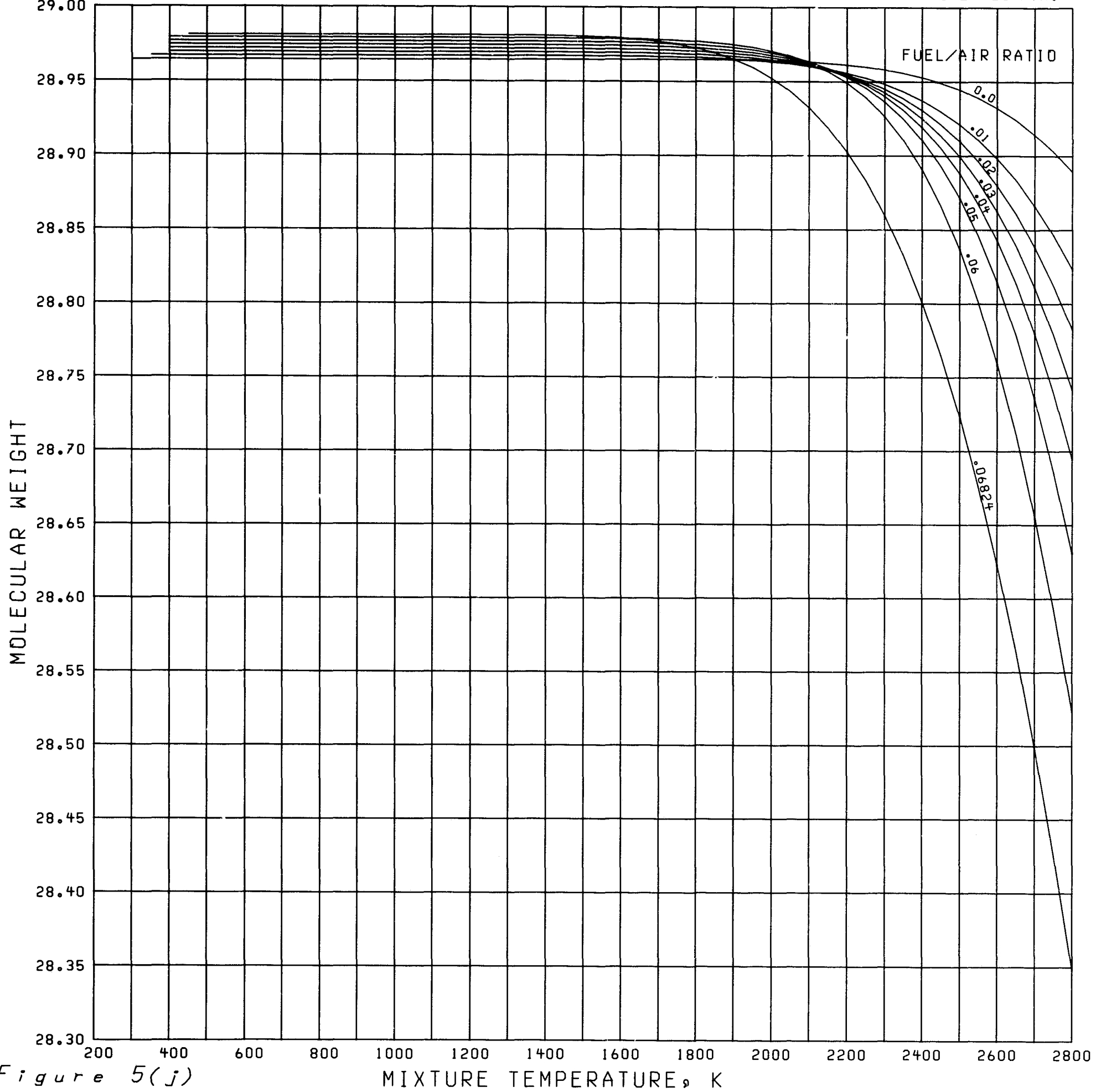


Figure 5(j)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 2 ATM.

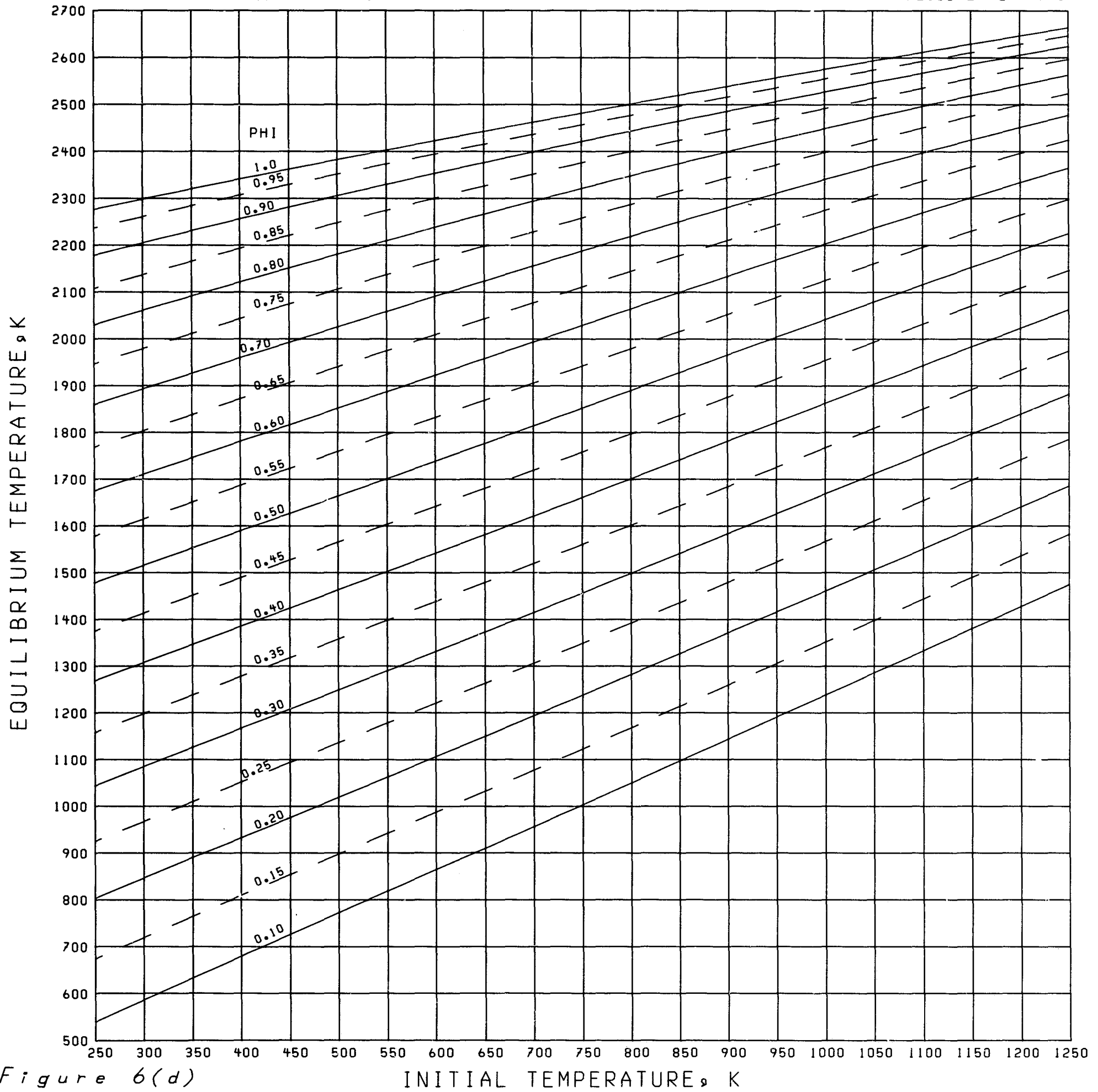


Figure 6(d)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

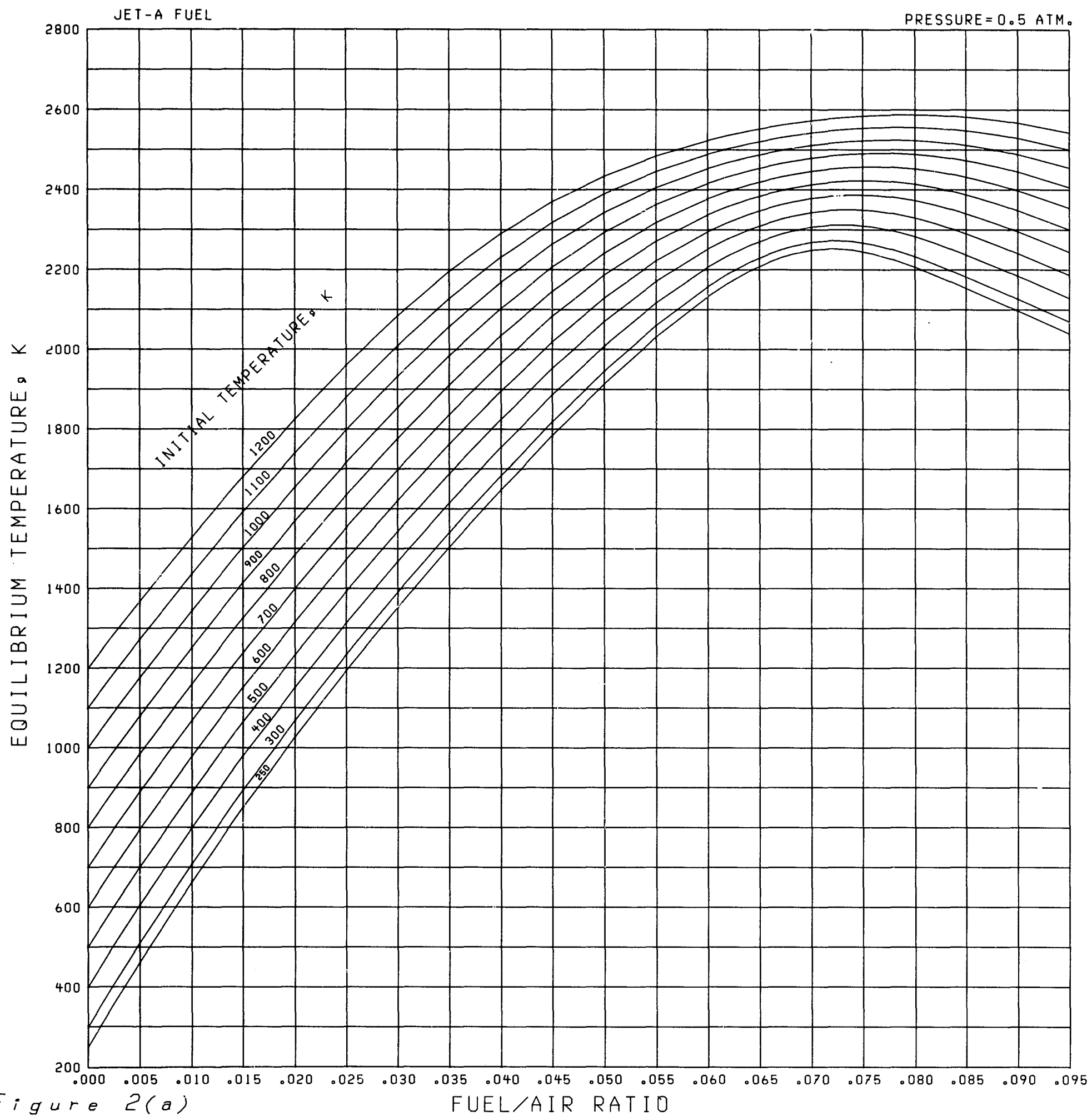


Figure 2(a)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

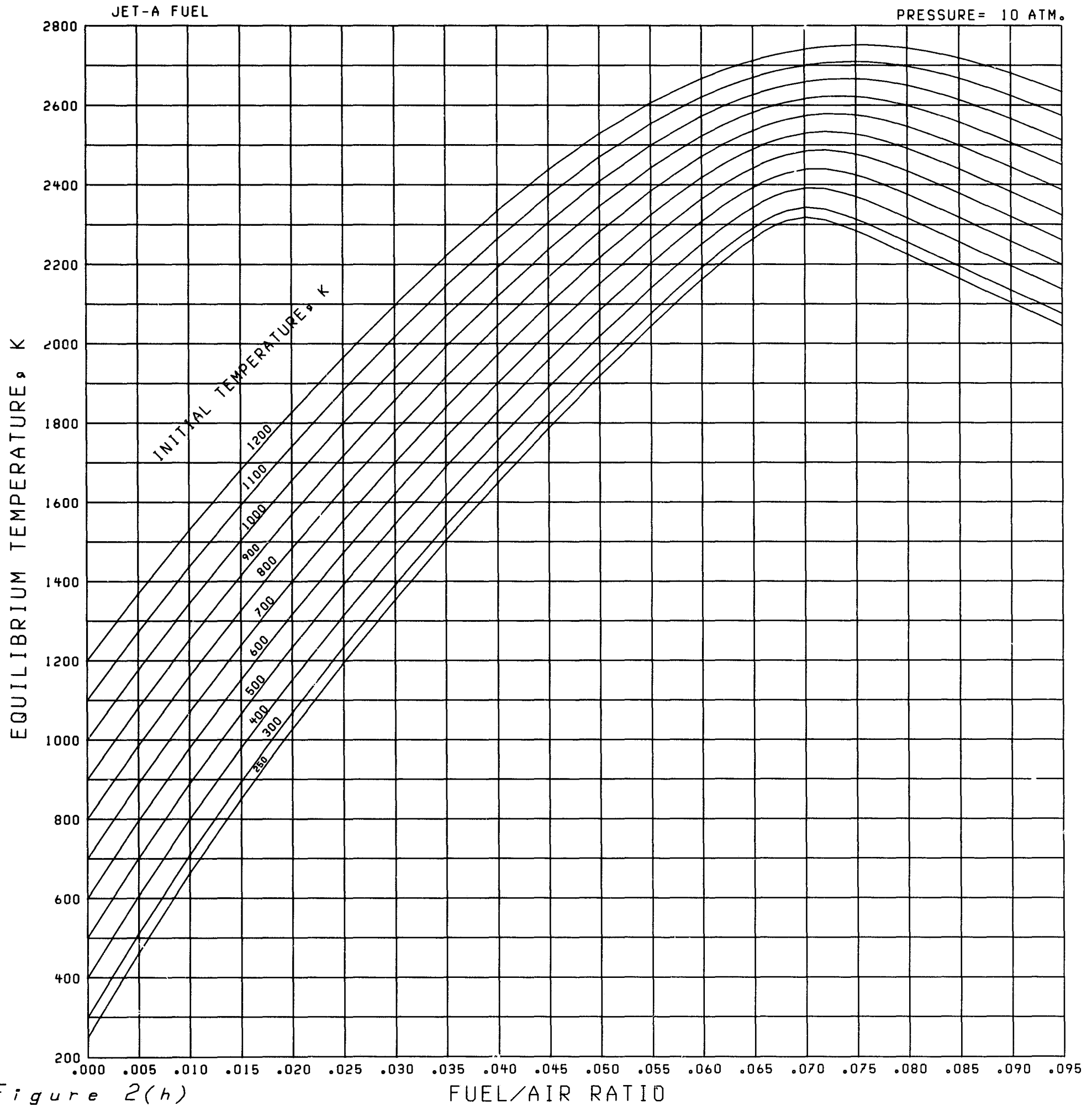


Figure 2(h)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

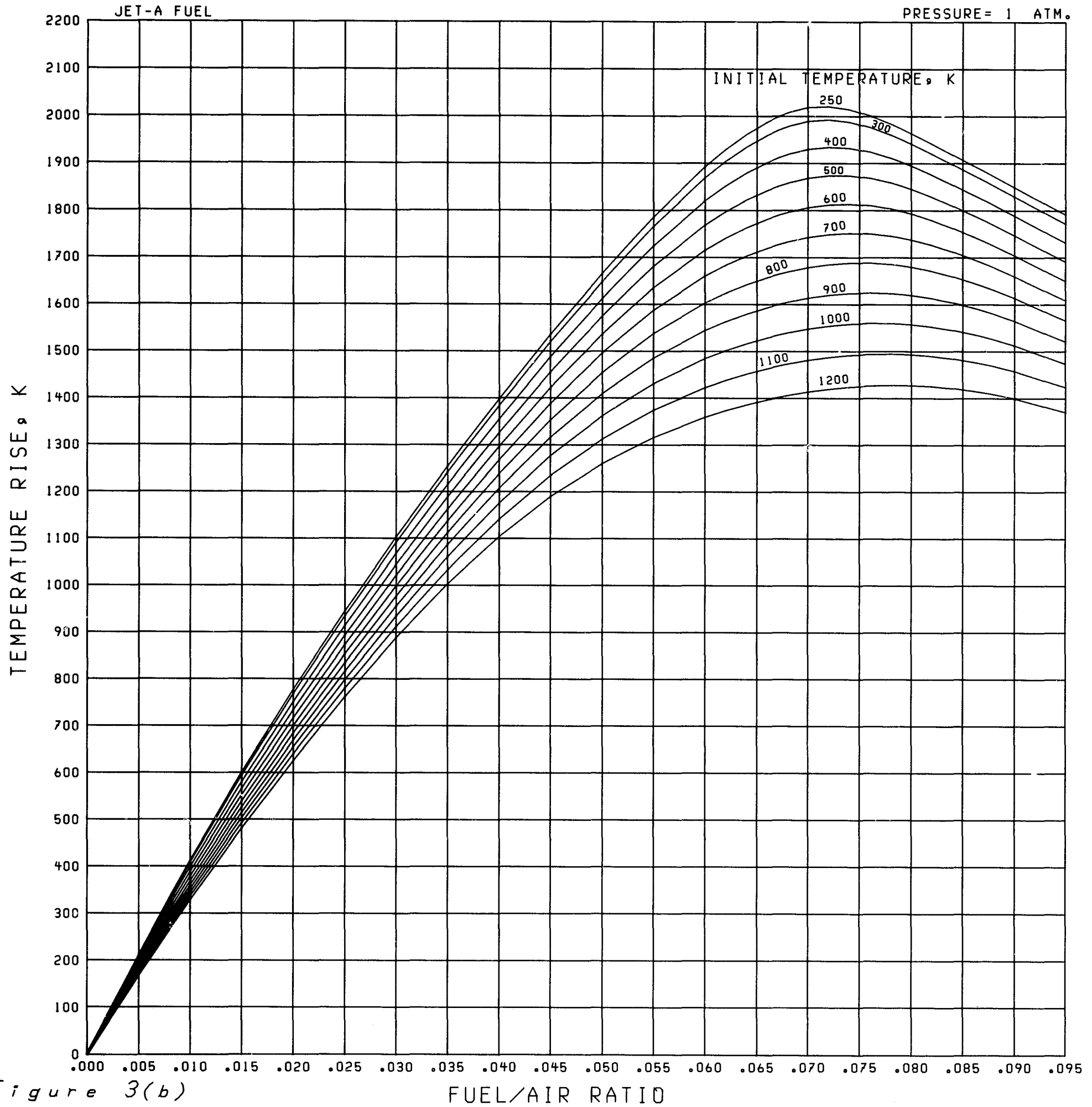
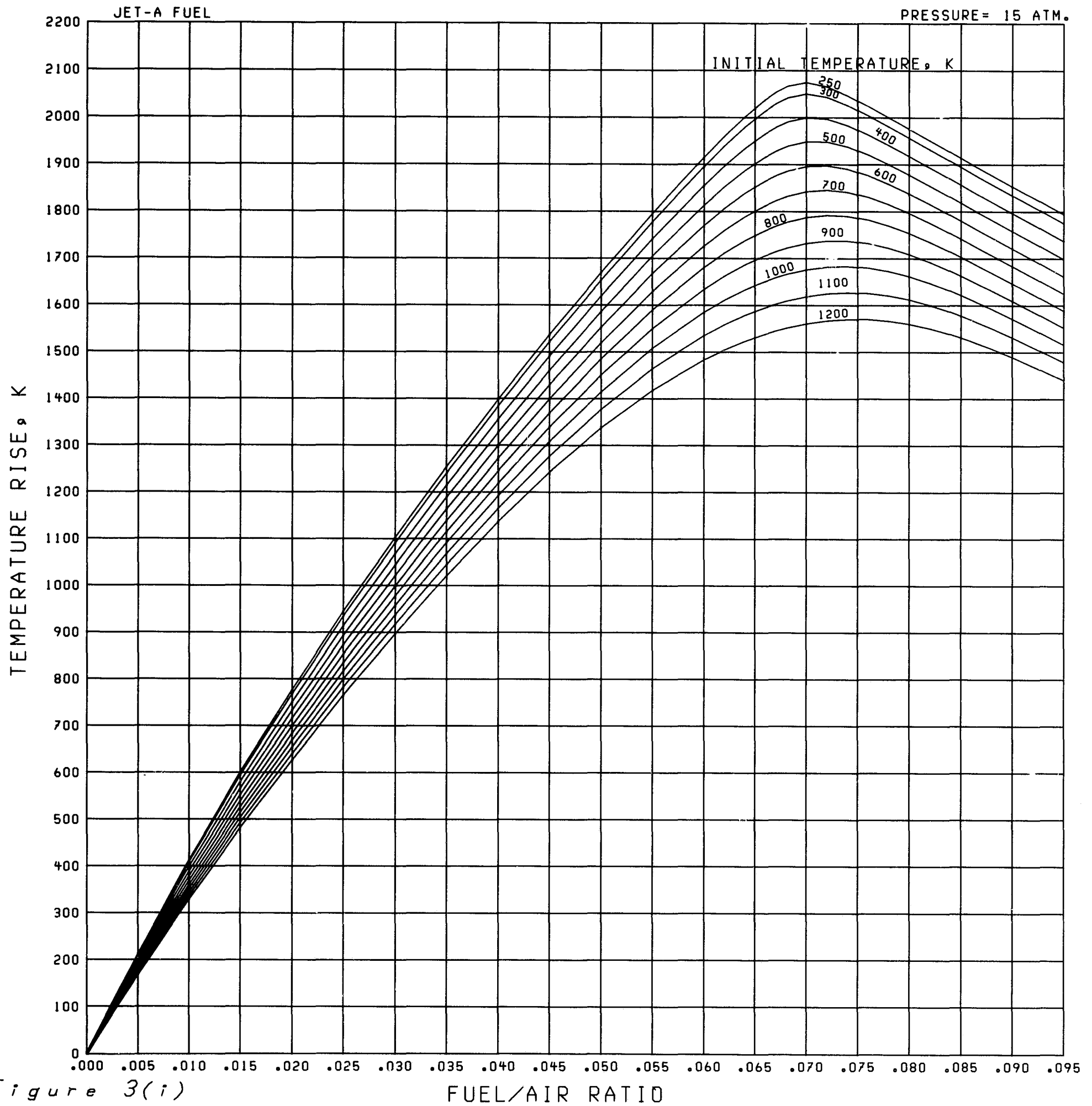


Figure 3(b)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE



ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

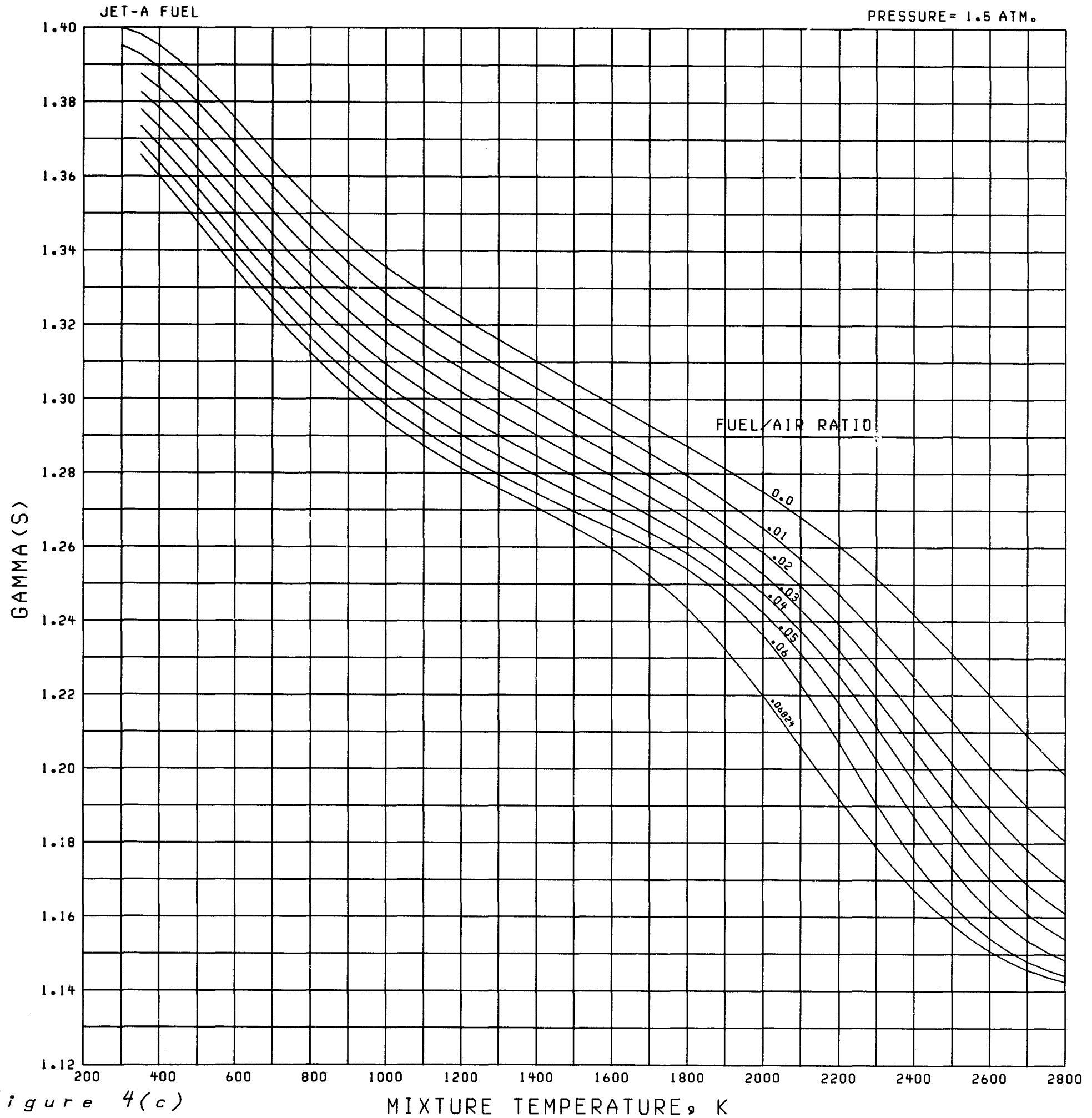


Figure 4(c)

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 20 ATM.

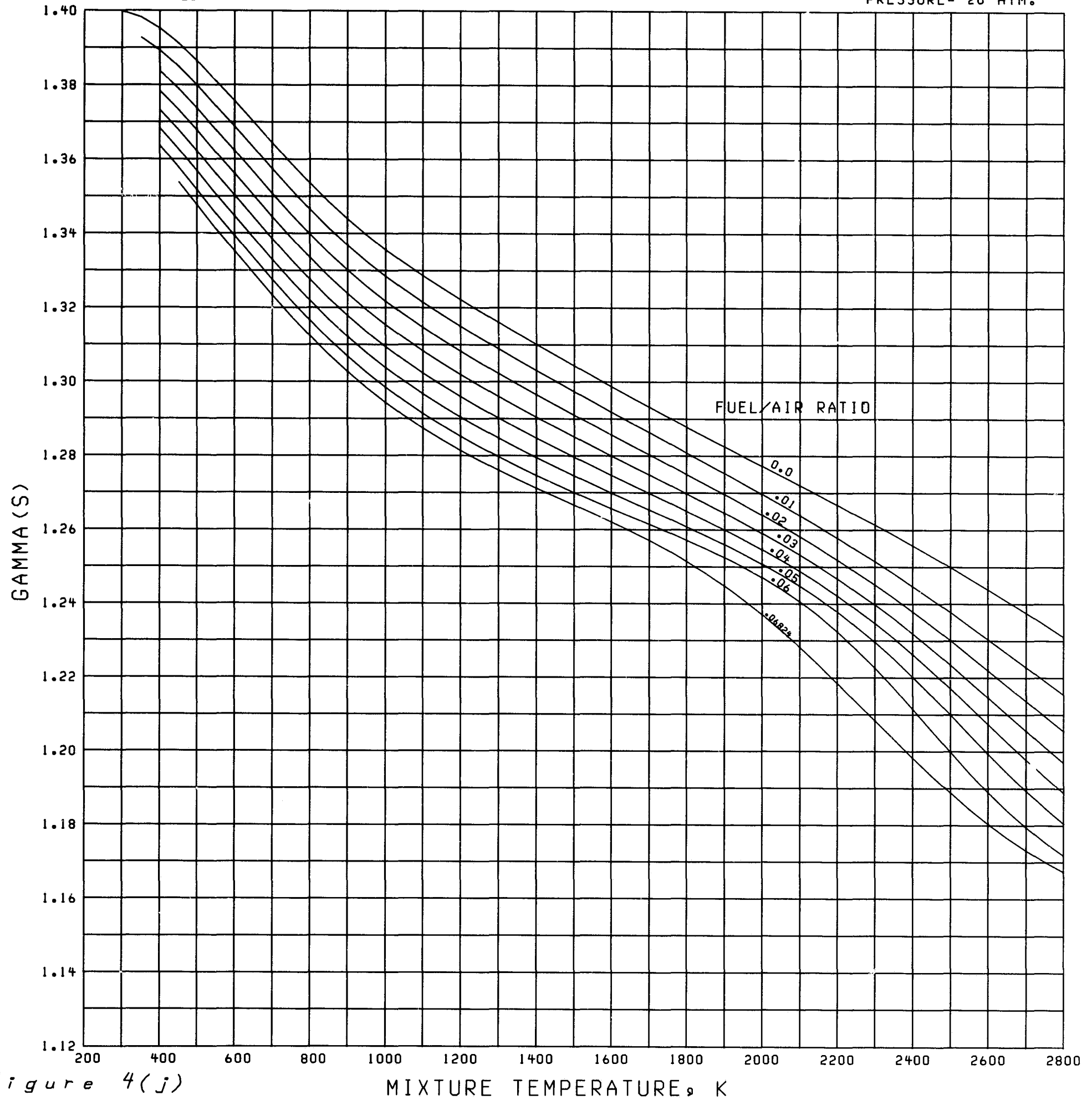


Figure 4(j)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 2 ATM.

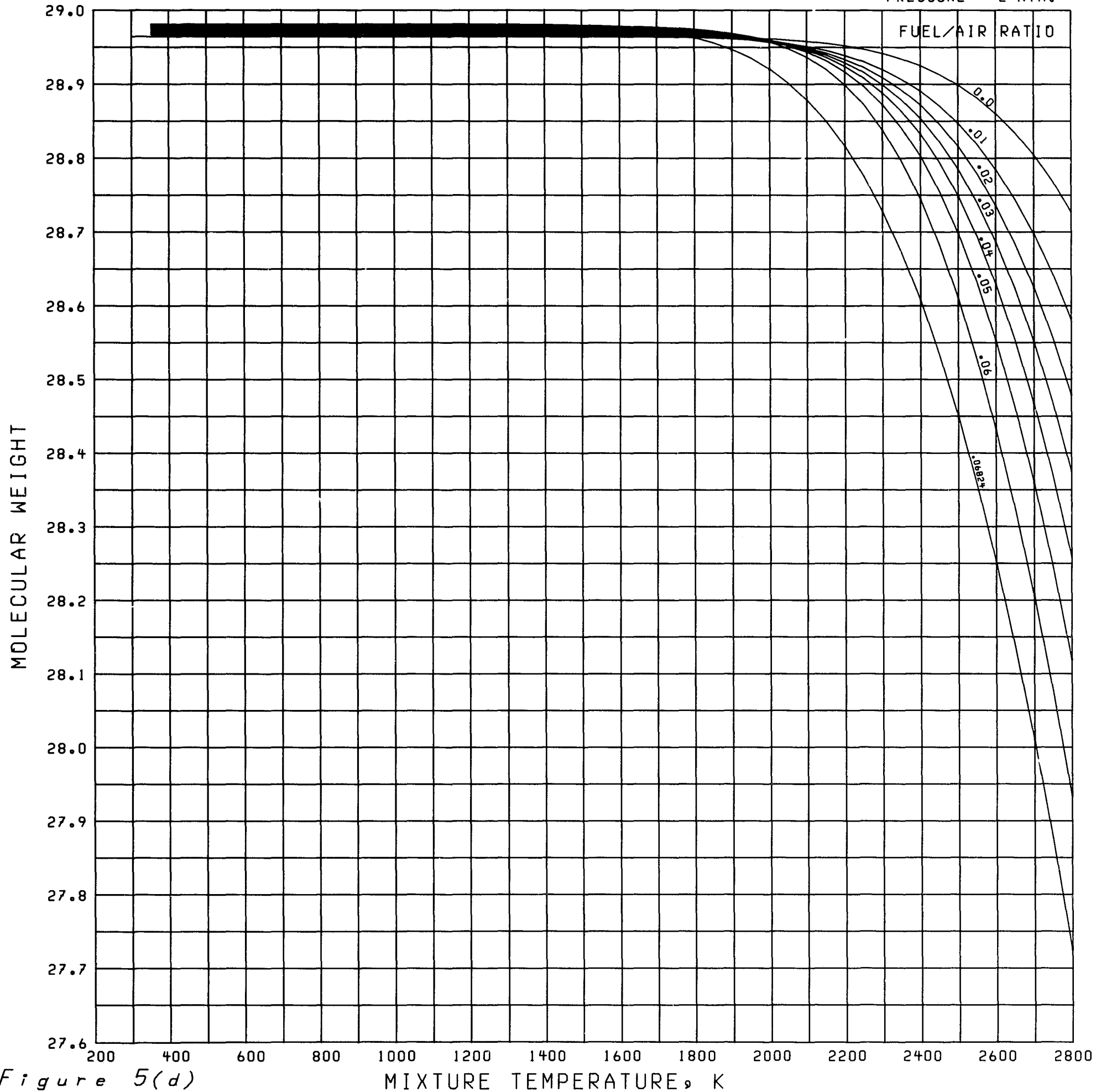


Figure 5(d)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 30 ATM.

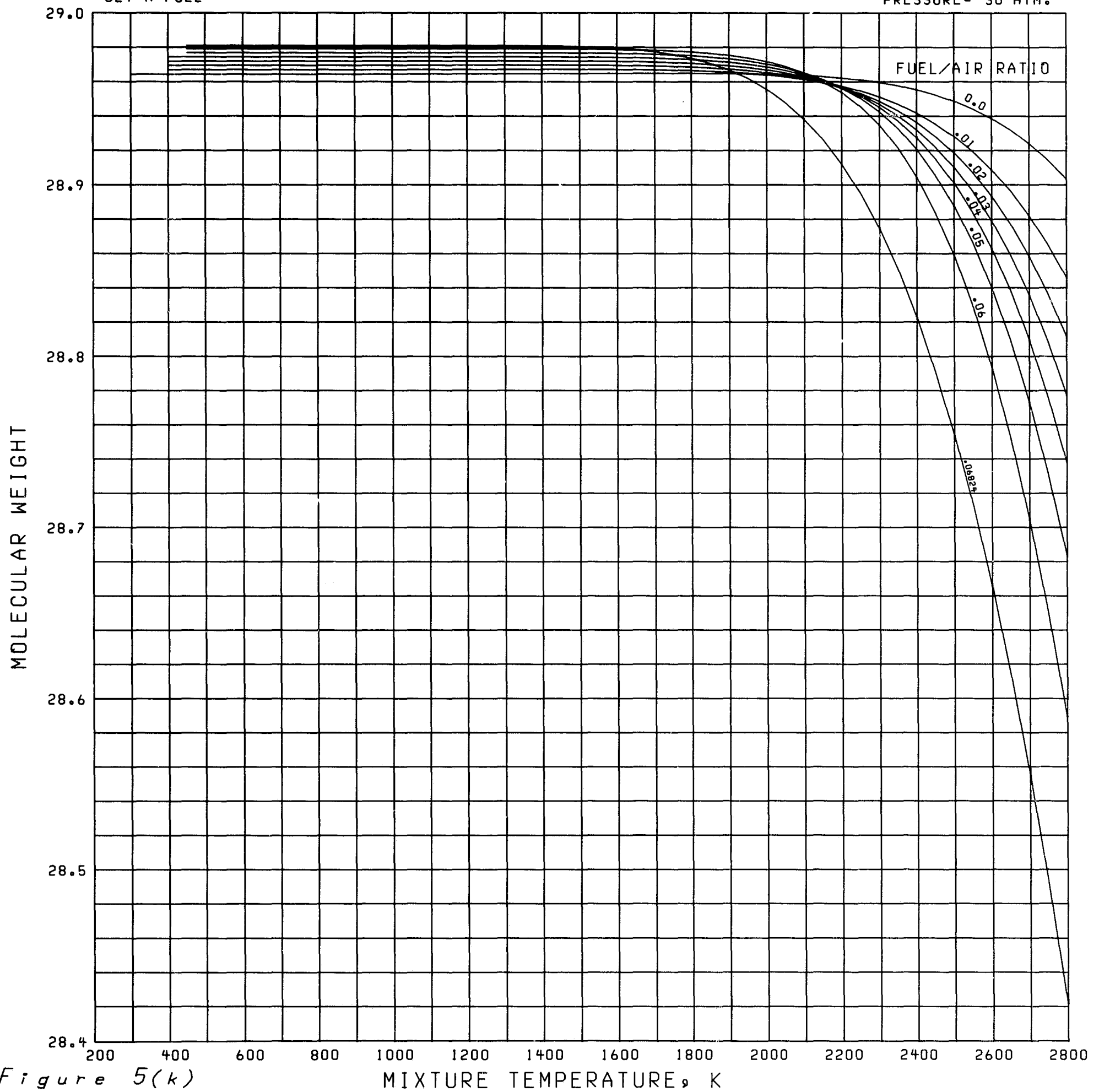


Figure 5(k)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 3 ATM.

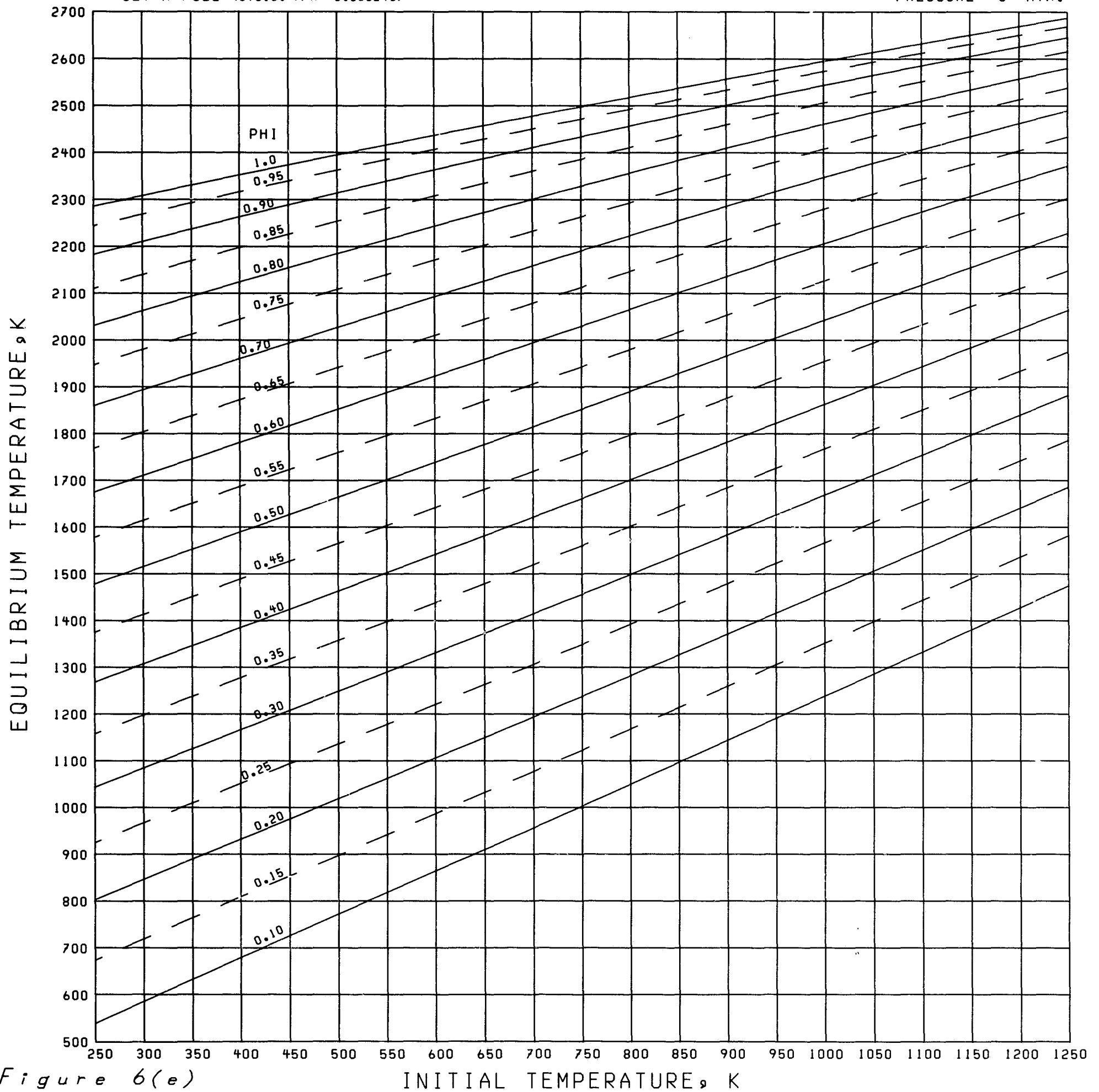


Figure 6(e)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE = 1 ATM.

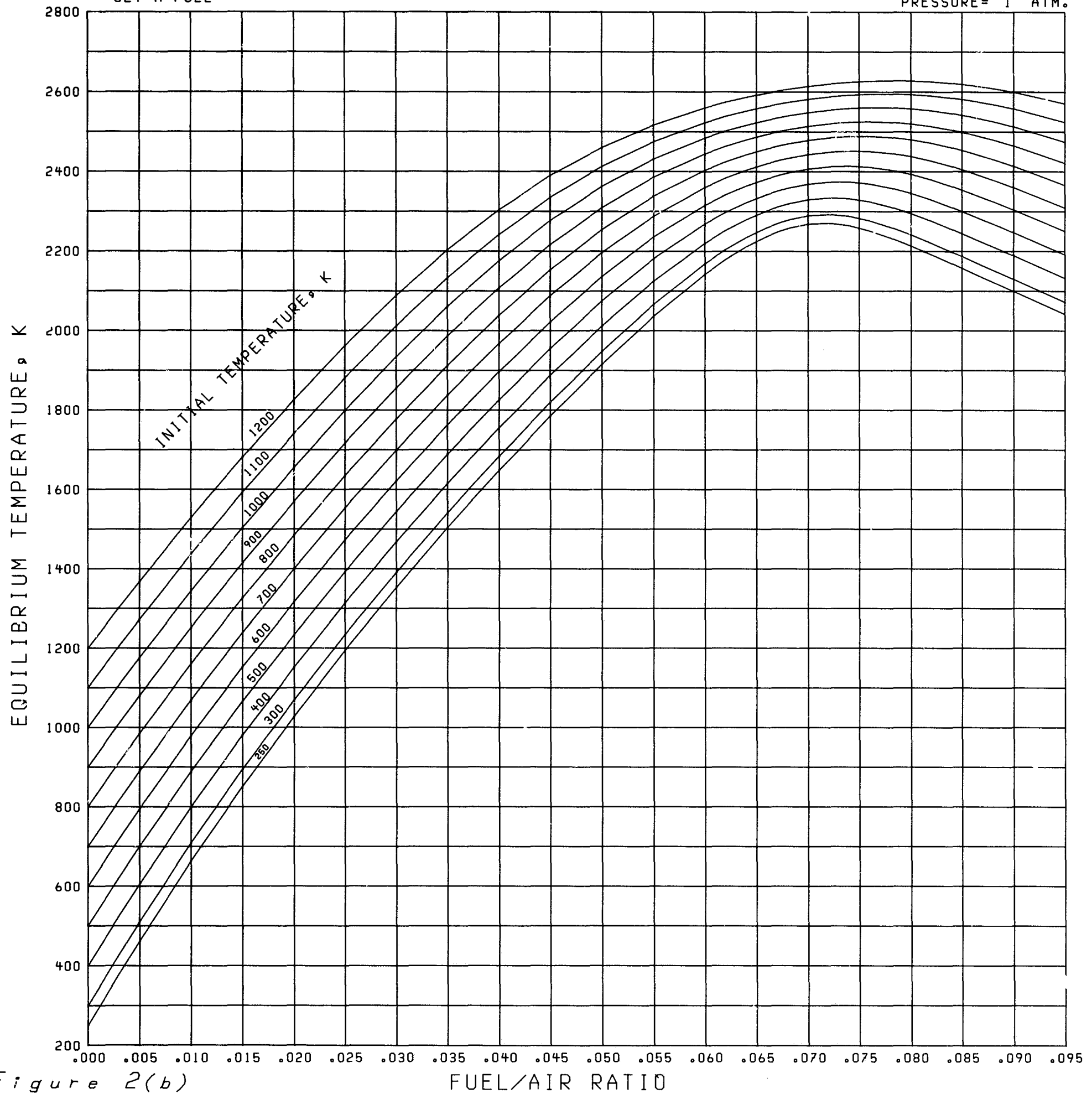


Figure 2(b)

FUEL/AIR RATIO

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE= 15 ATM.

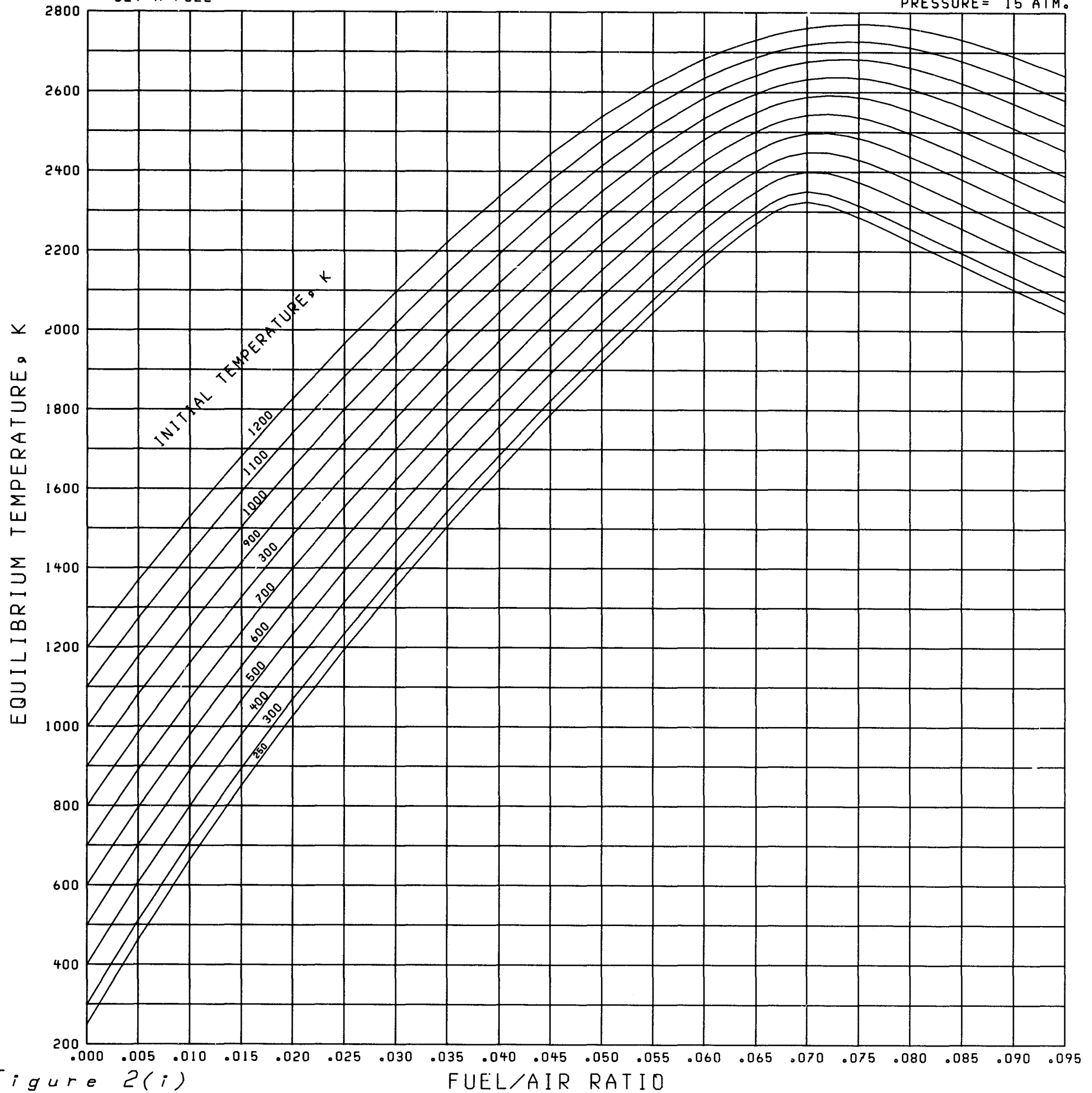


Figure 2(i)

FUEL/AIR RATIO

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

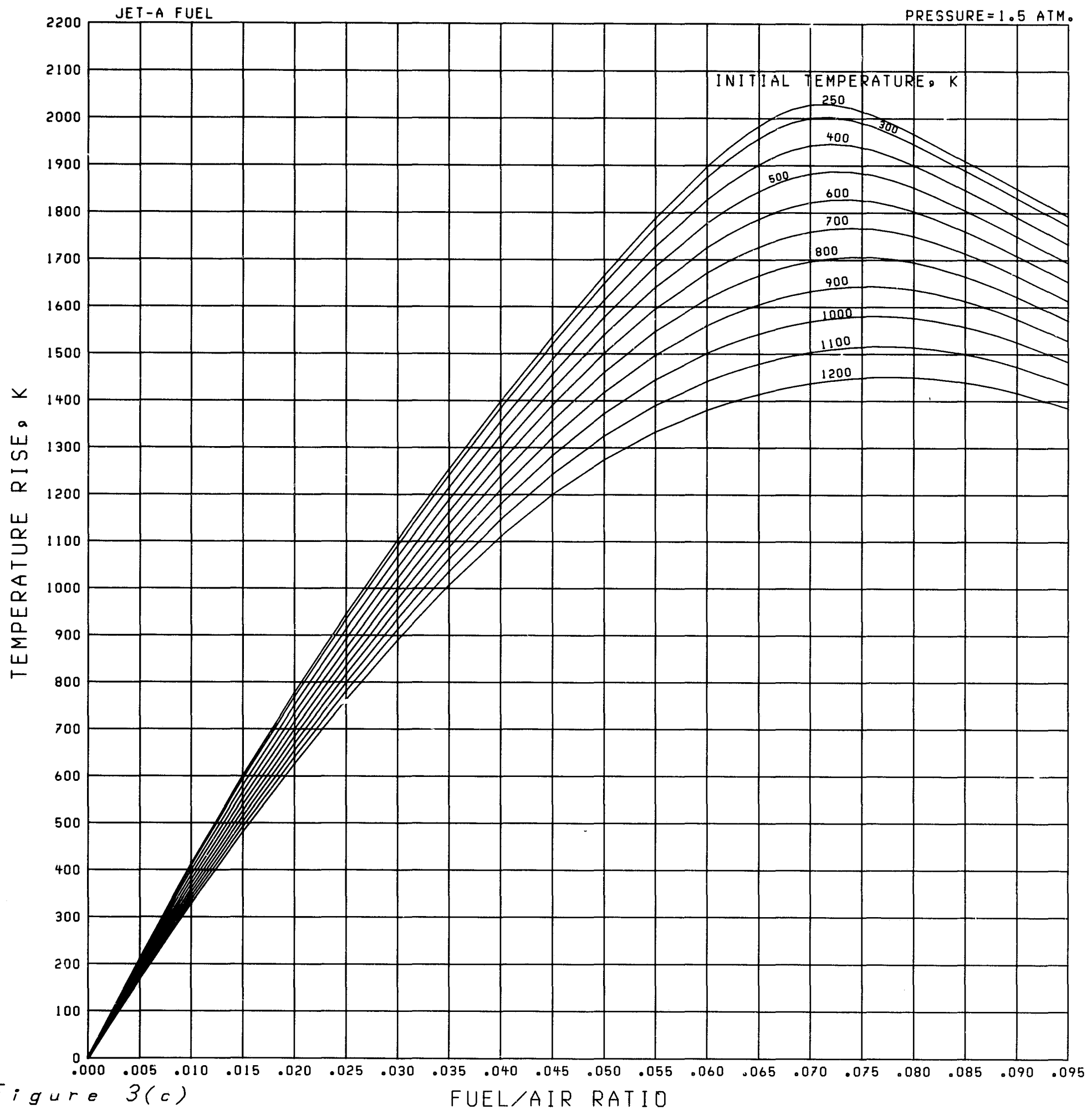


Figure 3(c)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

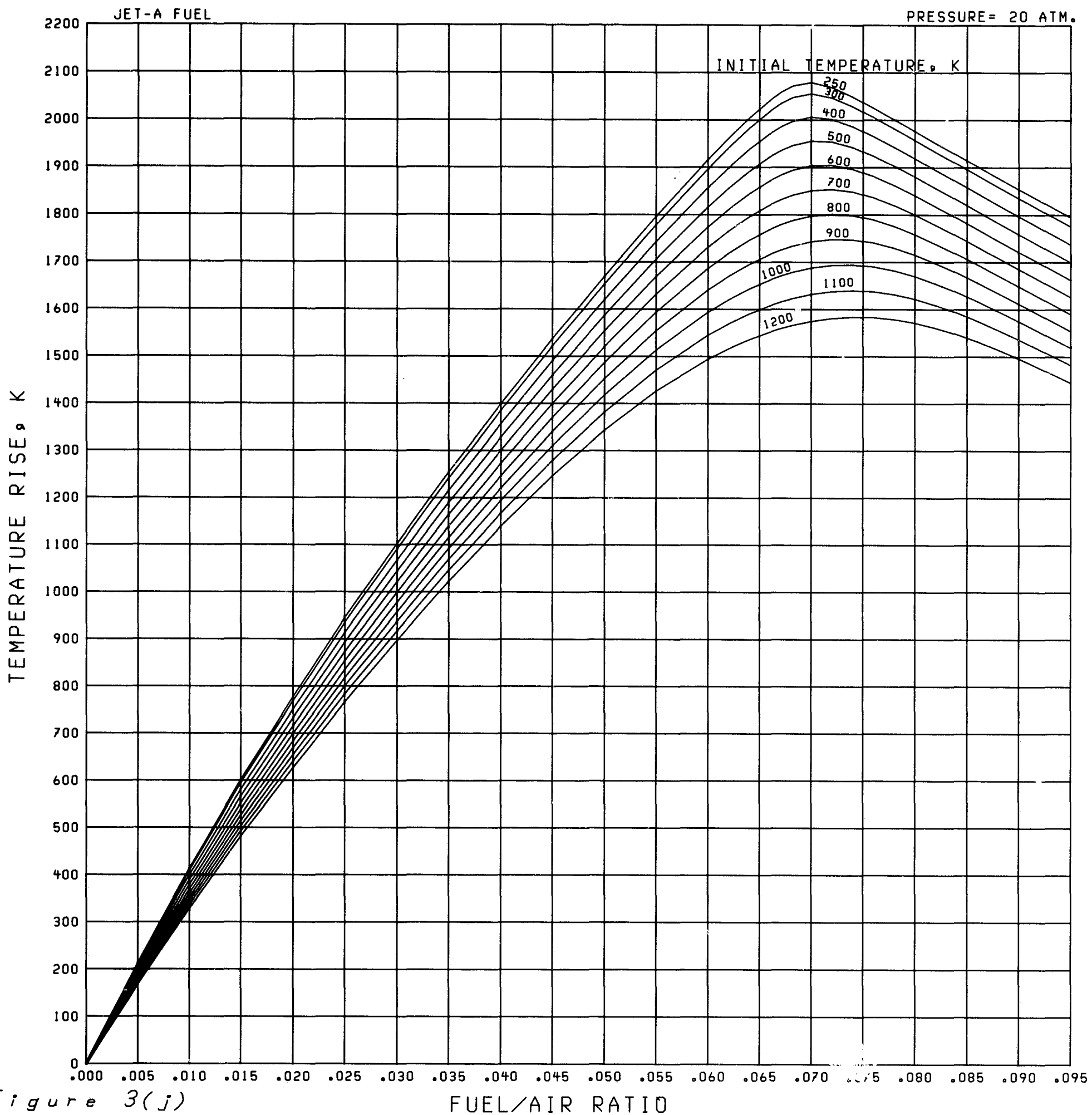


Figure 3(j)

FUEL/AIR RATIO

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

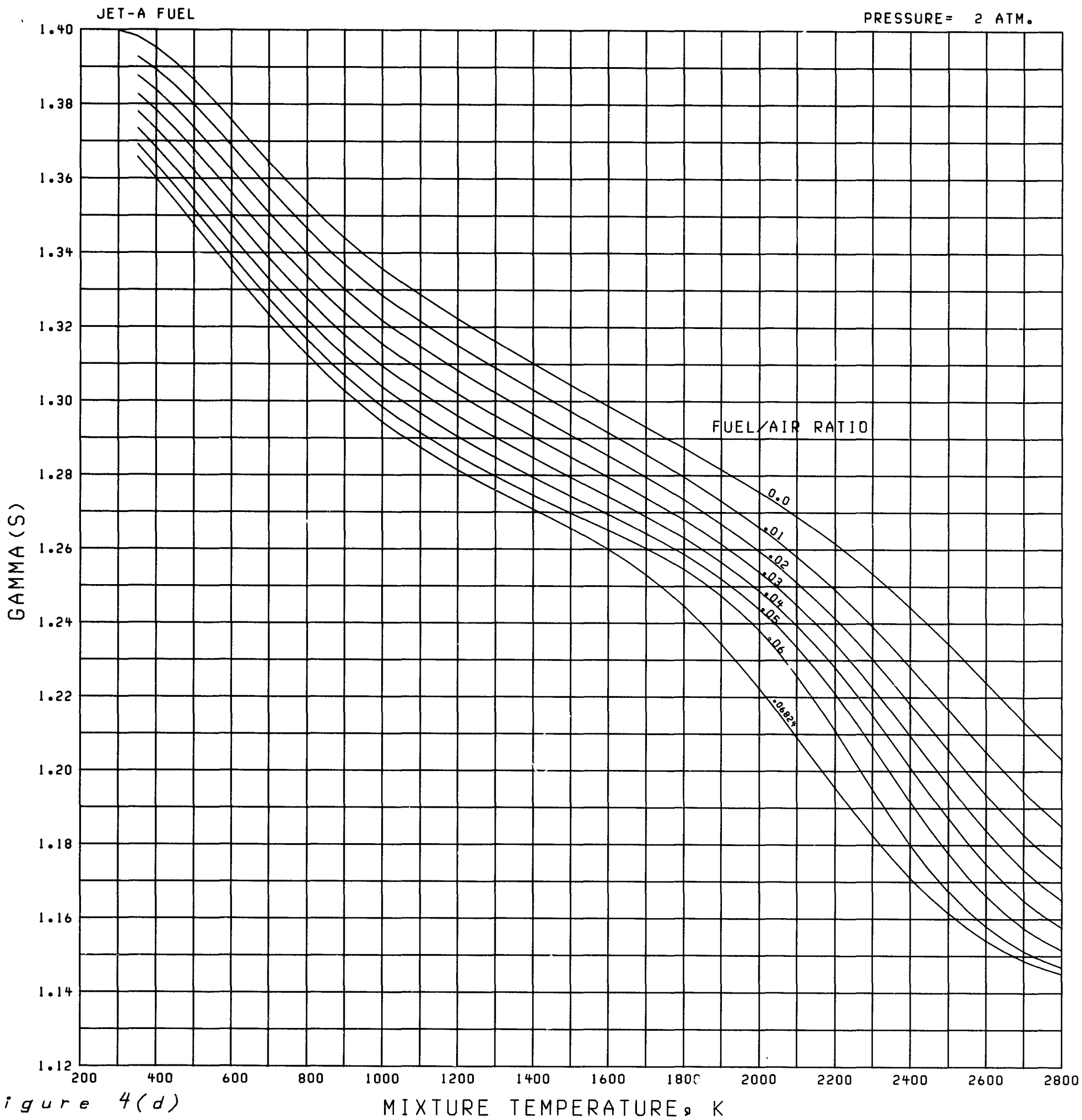


Figure 4(d)

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 30 ATM.

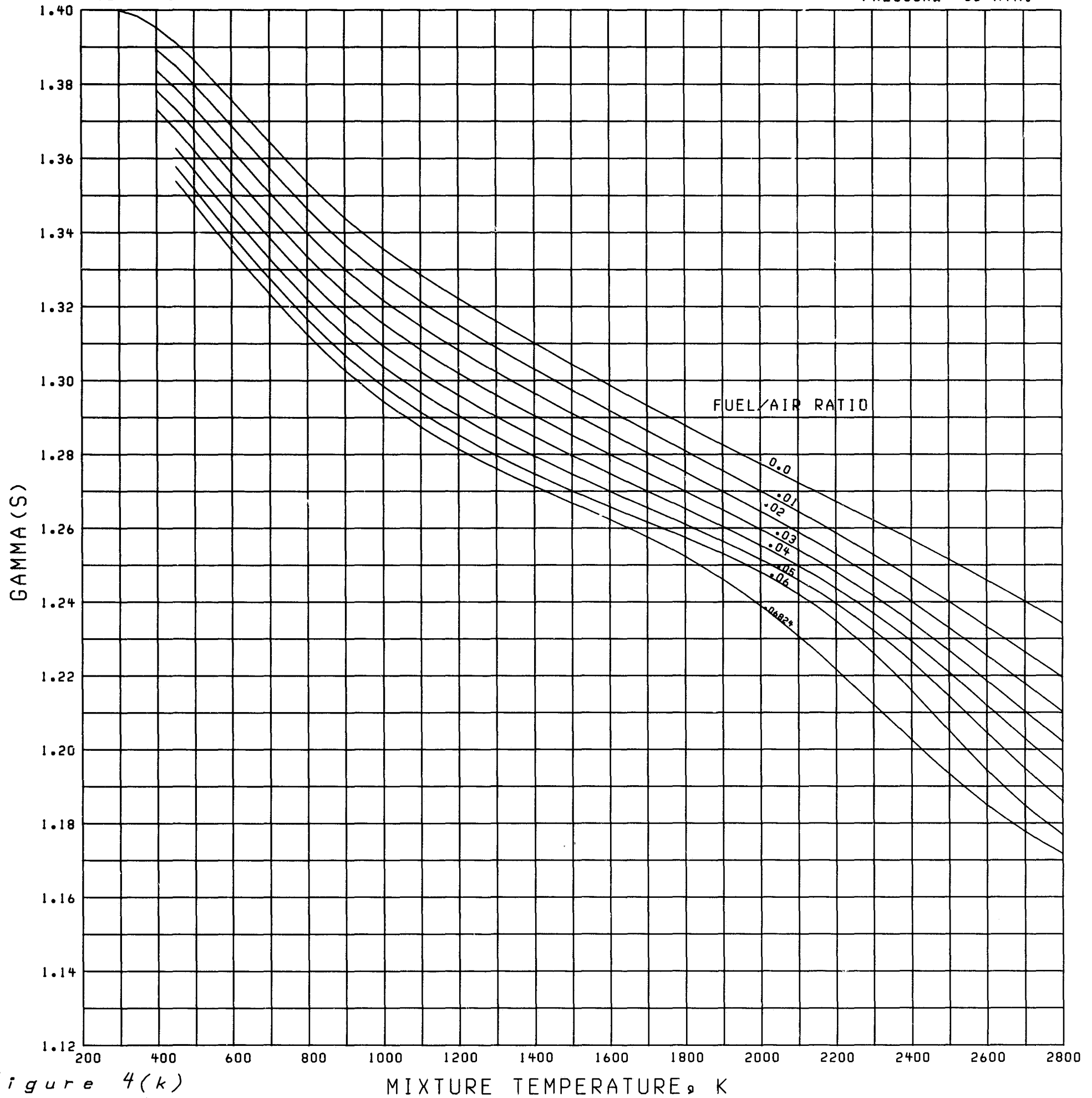


Figure 4(k)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 3 ATM.

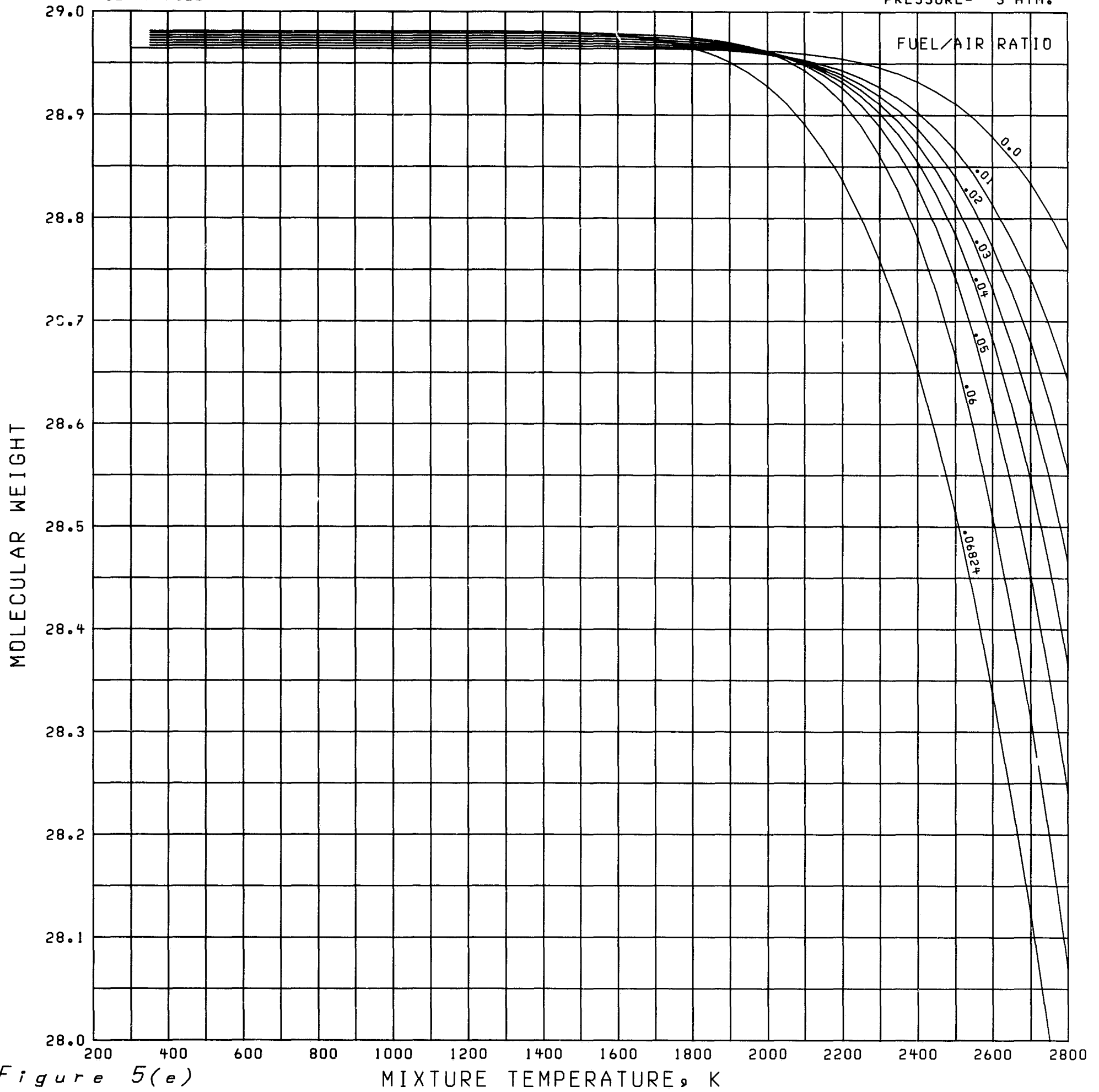


Figure 5(e)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 40 ATM.

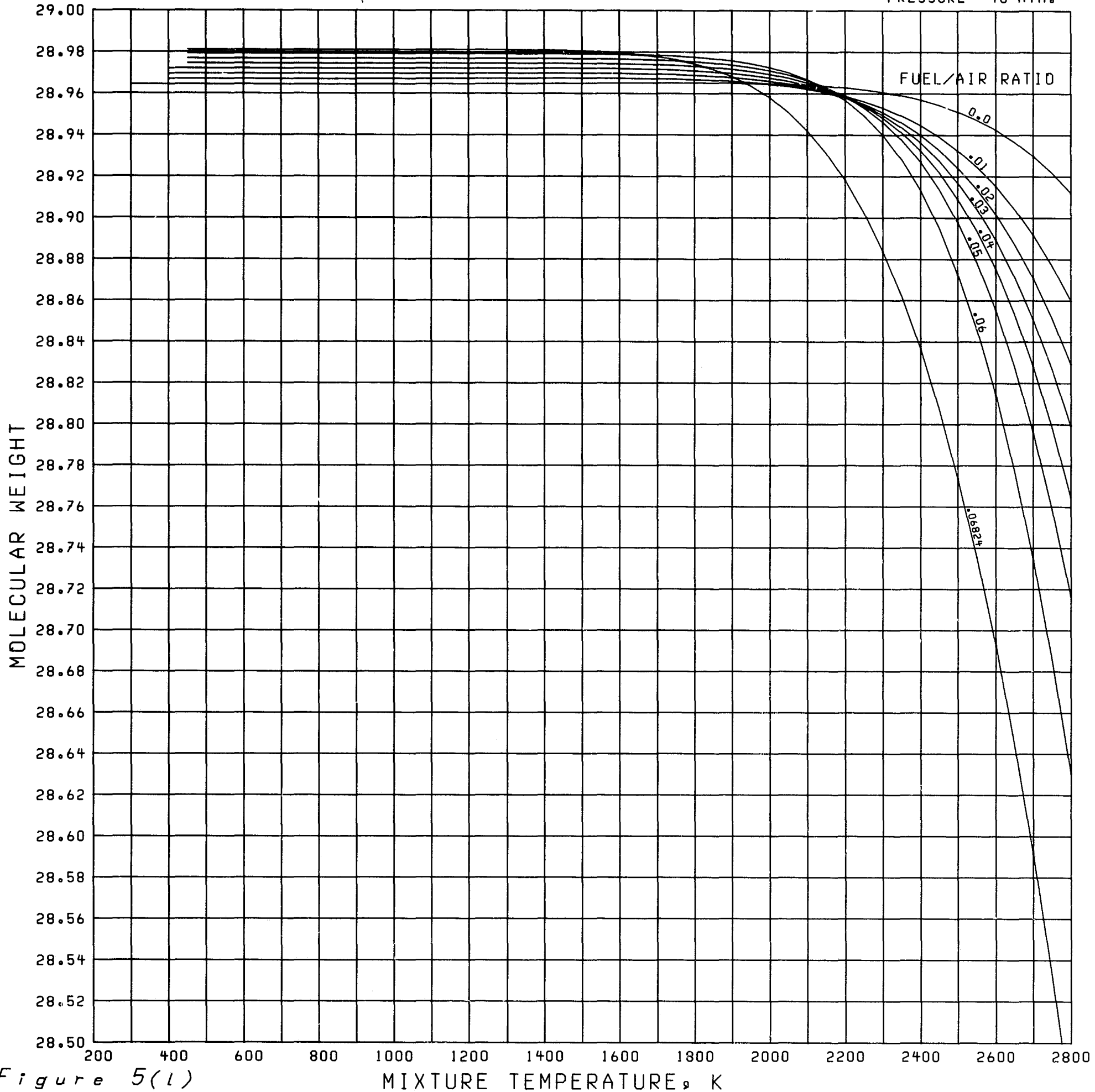


Figure 5(1)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 4 ATM.

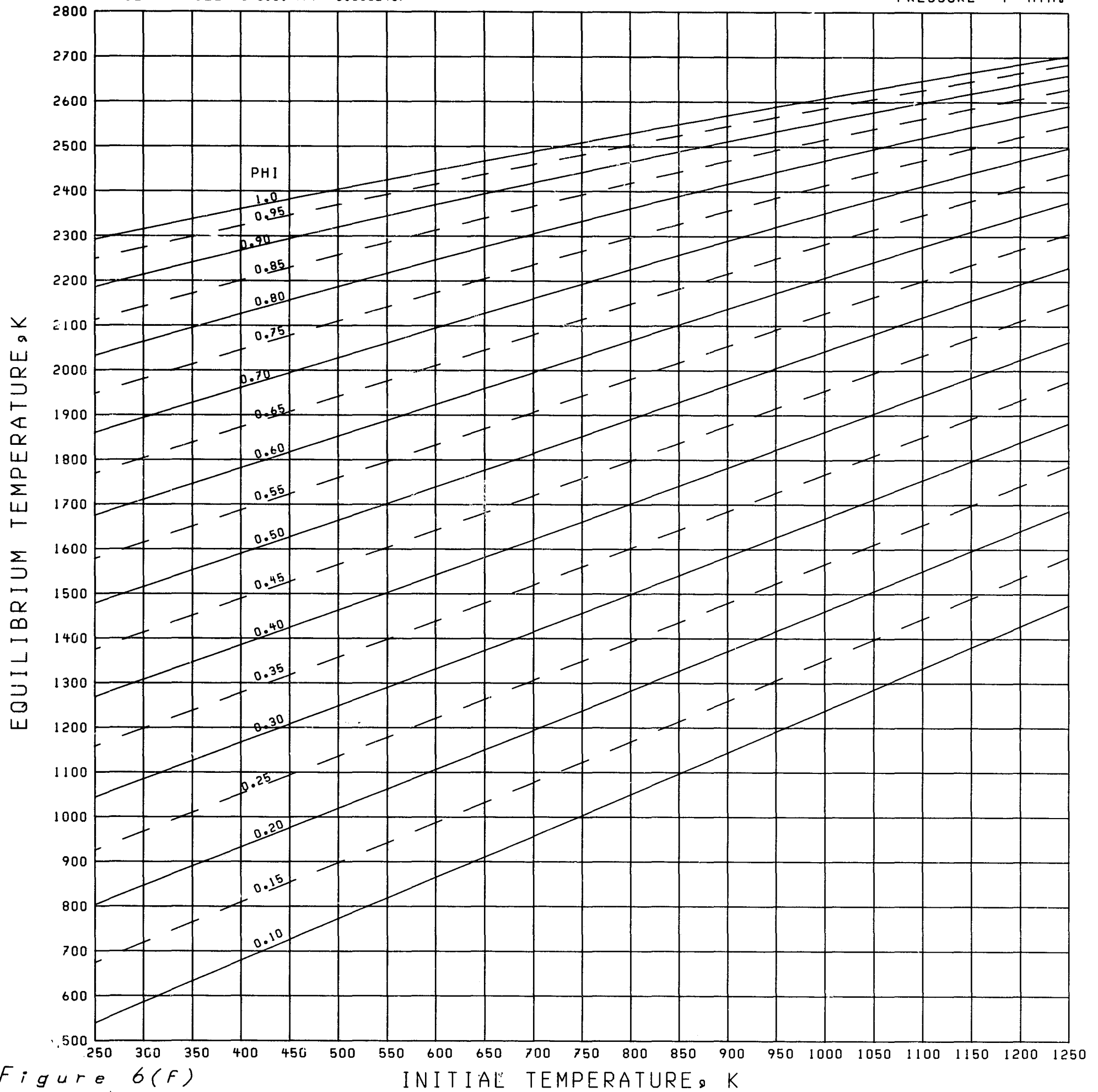


Figure 6(F)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE = 1.5 ATM.

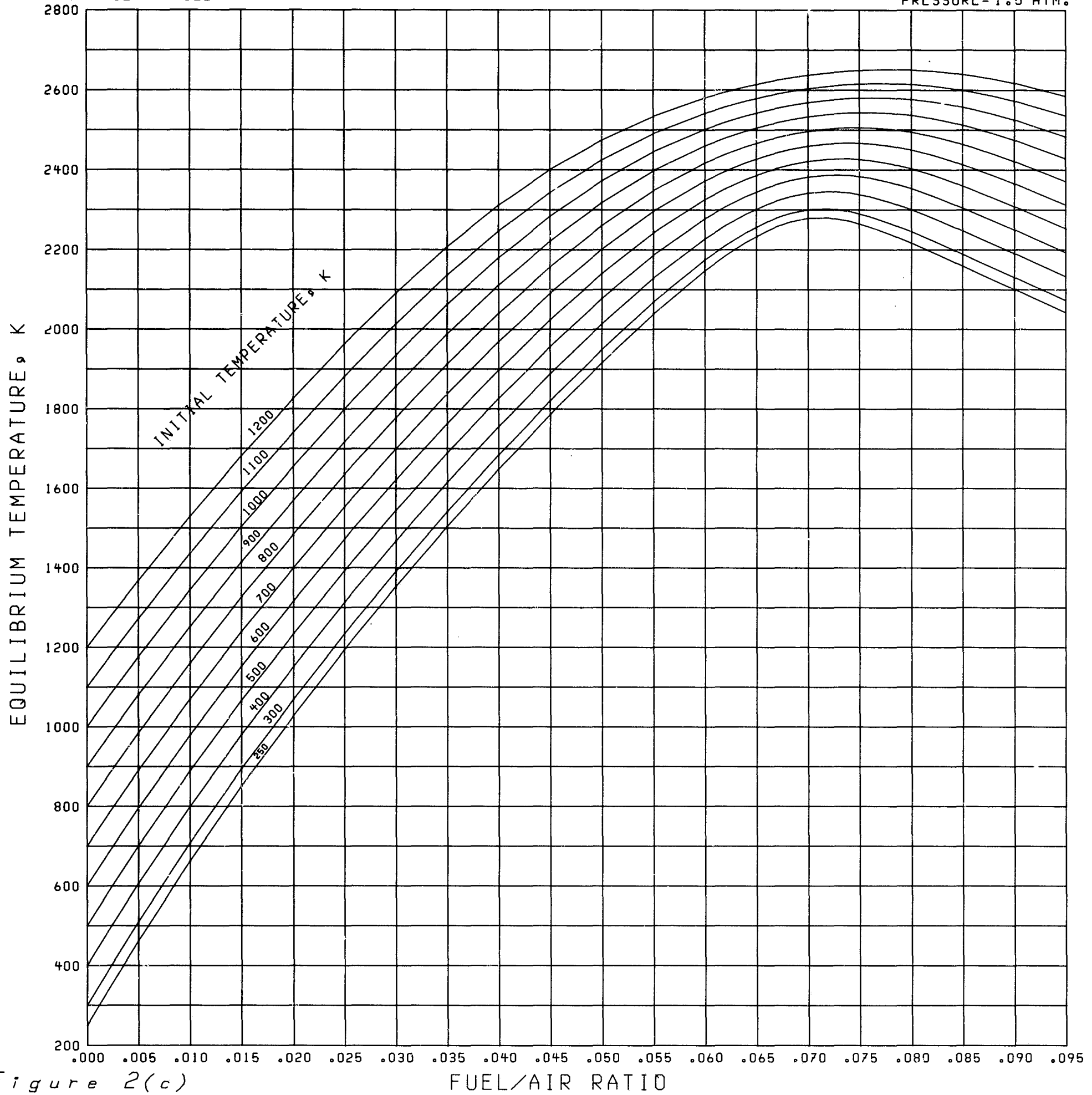


Figure 2(c)

EQUILIBRIUM TEMPERATURE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

JET-A FUEL

PRESSURE = 20 ATM.

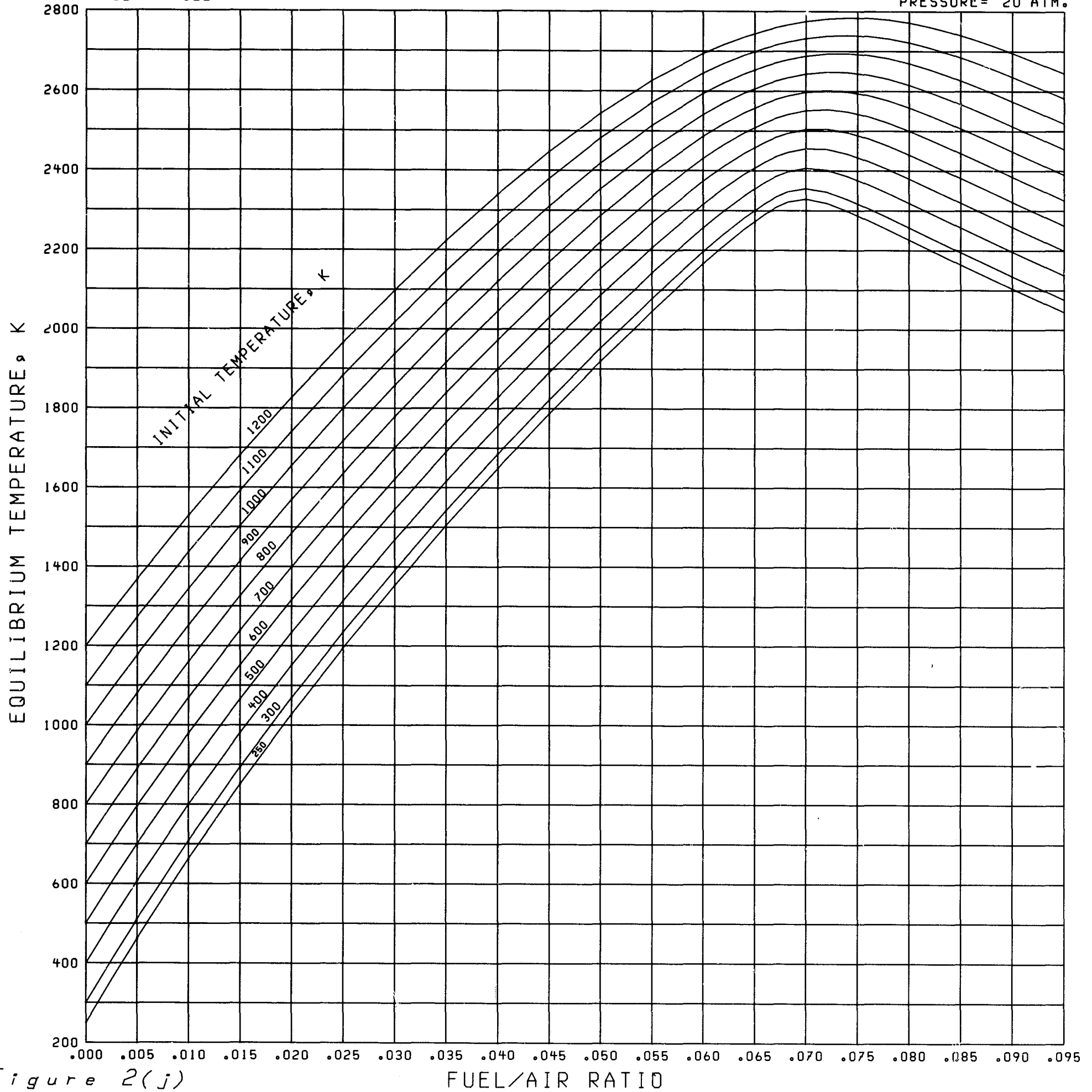


Figure 2(j)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

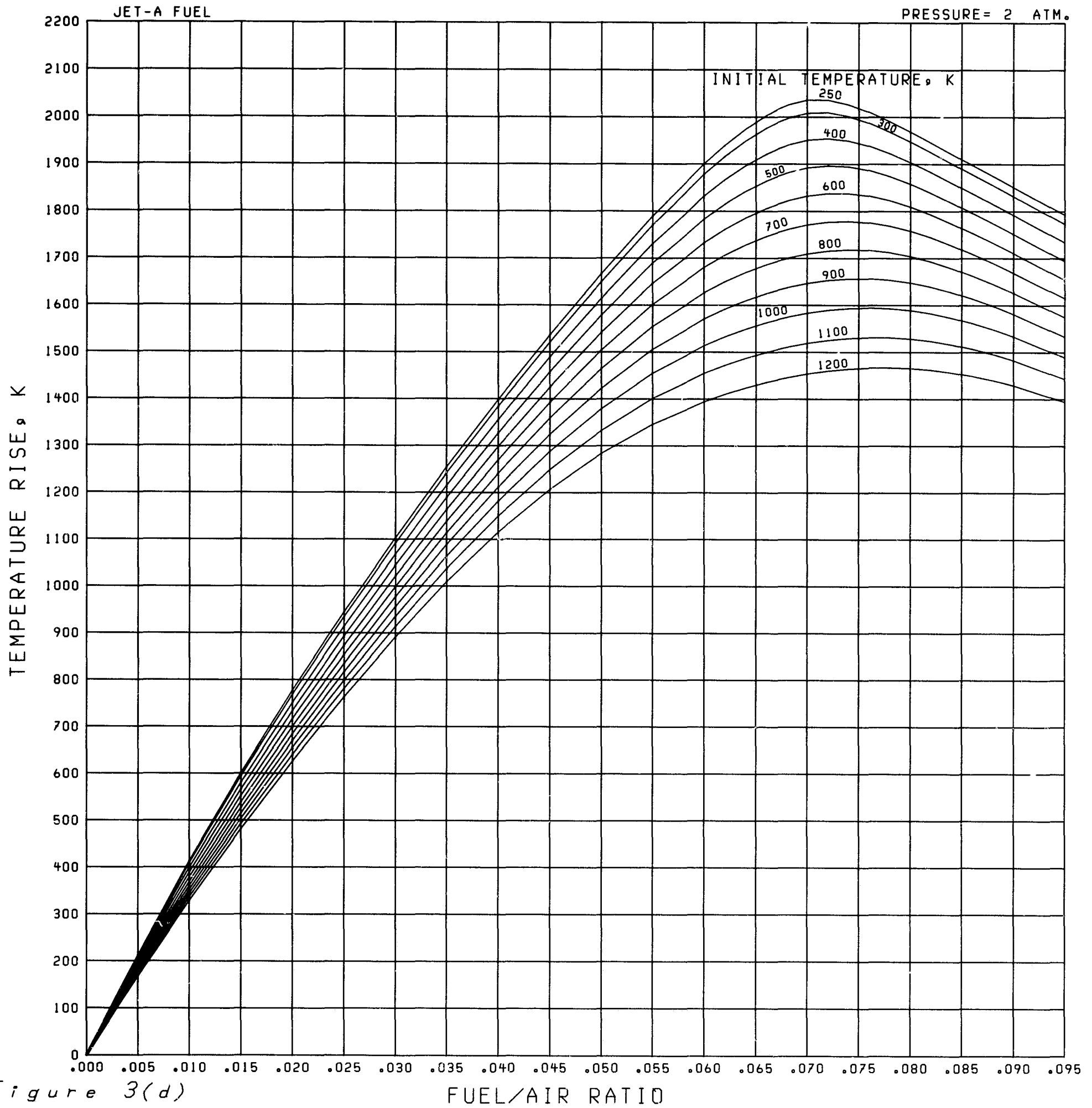


Figure 3(d)

EQUILIBRIUM TEMPERATURE RISE VS. F/A FOR VARIOUS VALUES OF INITIAL TEMPERATURE

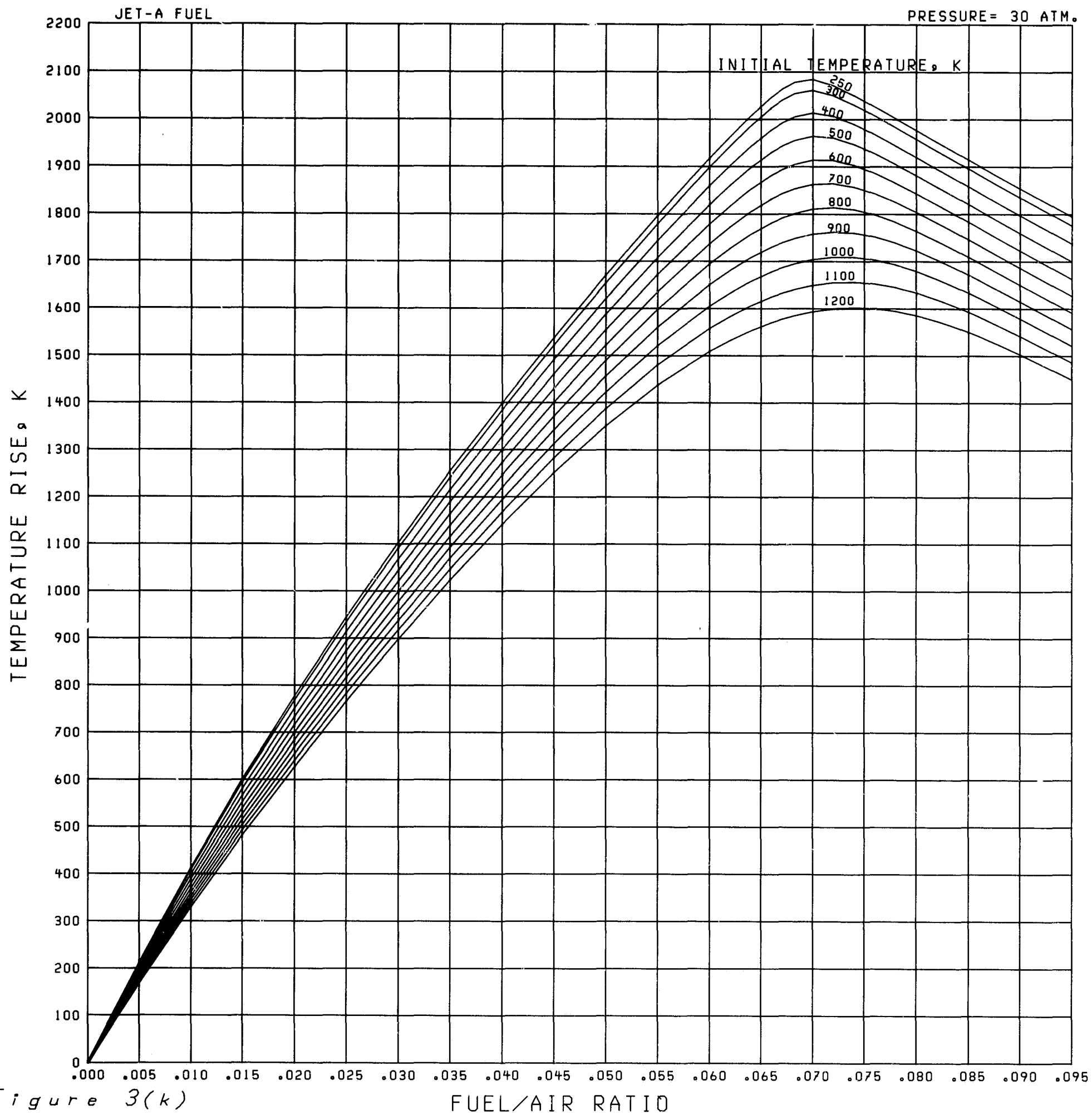


Figure 3(k)

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 3 ATM.

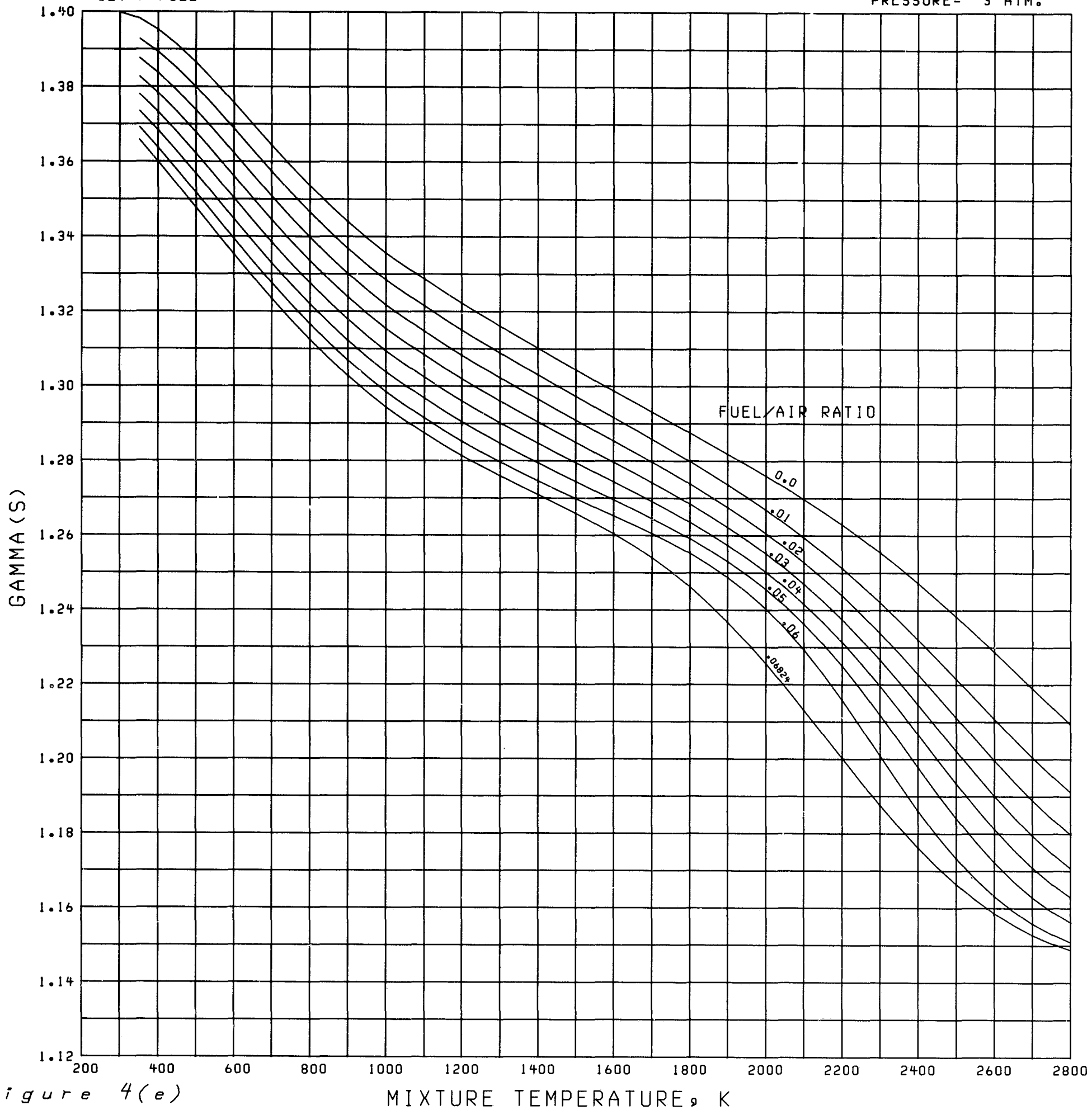


Figure 4(e)

MIXTURE TEMPERATURE, K

ISENTROPIC EXPONENT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 40 ATM.

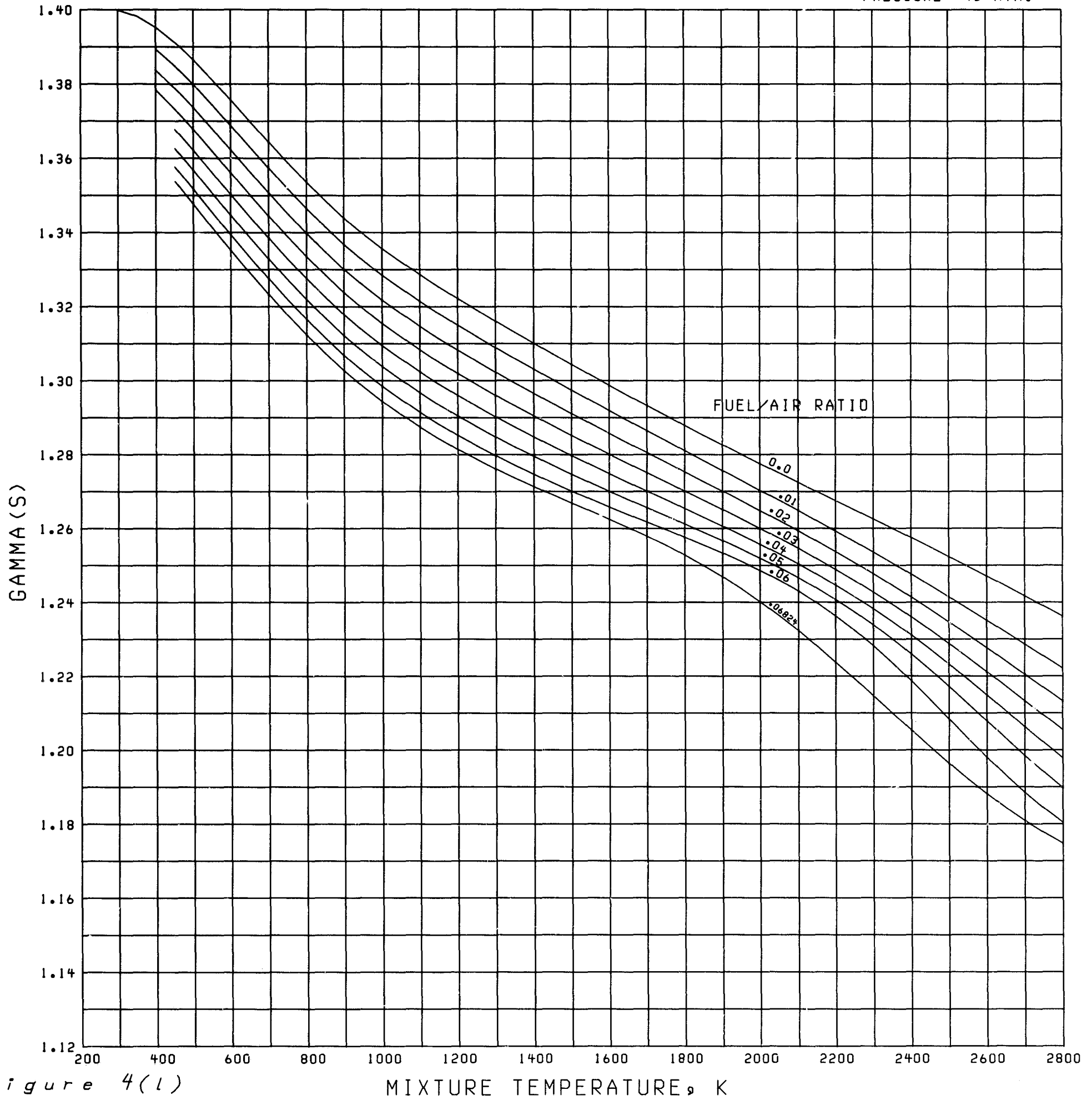


Figure 4(1)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE = 4 ATM.

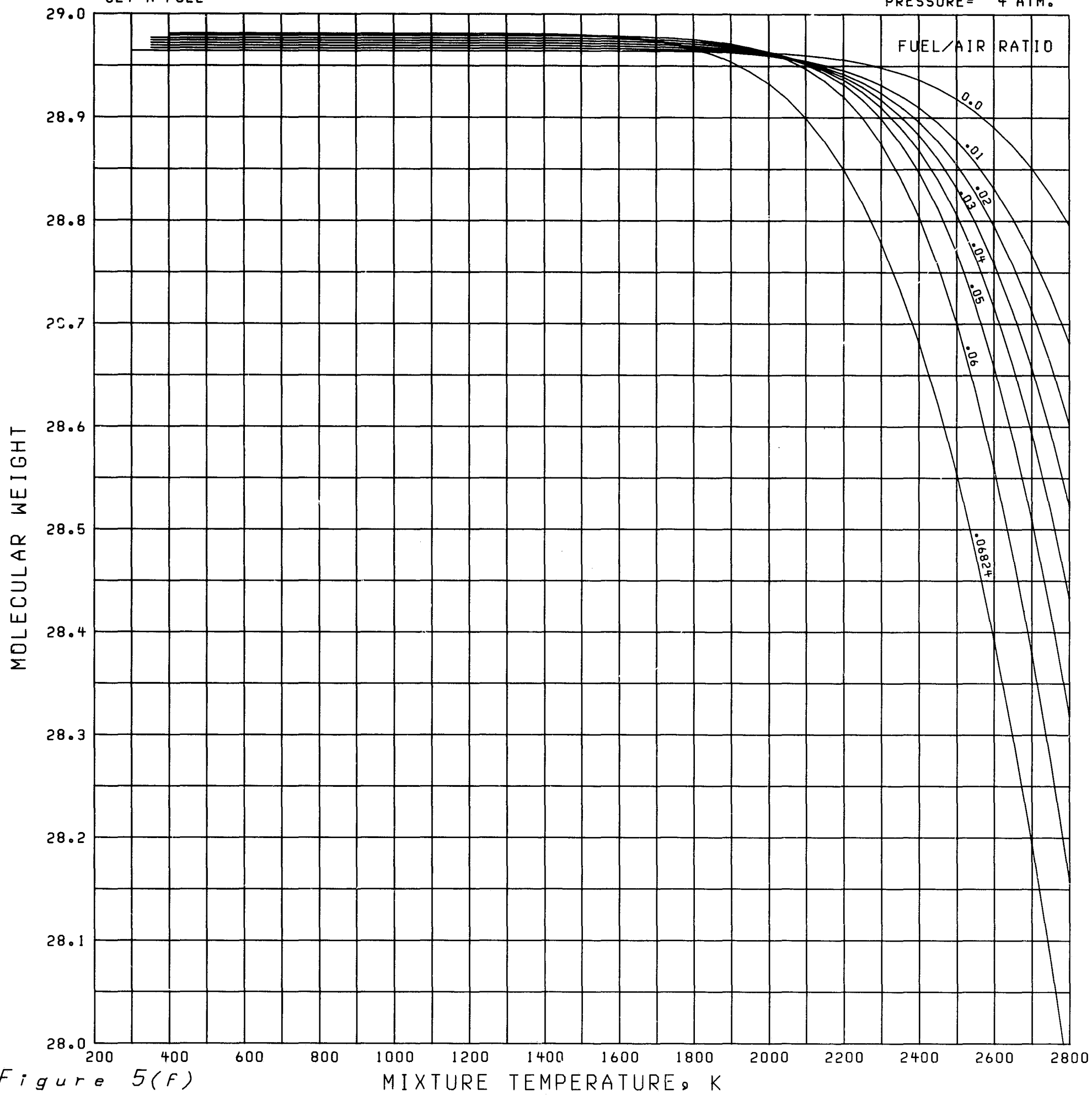


Figure 5(F)

MOLECULAR WEIGHT VS. MIXTURE TEMPERATURE FOR VARIOUS FUEL-AIR RATIOS

JET-A FUEL

PRESSURE= 50 ATM.

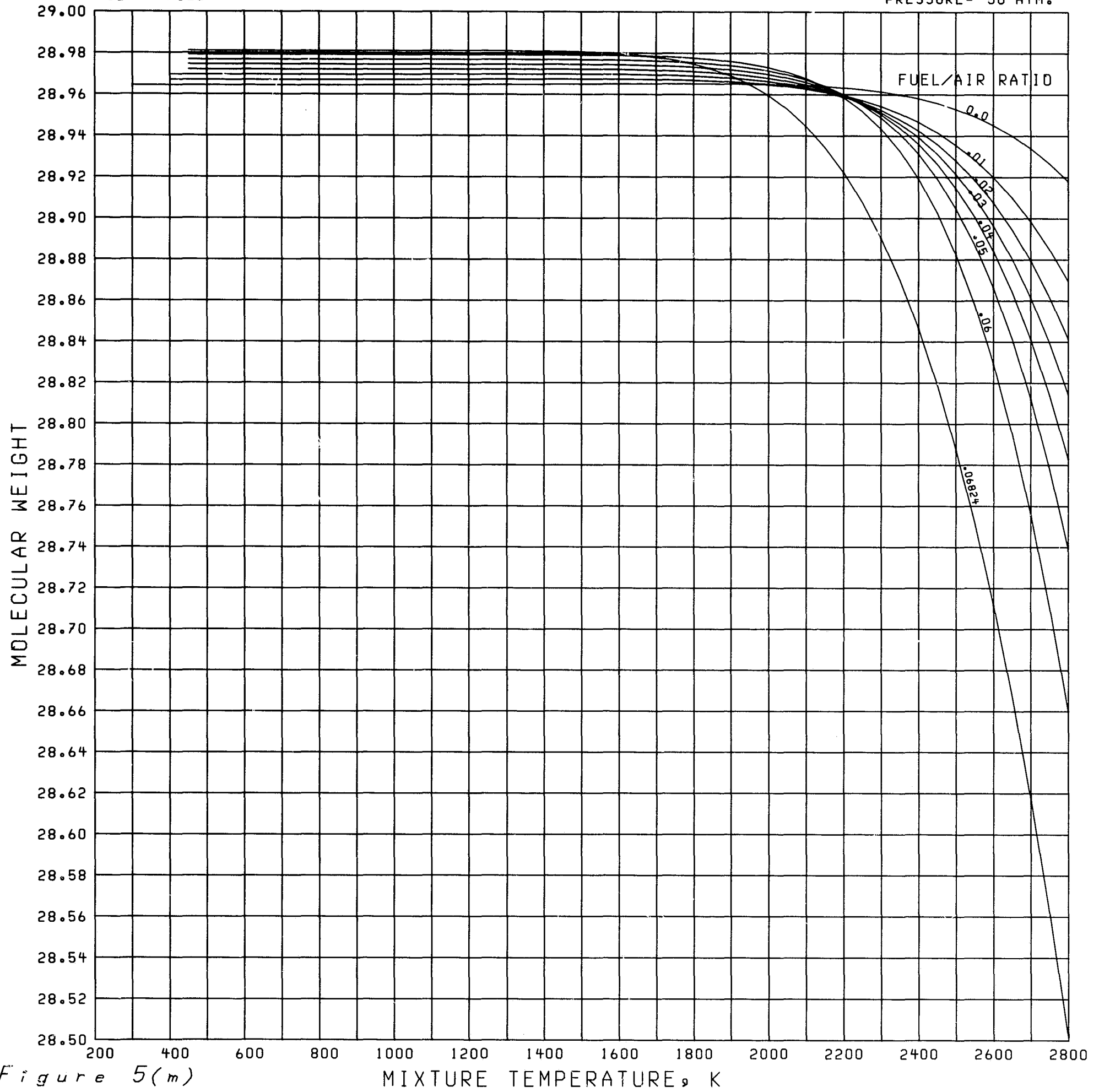


Figure 5(m)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 6 ATM.

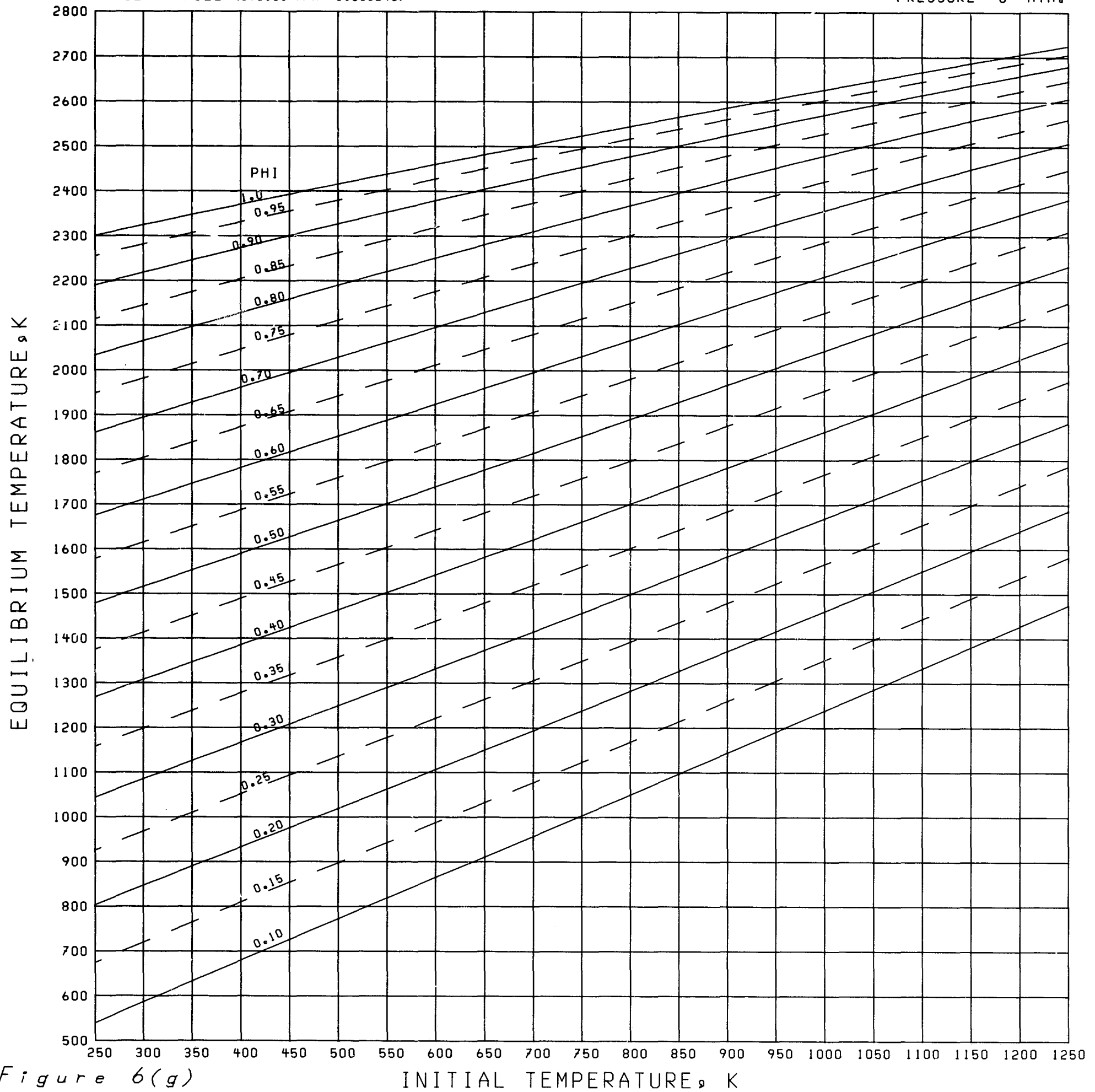


Figure 6(g)

JET-A FUEL (STOIC. F/A= 0.069240)

PRESSURE=10 ATM.

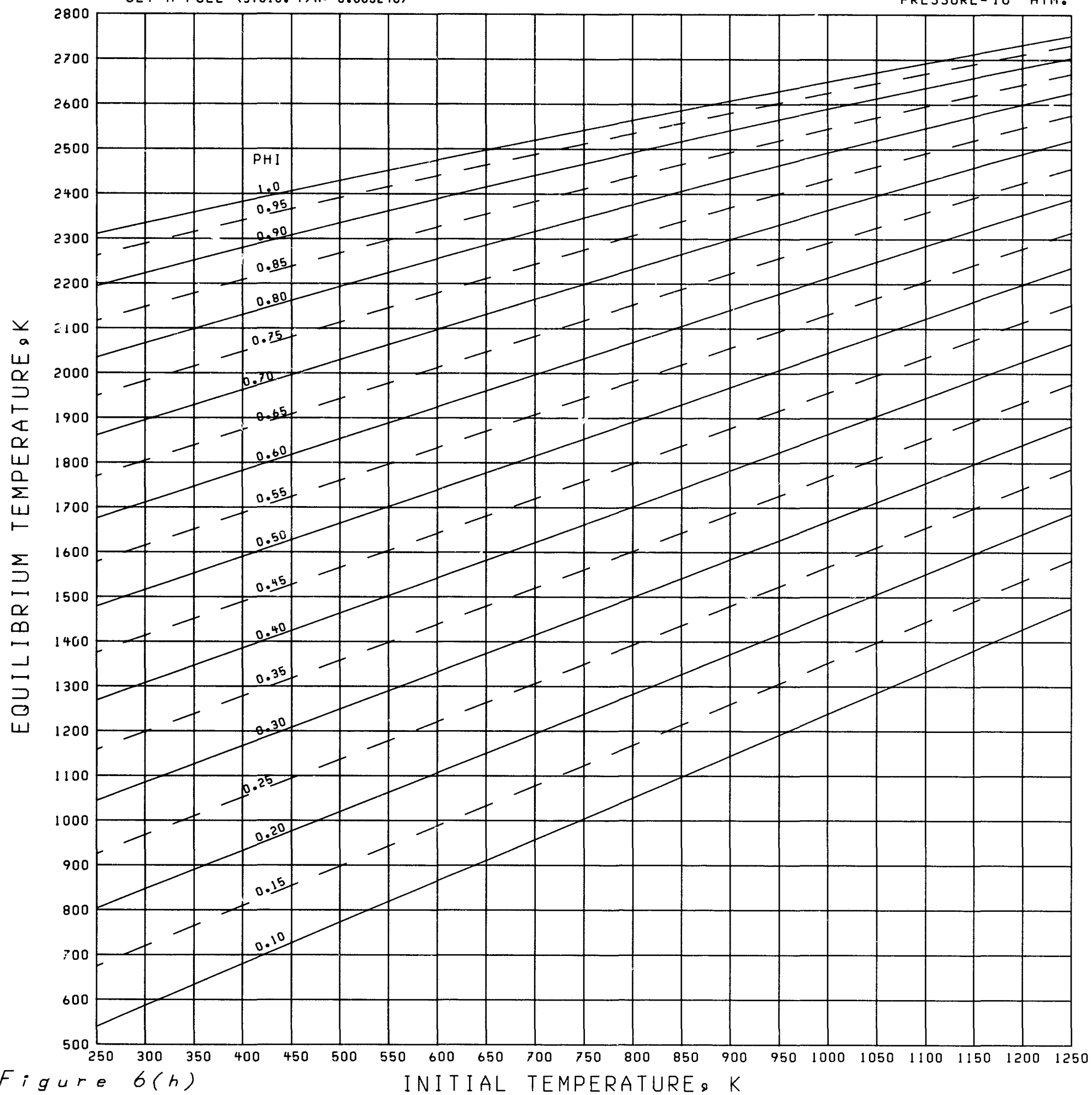


Figure 6(h)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE=15 ATM.

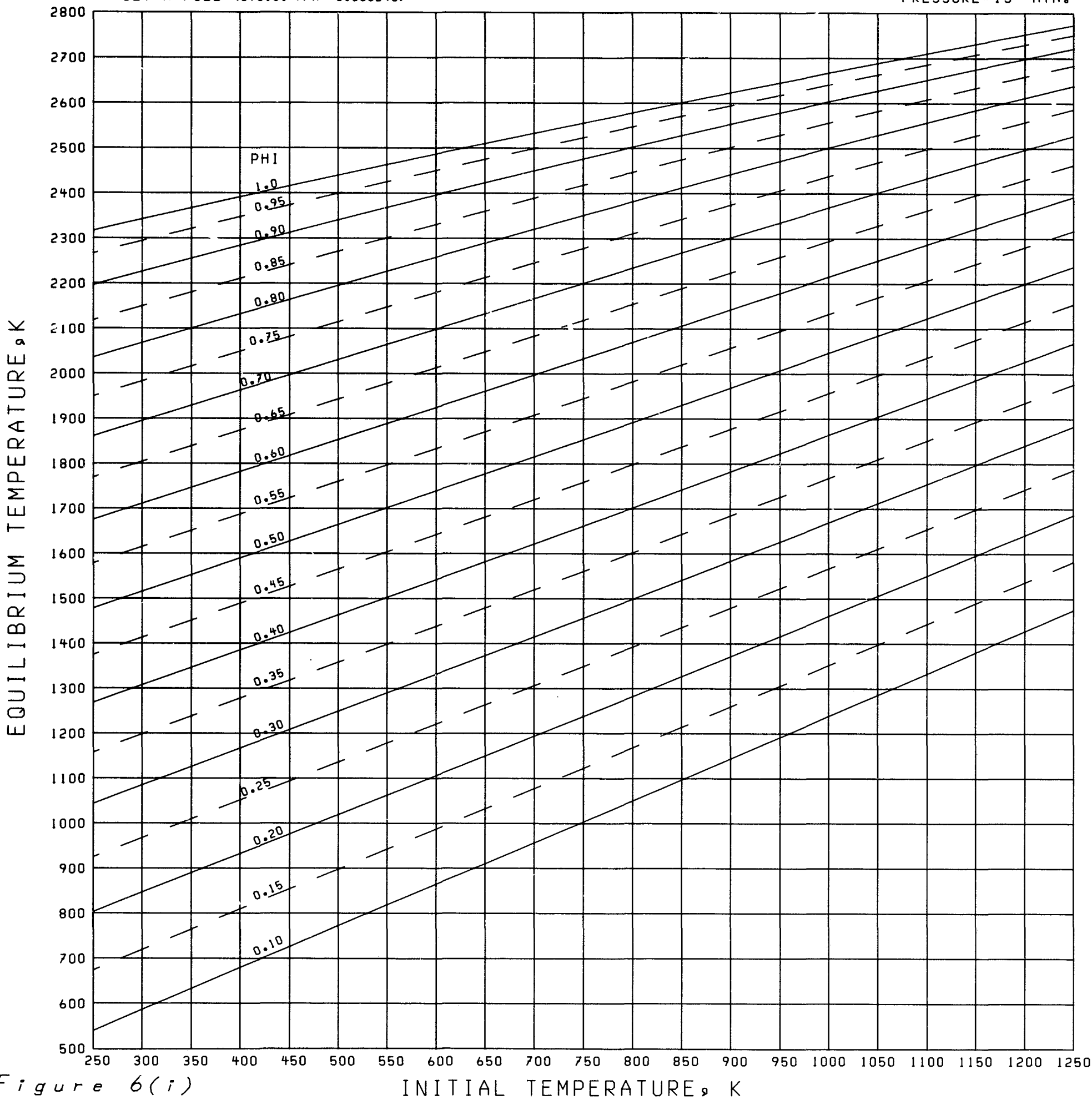
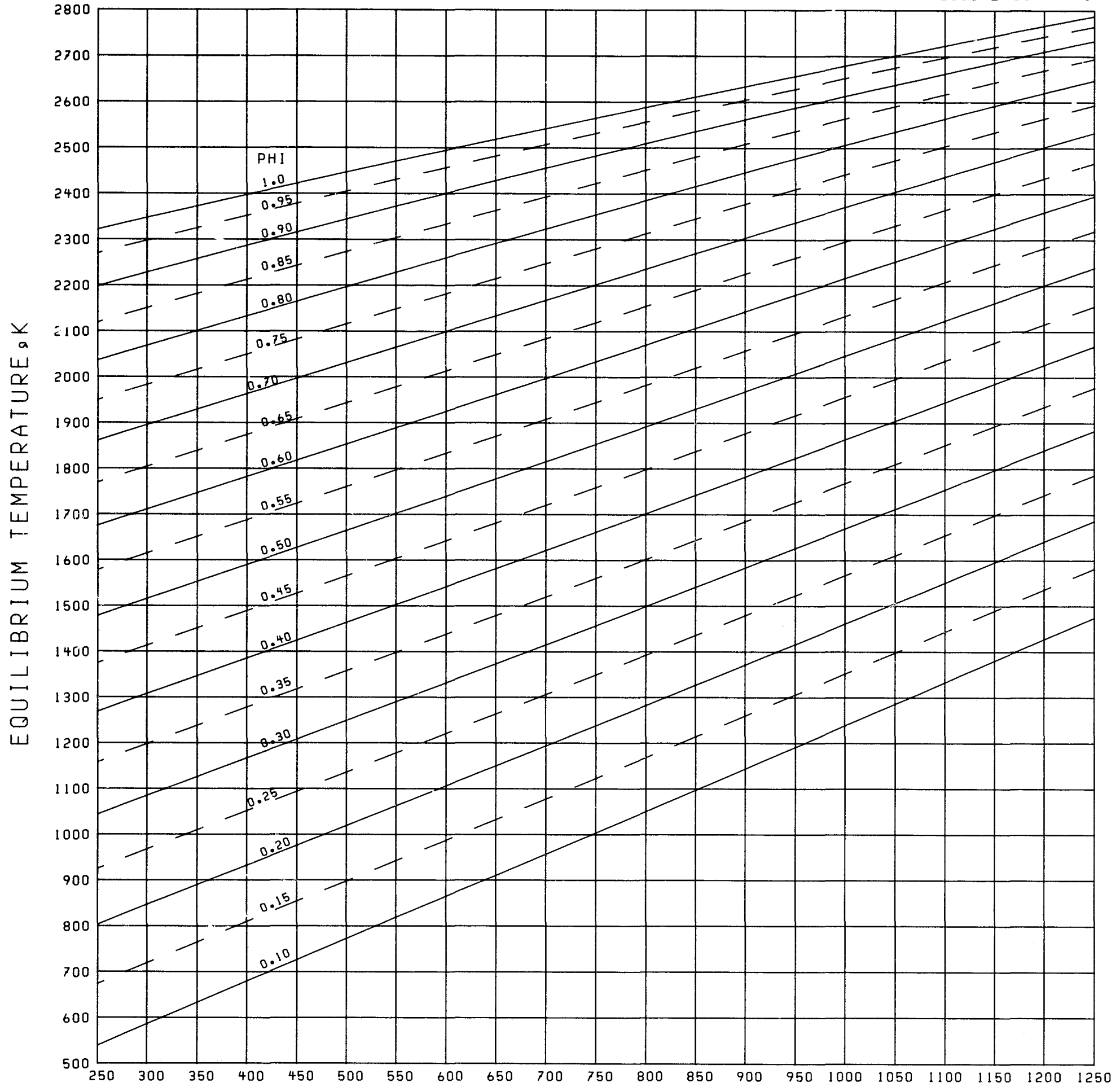


Figure 6(i)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE=20 ATM.



EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 30 ATM.

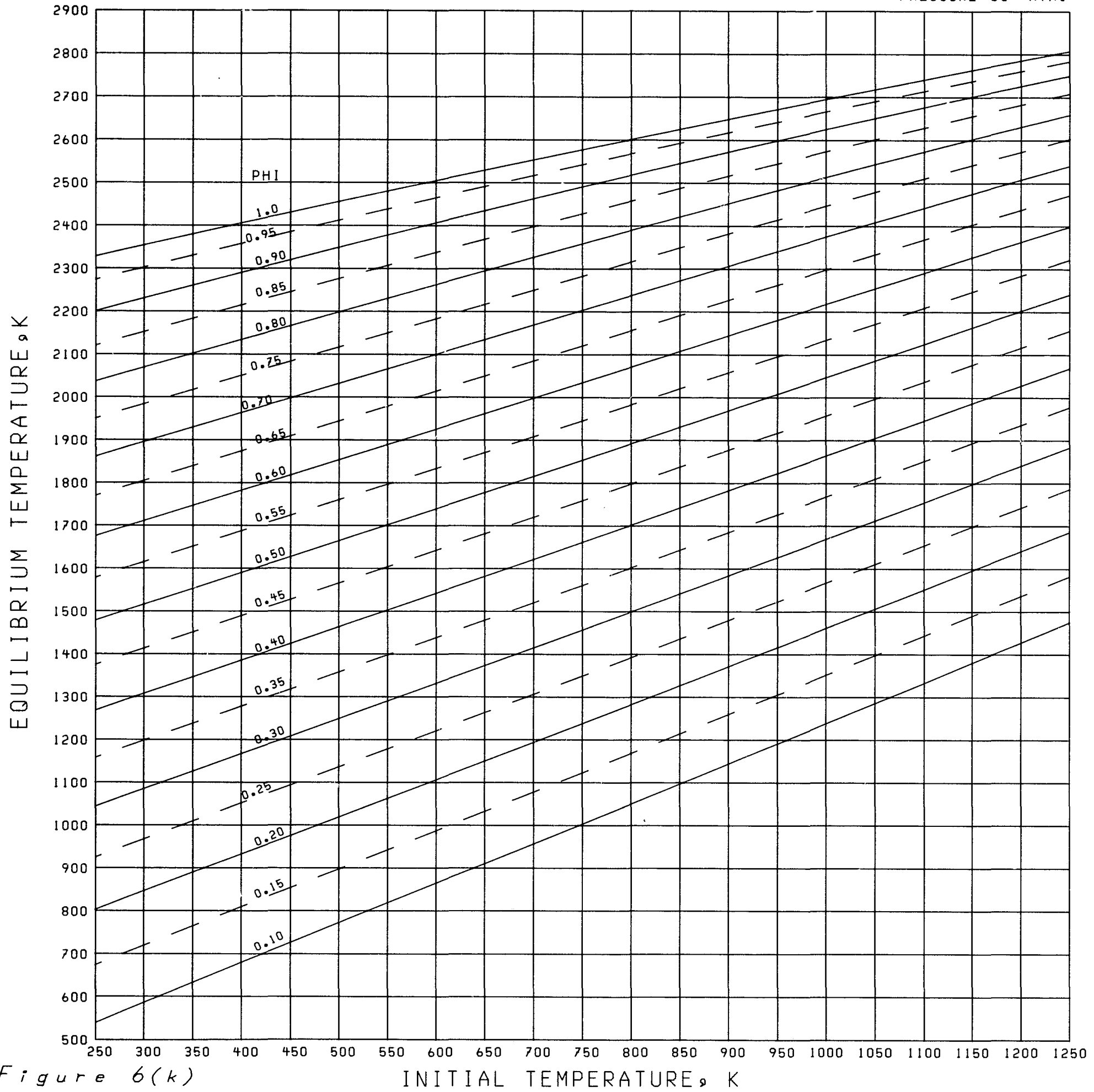


Figure 6(k)

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE= 40 ATM.

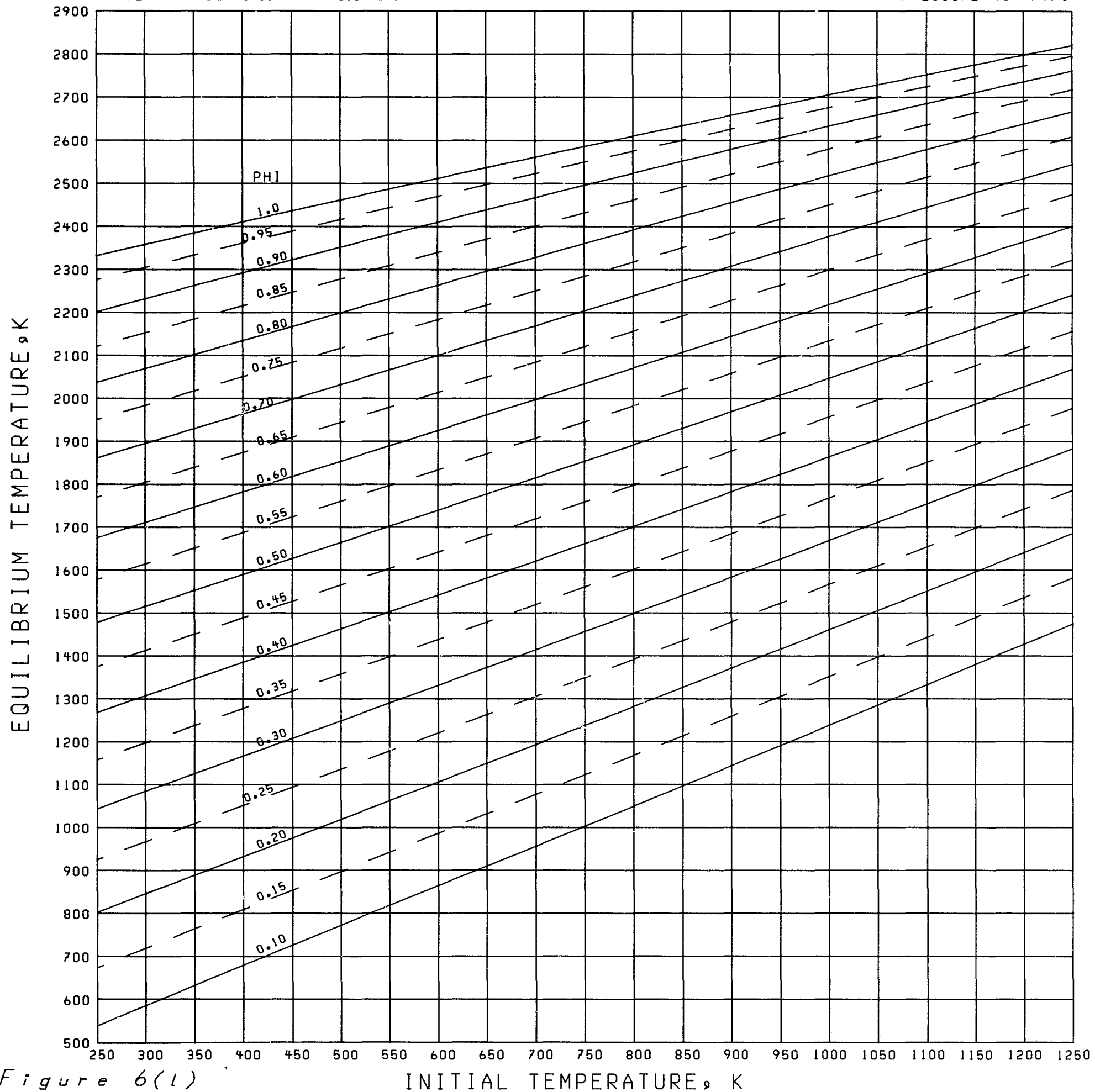


Figure 6(1)

INITIAL TEMPERATURE, K

EQUILIBRIUM TEMPERATURE VS. INITIAL TEMPERATURE FOR VARIOUS VALUES OF PHI

JET-A FUEL (STOIC. F/A= 0.068240)

PRESSURE=50 ATM.

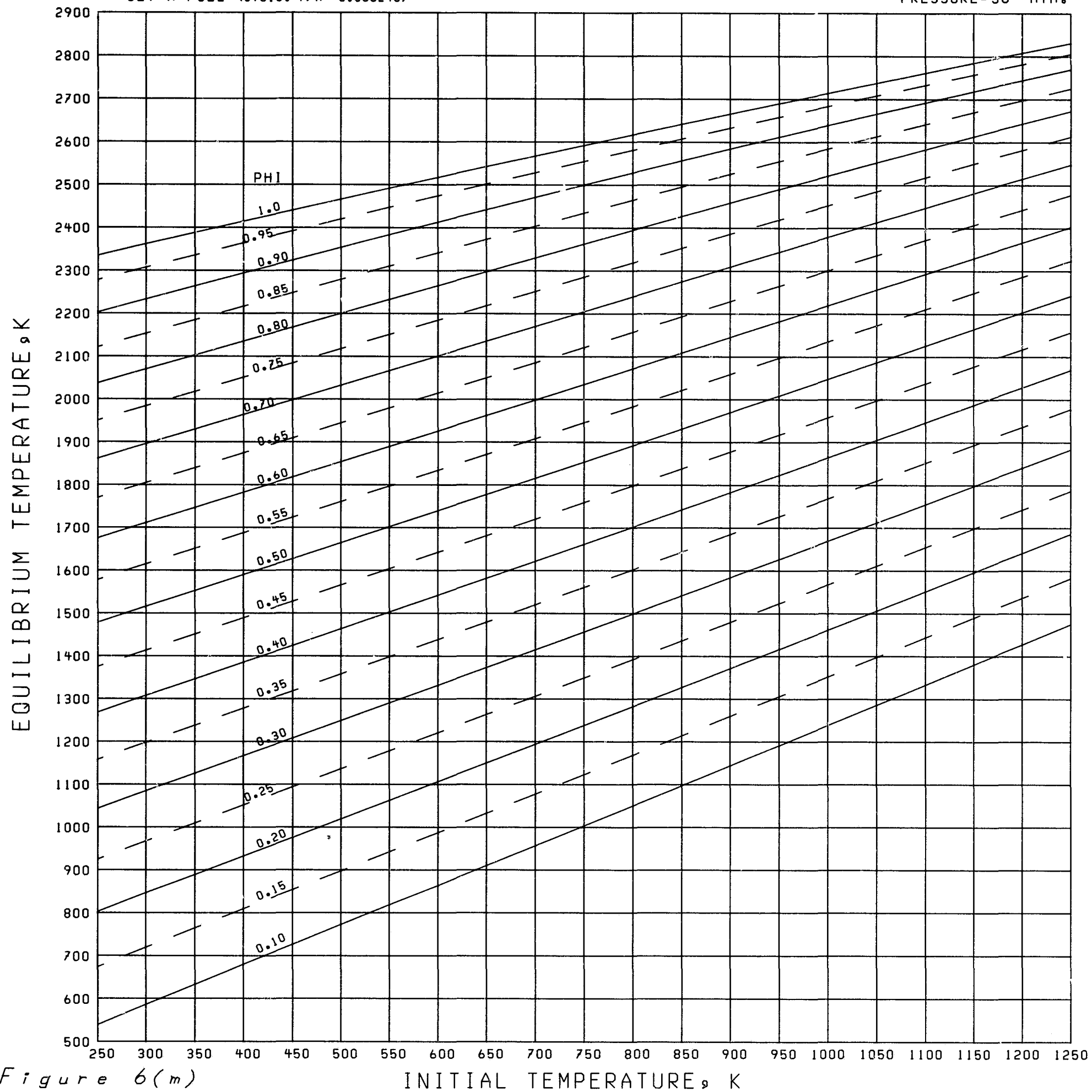


Figure 6(m)

CASE=	2	0/F=	15.4253	F/A=	0.06483	PERCENT FUEL=	6.0882	PHI=	0.9500										
P, ATM	0.5000	1.0000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2269.5	2289.4	2300.1	2307.3	2316.9	2323.2	2331.6	2341.1	2348.0	2352.4	2358.1	2361.8	2364.4						
T, DEG F	3625.5	3661.2	3680.5	3693.4	3710.6	3722.1	3737.1	3754.4	3766.6	3774.6	3784.9	3791.5	3796.3						
RHO, G/CC	7.707E-5	1.5305E-4	2.2868E-4	3.0412E-4	4.5463E-4	6.0480E-4	9.0451E-4	1.5024E-3	2.2482E-3	2.9930E-3	4.4805E-3	5.9644E-3	7.4511E-3						
M, MOL WT	28.708	28.751	28.774	28.790	28.810	28.824	28.842	28.863	28.877	28.887	28.899	28.907	28.913						
CP, CAL/(G)(K)	0.5673	0.5330	0.5147	0.5025	0.4862	0.4754	0.4612	0.4448	0.4331	0.4254	0.4155	0.4090	0.4044						
GAMMA (S)	1.1712	1.1784	1.1828	1.1858	1.1901	1.1932	1.1975	1.2027	1.2068	1.2095	1.2133	1.2158	1.2177						
SON VEL,M/SEC	877.4	883.3	886.6	888.9	892.1	894.2	897.1	900.6	903.2	905.0	907.3	908.8	909.9						

MOLE FRACTIONS

AR	0.0086E	0.00869	0.00870	0.00870	0.00871	0.00871	0.00872	0.00872	0.00873	0.00873	0.00874	0.00874	0.00874	0.00874	0.00874	0.00874	0.00874	0.00874
CO	0.01273	0.01080	0.00974	0.00902	0.00805	0.00740	0.00653	0.00554	0.00483	0.00436	0.00376	0.00337	0.00309					
CO2	0.11299	0.11511	0.11627	0.11706	0.11812	0.11884	0.11978	0.12086	0.12164	0.12215	0.12280	0.12323	0.12353					
H	0.00056	0.00040	0.00033	0.00028	0.00023	0.00020	0.00016	0.00012	0.00009	0.00008	0.00006	0.00005	0.00004					
H2	0.00237	0.00197	0.00175	0.00161	0.00142	0.00130	0.00114	0.00095	0.00082	0.00074	0.00063	0.00057	0.00052					
H2O	0.11478	0.11567	0.11615	0.11647	0.11690	0.11718	0.11755	0.11798	0.11828	0.11848	0.11873	0.11890	0.11902					
NO	0.00385	0.00387	0.00388	0.00388	0.00387	0.00387	0.00386	0.00385	0.00383	0.00382	0.00381	0.00380	0.00379					
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001					
N2	0.72493	0.72601	0.72659	0.72699	0.72751	0.72786	0.72832	0.72885	0.72923	0.72948	0.72980	0.73000	0.73015					
O	0.00069	0.00053	0.00045	0.00040	0.00034	0.00030	0.00025	0.00020	0.00017	0.00015	0.00012	0.00011	0.00010					
OH	0.00432	0.00386	0.00359	0.00341	0.00317	0.00300	0.00277	0.00255	0.00230	0.00216	0.00198	0.00186	0.00177					
O2	0.01409	0.01308	0.01254	0.01217	0.01167	0.01135	0.01092	0.01042	0.01007	0.00985	0.00956	0.00937	0.00924					

CASE=	2	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3881	PHI=	1.0000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2298.1	2320.6	2332.9	2341.4	2352.7	2360.4	2370.7	2382.8	2391.8	2397.7	2405.6	2410.9	2414.7						
T, DEG F	3676.8	3717.3	3739.6	3754.8	3775.2	3789.0	3807.6	3829.4	3845.5	3856.2	3870.4	3879.9	3886.8						
RHO, G/CC	7.580E-5	1.5040E-4	2.2460E-4	2.9858E-4	4.4609E-4	5.9319E-4	8.6659E-4	1.4715E-3	2.2004E-3	2.9279E-3	4.3799E-3	5.8294E-3	7.2771E-3						
M, MOL WT	28.590	28.638	28.665	28.683	28.707	28.723	28.745	28.771	28.790	28.803	28.820	28.831	28.839						
CP, CAL/(G)(K)	0.6063	0.5710	0.5521	0.5394	0.5226	0.5114	0.4966	0.4795	0.4671	0.4589	0.4482	0.4411	0.4359						
GAMMA (S)	1.1646	1.1711	1.1749	1.1777	1.1815	1.1841	1.1879	1.1925	1.1961	1.1986	1.2020	1.2044	1.2062						
SON VEL,M/SEC	882.2	888.3	891.7	894.0	897.3	899.5	902.5	906.2	909.0	910.8	913.4	915.1	916.4						

MOLE FRACTIONS

AR	0.00861	0.00863	0.00864	0.00864	0.00865	0.00865	0.00866	0.00867	0.00867	0.00868	0.00868	0.00869	0.00869	0.00869	0.00869	0.00869	0.00869	0.00869
CO	0.01929	0.01716	0.01596	0.01513	0.01400	0.01323	0.01218	0.01093	0.00999	0.00937	0.00853	0.00797	0.00755					
CO2	0.11207	0.11442	0.01050	0.01165	0.01290	0.01375	0.01490	0.01217	0.01229	0.01229	0.01238	0.01240	0.01249					
H	0.00082	0.00060	0.00050	0.00044	0.00036	0.00032	0.00026	0.00020	0.00016	0.00014	0.00011	0.00010	0.00009					
H2	0.00368	0.00320	0.00293	0.00276	0.00252	0.00236	0.00215	0.00190	0.00173	0.00161	0.00145	0.00135	0.00127					
H2O	0.11871	0.11976	0.12034	0.12071	0.12123	0.12157	0.12203	0.12257	0.12296	0.12321	0.12355	0.12378	0.12394					
NO	0.00320	0.00313	0.00307	0.00303	0.00296	0.00291	0.00282	0.00271	0.00263	0.00255	0.00244	0.00237	0.00231					
NO2	0.71995	0.72121	0.72191	0.72238	0.72303	0.72347	0.72407	0.72478	0.72530	0.72566	0.72613	0.72645	0.72668					
O	0.00064	0.00048	0.00041	0.00036	0.00030	0.00026	0.00021	0.00017	0.00013	0.00012	0.00009	0.00008	0.00007					
OH	0.00433	0.00384	0.00356	0.00336	0.00310	0.00292	0.00267	0.00238	0.00216	0.00201	0.00182	0.00169	0.00159					
O2	0.00869	0.00757	0.00694	0.00652	0.00595	0.00556	0.00504	0.00443	0.00398	0.00368	0.00329	0.00303	0.00284					

CASE= 5 O/F= 15.4253 F/A= 0.06483 PERCENT FUEL= 6.0882 PHI= 0.9500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2487.2	2521.9	2541.5	2555.1	2573.7	2586.5	2604.1	2625.2	2641.1	2651.9	2666.5	2676.4	2683.7
T, DEG F	4017.3	4079.7	4115.0	4139.4	4173.0	4196.1	4227.6	4265.6	4294.2	4313.7	4340.0	4357.7	4371.0
RHO, G/CC	6.9293-5	1.3705-4	2.0429-4	2.7122-4	4.0447-4	5.3714-4	8.0135-4	1.3270-3	1.9809-3	2.6325-3	3.9315-3	5.2266-3	6.5189-3
M, MOL WT	28.285	28.360	28.403	28.433	28.473	28.501	28.539	28.585	28.619	28.643	28.674	28.696	28.712
CP, CAL/(G)(K)	0.7711	0.7200	0.6923	0.6736	0.6485	0.6315	0.6088	0.5820	0.5621	0.5487	0.5309	0.5189	0.5100
GAMMA (S)	1.1470	1.1526	1.1559	1.1584	1.1618	1.1643	1.1678	1.1724	1.1760	1.1785	1.1823	1.1849	1.1869
SON VEL, M/SEC	915.8	923.1	927.4	930.3	934.4	937.3	941.3	946.1	949.9	952.5	956.1	958.5	960.4

MOLE FRACTIONS

AR	0.00855	0.00857	0.00859	0.00859	0.00861	0.00862	0.00863	0.00864	0.00865	0.00866	0.00867	0.00867	0.00868
CO	0.03079	0.02802	0.02638	0.02532	0.02358	0.02243	0.02082	0.01883	0.01729	0.01623	0.01477	0.01378	0.01303
CO2	0.09308	0.09618	0.09801	0.09930	0.10111	0.10239	0.10417	0.10636	0.10805	0.10921	0.11080	0.11189	0.11271
H	0.00253	0.00196	0.00167	0.00149	0.00126	0.00111	0.00093	0.00074	0.00061	0.00053	0.00044	0.00038	0.00034
H02	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00575	0.00507	0.00468	0.00442	0.00406	0.00381	0.00348	0.00308	0.00279	0.00259	0.00232	0.00215	0.00202
H20	0.10594	0.10758	0.10850	0.10913	0.10999	0.11058	0.11134	0.11234	0.11305	0.11354	0.11418	0.11462	0.11494
NO	0.00711	0.00729	0.00737	0.00742	0.00748	0.00751	0.00754	0.00755	0.00755	0.00754	0.00751	0.00749	0.00746
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71259	0.71441	0.71545	0.71617	0.71717	0.71786	0.71881	0.71996	0.72084	0.72144	0.72225	0.72280	0.72322
O	0.00278	0.00225	0.00197	0.00179	0.00156	0.00141	0.00121	0.00100	0.00085	0.00076	0.00065	0.00057	0.00052
OH	0.00974	0.00903	0.00860	0.00829	0.00786	0.00754	0.00711	0.00657	0.00614	0.00585	0.00545	0.00517	0.00496
O2	0.02113	0.01964	0.01877	0.01816	0.01732	0.01673	0.01591	0.01492	0.01416	0.01364	0.01294	0.01246	0.01211

CASE= 5 O/F= 14.6540 F/A= 0.06824 PERCENT FUEL= 6.3881 PHI= 1.0000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2504.5	2540.8	2561.3	2575.6	2595.3	2608.9	2627.6	2650.2	2667.4	2679.2	2695.1	2706.0	2714.2
T, DEG F	4048.4	4113.7	4150.7	4176.4	4211.8	4236.3	4269.9	4310.6	4341.6	4362.8	4391.5	4411.2	4425.9
RHO, G/CC	6.8489-5	1.3540-4	2.0179-4	2.6785-4	3.9932-4	5.3020-4	7.9077-4	1.3089-3	1.9533-3	2.5952-3	3.8744-3	5.1493-3	6.4211-3
M, MOL WT	28.151	28.229	28.274	28.305	28.347	28.376	28.416	28.465	28.502	28.527	28.561	28.585	28.602
CP, CAL/(G)(K)	0.7999	0.7473	0.7189	0.6998	0.6741	0.6567	0.6335	0.6063	0.5861	0.5726	0.5545	0.5424	0.5334
GAMMA (S)	1.1450	1.1503	1.1535	1.1558	1.1590	1.1614	1.1647	1.1689	1.1723	1.1747	1.1781	1.1805	1.1823
SON VEL, M/SEC	920.3	927.8	932.1	935.1	939.3	942.2	946.3	951.2	955.1	957.7	961.4	963.9	965.8

MOLE FRACTIONS

AR	0.00848	0.00851	0.00852	0.00853	0.00854	0.00855	0.00856	0.00858	0.00859	0.00860	0.00861	0.00861	0.00862
CO	0.03777	0.03501	0.03337	0.03220	0.03054	0.02936	0.02771	0.02555	0.02404	0.02292	0.02138	0.02031	0.01950
CO2	0.09158	0.09469	0.09654	0.09786	0.09971	0.10102	0.10286	0.10514	0.10692	0.10815	0.10985	0.11103	0.11192
H	0.00309	0.00242	0.00208	0.00187	0.00160	0.00142	0.00121	0.00097	0.00082	0.00072	0.00060	0.00052	0.00047
H02	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00734	0.00659	0.00616	0.00587	0.00546	0.00519	0.00481	0.00436	0.00402	0.00379	0.00348	0.00327	0.00312
H20	0.10926	0.11107	0.11208	0.11277	0.11373	0.11438	0.11527	0.11634	0.11714	0.11768	0.11841	0.11890	0.11927
NO	0.00642	0.00651	0.00654	0.00655	0.00654	0.00652	0.00648	0.00640	0.00631	0.00623	0.00611	0.00601	0.00593
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001
N2	0.70726	0.70920	0.71030	0.71108	0.71215	0.71290	0.71394	0.71521	0.71618	0.71685	0.71778	0.71841	0.71890
O	0.00266	0.00214	0.00186	0.00169	0.00146	0.00131	0.00112	0.00091	0.00077	0.00068	0.00057	0.00050	0.00045
OH	0.00980	0.00906	0.00861	0.00829	0.00783	0.00751	0.00705	0.00648	0.00603	0.00573	0.00530	0.00500	0.00478
O2	0.01633	0.01481	0.01393	0.01330	0.01244	0.01183	0.01099	0.00996	0.00918	0.00864	0.00790	0.00740	0.00703

C	1.000000	H	1.906699	0.000000	0.000000	0.000000	0.000000	100.00000000	-5059.80	L	298.150	F	0.80700
AR	1.000000		0.000000	0.000000	0.000000	00	0.000000	0.01285800	0.00	G	1150.000	0	0.00000
C	1.000000	O	2.000000	0.000000	0.000000	00	0.000000	0.00045600	0.00	G	1150.000	0	0.00000
N	2.000000		0.000000	0.000000	0.000000	00	0.000000	0.75525296	0.00	G	1150.000	0	0.00000
O	2.000000		0.000000	0.000000	0.000000	00	0.000000	0.23143297	0.00	G	1150.000	0	0.00000

CASE=	7	O/F=	146.3400	F/A=	0.00682	PERCENT FUEL=	0.6778	PHI=	0.1000				
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1380.7	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8	1380.8
T, DEG F	2025.6	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7	2025.7
RHO, G/CC	1.2783-4	2.5566-4	3.8349-4	5.1132-4	7.6697-4	1.0226-3	1.5339-3	2.5566-3	3.8349-3	5.1132-3	7.6698-3	1.0226-2	1.2783-2
M, MOL WT	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.967	28.967
CP, CAL/(G)(K)	0.2926	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925	0.2925
GAMMA (S)	1.3063	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064	1.3064
SON VEL, M/SEC	719.5	719.6	719.6	719.6	719.6	719.6	719.6	719.6	719.6	719.6	719.6	719.6	719.6

MOLE FRACTIONS

AR	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926
CO2	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439
H2O	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343
NO	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066	0.00066
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531	0.77531
OH	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
O2	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693	0.18693

CASE=	7	O/F=	73.2700	F/A=	0.01365	PERCENT FUEL=	1.3464	PHI=	0.2000				
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1596.1	1596.2	1596.2	1596.2	1596.3	1596.3	1596.3	1596.3	1596.4	1596.4	1596.4	1596.4	1596.4
T, DEG F	2413.2	2413.4	2413.5	2413.5	2413.6	2413.7	2413.7	2413.7	2413.7	2413.8	2413.8	2413.8	2413.8
RHO, G/CC	1.1059-4	2.2117-4	3.3174-4	4.4231-4	6.6346-4	8.8460-4	1.3269-3	2.2114-3	3.3171-3	4.4228-3	6.6342-3	8.8456-3	1.1057-2
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968
CP, CAL/(G)(K)	0.3062	0.3060	0.3059	0.3058	0.3057	0.3056	0.3055	0.3055	0.3054	0.3054	0.3053	0.3053	0.3053
GAMMA (S)	1.2890	1.2892	1.2893	1.2894	1.2895	1.2896	1.2896	1.2897	1.2898	1.2898	1.2898	1.2898	1.2898
SON VEL, M/SEC	768.5	768.5	768.6	768.6	768.6	768.7	768.7	768.7	768.7	768.7	768.8	768.8	768.8

MOLE FRACTIONS

AR	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920
CO2	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829
H2O	0.02664	0.02664	0.02665	0.02665	0.02666	0.02666	0.02666	0.02666	0.02667	0.02667	0.02667	0.02667	0.02667
NO	0.00179	0.00179	0.00179	0.00179	0.00179	0.00179	0.00179	0.00179	0.00179	0.00179	0.00180	0.00180	0.00180
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004
N2	0.76955	0.76955	0.76956	0.76956	0.76956	0.76956	0.76956	0.76956	0.76956	0.76956	0.76956	0.76956	0.76956
O	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00010	0.00009	0.00008	0.00007	0.00007	0.00006	0.00005	0.00005	0.00004	0.00004	0.00004	0.00003	0.00003
O2	0.16442	0.16442	0.16442	0.16442	0.16443	0.16443	0.16442	0.16442	0.16442	0.16442	0.16441	0.16441	0.16441

CASE=	1	0/F=	48.8467	F/A=	0.02047	PERCENT FUEL=	2.0062	PHI=	0.3000											
P. ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P. PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T. DEG K		1044.1	1044.1	1044.1	1044.0	1044.0	1044.0	1044.0	1044.0	1044.0	1044.0	1044.0	1044.0	1044.0						
T. DEG F		1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6	1419.6						
RHO		1.6907-4	3.3315-4	5.0722-4	6.7630-4	1.0144-3	1.3526-3	2.0289-3	3.3815-3	5.0722-3	6.7630-3	1.0145-2	1.3526-2	1.6908-2						
M. MOL WT		28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970						
CP, CAL/(G*IK)		0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841	0.2841						
GAMMA (S)		1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3183	1.3182						
SON VEL,M/SEC		628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5						

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914						
CO2	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201						
H2O	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977						
NO	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005						
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001						
N2	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534	0.76534						
O2	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14370	0.14369	0.14369						

CASE=	1	0/F=	36.6350	F/A=	0.02730	PERCENT FUEL=	2.6571	PHI=	0.4000											
P. ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P. PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T. DEG K		1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6	1268.6						
T. DEG F		1823.8	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9	1823.9						
RHO		1.3915-4	2.7830-4	4.1745-4	5.5660-4	8.3490-4	1.1132-3	1.6698-3	2.7830-3	4.1745-3	5.5660-3	8.3490-3	1.1132-2	1.3915-2						
M. MOL WT		28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971						
CP, CAL/(G*IK)		0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976	0.2976						
GAMMA (S)		1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995	1.2995						
SON VEL,M/SEC		687.8	687.8	687.8	687.8	687.8	687.9	687.9	687.9	687.9	687.9	687.8	687.8	687.8						

MOLE FRACTIONS

AR	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908						
CO2	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554						
H2O	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267						
NO	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026						
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019	0.76019						
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
O2	0.12225	0.12225	0.12225	0.12224	0.12224	0.12224	0.12224	0.12224	0.12224	0.12224	0.12224	0.12224	0.12224	0.12223						

CASE=	2	O/F=	13.9562	F/A=	0.07165	PERCENT FUEL=	6.6862	PHI=	1.0500										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2312.0	2334.2	2346.2	2354.2	2364.9	2372.0	2381.2	2391.6	2398.9	2403.5	2409.2	2412.9	2415.4						
T, DEG F	3701.9	3741.8	3763.4	3777.9	3797.1	3809.8	3826.5	3845.2	3858.2	3866.5	3876.9	3883.4	3888.0						
RHO, G/CC	7.4960-5	1.4874-4	2.2217-4	2.9538-4	4.4142-4	5.8711-4	8.7785-4	1.4578-3	2.1813-3	2.9037-3	4.3469-3	5.7887-3	7.2296-3						
M, MOL WT	28.442	28.489	28.514	28.531	28.554	28.568	28.588	28.609	28.624	28.634	28.645	28.653	28.658						
CP, CAL/(G)(K)	0.6016	0.5614	0.5396	0.5248	0.5049	0.4915	0.4736	0.4528	0.4376	0.4277	0.4149	0.4067	0.4008						
GAMMA (S)	1.1663	1.1739	1.1785	1.1819	1.1868	1.1903	1.1953	1.2018	1.2069	1.2105	1.2154	1.2188	1.2213						
SON VEL, M/SEC	887.8	894.2	897.9	900.5	904.0	906.5	909.9	914.0	917.0	919.1	921.9	923.8	925.1						

MOLE FRACTIONS

AR	0.00854	0.00856	0.00856	0.00857	0.00858	0.00858	0.00859	0.00859	0.00860	0.00860	0.00860	0.00861	0.00861	0.00861	0.00861	0.00861	0.00861	0.00861	0.00861
CO	0.02762	0.02569	0.02462	0.02290	0.02293	0.02228	0.02144	0.02048	0.01981	0.01939	0.01886	0.01853	0.01831						
CO2	0.10914	0.11130	0.11249	0.11330	0.11437	0.11509	0.11603	0.11709	0.11783	0.11830	0.11888	0.11925	0.11950						
H	0.00108	0.00081	0.00069	0.00061	0.00051	0.00045	0.00037	0.00030	0.00024	0.00021	0.00018	0.00015	0.00014						
H2	0.00553	0.00503	0.00476	0.00458	0.00435	0.00420	0.00400	0.00379	0.00364	0.00354	0.00343	0.00336	0.00331						
H2O	0.12206	0.12319	0.12379	0.12419	0.12472	0.12507	0.12553	0.12600	0.12640	0.12663	0.12692	0.12710	0.12722						
NO	0.00243	0.00226	0.00215	0.00206	0.00192	0.00182	0.00168	0.00149	0.00134	0.00123	0.00109	0.00099	0.00091						
N2	0.71432	0.71559	0.71628	0.71675	0.71738	0.71781	0.71836	0.71900	0.71945	0.71975	0.72011	0.72035	0.72051						
O	0.00052	0.00037	0.00030	0.00025	0.00020	0.00017	0.00013	0.00009	0.00007	0.00006	0.00004	0.00003	0.00003						
OH	0.00398	0.00343	0.00312	0.00291	0.00262	0.00242	0.00215	0.00183	0.00160	0.00144	0.00124	0.00111	0.00102						
O2	0.00478	0.00377	0.00324	0.00288	0.00241	0.00211	0.00172	0.00130	0.00102	0.00085	0.00065	0.00053	0.00045						

CASE=	2	O/F=	13.3218	F/A=	0.07506	PERCENT FUEL=	6.9824	PHI=	1.1000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2310.5	2329.1	2338.6	2344.7	2352.4	2357.3	2363.2	2369.5	2373.5	2375.9	2378.8	2380.5	2381.7						
T, DEG F	3699.1	3732.7	3749.8	3760.8	3774.7	3783.4	3794.1	3805.3	3812.6	3816.9	3822.1	3825.2	3827.3						
RHO, G/CC	7.4538-5	1.4809-4	2.2138-4	2.9454-4	4.4061-4	5.8648-4	8.7787-4	1.4599-3	2.1868-3	2.9132-3	4.3654-3	5.8171-3	7.2684-3						
M, MOL WT	28.263	28.302	28.322	28.335	28.350	28.360	28.373	28.385	28.393	28.398	28.404	28.407	28.410						
CP, CAL/(G)(K)	0.5507	0.5062	0.4828	0.4676	0.4480	0.4355	0.4199	0.4036	0.3930	0.3867	0.3791	0.3747	0.3717						
GAMMA (S)	1.1773	1.1878	1.1942	1.1988	1.2052	1.2096	1.2155	1.2223	1.2271	1.2301	1.2338	1.2361	1.2377						
SON VEL, M/SEC	894.5	901.5	905.5	908.2	911.8	914.3	917.5	921.1	923.5	925.0	926.9	928.0	928.8						

MOLE FRACTIONS

AR	0.00846	0.00847	0.00848	0.00848	0.00849	0.00849	0.00849	0.00850	0.00850	0.00850	0.00850	0.00851	0.00851	0.00851	0.00851	0.00851	0.00851	0.00851	0.00851
CO	0.03764	0.03625	0.03554	0.03508	0.03451	0.03415	0.03372	0.03327	0.03299	0.03282	0.03263	0.03251	0.03244						
CO2	0.10428	0.10586	0.10667	0.10719	0.10784	0.10825	0.10874	0.10925	0.10958	0.10977	0.10999	0.11012	0.11021						
H	0.00129	0.00098	0.00082	0.00073	0.00061	0.00054	0.00045	0.00036	0.00029	0.00026	0.00021	0.00018	0.00017						
H2	0.00806	0.00763	0.00742	0.00729	0.00712	0.00702	0.00690	0.00677	0.00669	0.00665	0.00659	0.00656	0.00654						
H2O	0.12466	0.12572	0.12626	0.12661	0.12706	0.12734	0.12769	0.12806	0.12830	0.12845	0.12863	0.12873	0.12881						
NO	0.00168	0.00146	0.00132	0.00122	0.00109	0.00099	0.00086	0.00072	0.00061	0.00054	0.00046	0.00040	0.00036						
N2	0.70794	0.70903	0.70960	0.70996	0.71043	0.71073	0.71110	0.71149	0.71174	0.71190	0.71209	0.71220	0.71228						
O	0.00036	0.00023	0.00018	0.00015	0.00011	0.00009	0.00006	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001						
OH	0.00333	0.00275	0.00243	0.00222	0.00193	0.00174	0.00149	0.00121	0.00102	0.00090	0.00076	0.00066	0.00060						
O2	0.00231	0.00161	0.00127	0.00107	0.00082	0.00067	0.00049	0.00033	0.00024	0.00019	0.00013	0.00010	0.00008						

CASE=	4	0/F=	48.8467	F/A=	0.02047	PERCENT FUEL=	2.0062	PHI=	0.3000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1499.0	1499.1	1499.1	1499.1	1499.1	1499.1	1499.1	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2						
T, DEG F	2238.6	2238.6	2238.7	2238.7	2238.7	2238.7	2238.8	2238.8	2238.8	2238.8	2238.8	2238.8	2238.8						
RHO, G/CC	1.1776-4	2.3551-4	3.5325-4	4.7100-4	7.0649-4	9.4199-4	1.4110-3	2.3549-3	3.5324-3	4.7098-3	7.0648-3	9.4197-3	1.1775-2						
M, MOL WT	28.969	28.969	28.969	28.969	28.969	28.969	28.969	28.970	28.970	28.970	28.970	28.970	28.970						
CP, CAL/(G)(K)	0.3049	0.3049	0.3047	0.3047	0.3046	0.3046	0.3046	0.3045	0.3045	0.3045	0.3044	0.3044	0.3044						
GAMMA (S)	1.2904	1.2906	1.2906	1.2907	1.2907	1.2907	1.2908	1.2908	1.2908	1.2908	1.2909	1.2909	1.2909						
SON VEL, M/SEC	745.1	745.2	745.2	745.2	745.2	745.2	745.2	745.2	745.3	745.3	745.3	745.3	745.3						

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914						
CO2	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201						
H2O	0.03974	0.03974	0.03975	0.03975	0.03975	0.03975	0.03975	0.03975	0.03975	0.03976	0.03976	0.03976	0.03976						
NO	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107						
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00002						
N2	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482	0.76482						
OH	0.00005	0.00005	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002						
O2	0.14317	0.14317	0.14317	0.14317	0.14317	0.14317	0.14317	0.14317	0.14317	0.14316	0.14316	0.14316	0.14316						

CASE=	4	0/F=	36.6350	F/A=	0.02730	PERCENT FUEL=	2.6571	PHI=	0.4000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1701.0	1701.2	1701.4	1701.5	1701.6	1701.6	1701.7	1701.8	1701.9	1701.9	1702.0	1702.0	1702.0						
T, DEG F	2602.0	2602.5	2602.8	2602.9	2603.1	2603.2	2603.4	2603.5	2603.7	2603.7	2603.8	2603.9	2603.9						
RHO, G/CC	1.0377-4	2.0752-4	3.1125-4	4.1499-4	6.2245-4	8.2991-4	1.2448-3	2.0746-3	3.1118-3	4.1490-3	6.2233-3	8.2976-3	1.0372-2						
M, MOL WT	28.969	28.969	28.969	28.970	28.970	28.970	28.970	28.970	28.971	28.971	28.971	28.971	28.971						
CP, CAL/(G)(K)	0.3194	0.3187	0.3184	0.3182	0.3179	0.3177	0.3175	0.3173	0.3172	0.3171	0.3169	0.3169	0.3168						
GAMMA (S)	1.2743	1.2749	1.2752	1.2753	1.2756	1.2757	1.2759	1.2761	1.2762	1.2764	1.2764	1.2764	1.2765						
SON VEL, M/SEC	788.7	789.0	789.1	789.2	789.3	789.3	789.4	789.5	789.5	789.5	789.6	789.6	789.6						

MOLE FRACTIONS

AR	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908						
CO	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
CO2	0.05552	0.05553	0.05553	0.05553	0.05553	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554						
H2O	0.05252	0.05255	0.05256	0.05257	0.05258	0.05258	0.05259	0.05260	0.05261	0.05261	0.05262	0.05262	0.05263						
NO	0.00233	0.00233	0.00233	0.00233	0.00233	0.00233	0.00233	0.00233	0.00234	0.00234	0.00234	0.00234	0.00234						
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00003						
N2	0.75909	0.75910	0.75911	0.75911	0.75912	0.75912	0.75912	0.75913	0.75913	0.75913	0.75913	0.75913	0.75913						
O	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00026	0.00024	0.00021	0.00020	0.00018	0.00017	0.00015	0.00013	0.00012	0.00011	0.00010	0.00009	0.00009						
O2	0.12113	0.12114	0.12115	0.12115	0.12115	0.12116	0.12116	0.12116	0.12116	0.12116	0.12116	0.12116	0.12116						

CASE=	5	O/F=	13.9562	F/A=	0.07165	PERCENT FUEL=	6.6862	PHI=	1.0500										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2516.5	2553.4	2574.3	2588.9	2608.8	2622.6	2641.4	2664.2	2681.4	2693.4	2708.9	2719.6	2727.6						
T, DEG F	4070.1	4136.5	4174.1	4200.2	4236.1	4260.9	4294.9	4335.8	4366.8	4387.9	4416.4	4435.6	4450.0						
RHO, G/CC	6.7815-5	1.3405-4	1.9976-4	2.6514-4	3.9527-4	5.2480-4	7.8270-4	1.2956-3	1.9334-3	2.5688-3	3.8352-3	5.0976-3	6.3570-3						
M, MOL WT	28.008	28.087	28.132	28.163	28.205	28.235	28.275	28.323	28.359	28.384	28.417	28.440	28.457						
CP, CAL/(G)(K)	0.8105	0.7555	0.7256	0.7054	0.6782	0.6598	0.6351	0.6059	0.5841	0.5694	0.5496	0.5362	0.5262						
GAMMA (S)	1.1447	1.1502	1.1535	1.1558	1.1592	1.1617	1.1652	1.1698	1.1734	1.1761	1.1799	1.1826	1.1847						
SON VEL, M/SEC	924.8	932.4	936.8	939.9	944.2	947.2	951.4	956.5	960.5	963.2	967.0	969.7	971.7						

MOLE FRACTIONS

AR	0.00841	0.00844	0.00845	0.00846	0.00847	0.00848	0.00849	0.00851	0.00852	0.00853	0.00854	0.00854	0.00855						
CO	0.04530	0.04268	0.04112	0.04090	0.03843	0.03731	0.03575	0.03381	0.03230	0.03126	0.02984	0.02886	0.02812						
CO2	0.08938	0.09237	0.09415	0.09542	0.09720	0.09846	0.10021	0.10239	0.10407	0.10523	0.10681	0.10790	0.10871						
H	0.00365	0.00289	0.00250	0.00226	0.00194	0.00174	0.00149	0.00121	0.00102	0.00091	0.00076	0.00067	0.00061						
H02	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001						
H2	0.00922	0.00842	0.00797	0.00765	0.00722	0.00693	0.00653	0.00605	0.00569	0.00545	0.00513	0.00491	0.00475						
H20	0.11229	0.11423	0.11531	0.11606	0.11709	0.11779	0.11875	0.11989	0.12074	0.12132	0.12210	0.12262	0.12300						
NO	0.00566	0.00566	0.00562	0.00558	0.00551	0.00544	0.00532	0.00514	0.00496	0.00482	0.00461	0.00444	0.00431						
N2	0.70178	0.70377	0.70492	0.70572	0.70683	0.70760	0.70867	0.70998	0.71098	0.71167	0.71261	0.71326	0.71375						
O	0.00245	0.00194	0.00167	0.00150	0.00128	0.00114	0.00096	0.00077	0.00063	0.00055	0.00045	0.00039	0.00034						
OH	0.00959	0.00881	0.00834	0.00800	0.00751	0.00717	0.00668	0.00607	0.00560	0.00526	0.00481	0.00449	0.00425						
O2	0.01227	0.01079	0.00994	0.00934	0.00851	0.00794	0.00715	0.00620	0.00548	0.00499	0.00435	0.00391	0.00359						

CASE=	5	O/F=	13.3218	F/A=	0.07506	PERCENT FUEL=	6.9824	PHI=	1.1000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2523.3	2559.9	2580.4	2594.6	2614.0	2627.2	2645.2	2666.6	2682.4	2692.9	2706.9	2716.1	2722.8						
T, DEG F	4082.3	4148.0	4185.1	4210.6	4245.5	4269.3	4301.7	4340.1	4368.5	4387.6	4412.7	4429.3	4441.4						
RHO, G/CC	6.7265-5	1.3298-4	1.9819-4	2.6309-4	3.9229-4	5.2093-4	7.7712-4	1.2869-3	1.9212-3	2.5535-3	3.8144-3	5.0721-3	6.3275-3						
M, MOL WT	27.855	27.933	27.977	28.007	28.048	28.076	28.114	28.158	28.191	28.213	28.242	28.264	28.274						
CP, CAL/(G)(K)	0.8008	0.7418	0.7096	0.6877	0.6580	0.6378	0.6105	0.5780	0.5537	0.5373	0.5152	0.5005	0.4895						
GAMMA (S)	1.1463	1.1524	1.1561	1.1588	1.1628	1.1657	1.1699	1.1755	1.1801	1.1835	1.1884	1.1920	1.1947						
SON VEL, M/SEC	929.2	937.0	941.6	944.8	949.2	952.3	956.7	962.1	966.2	969.2	973.2	976.0	978.1						

MOLE FRACTIONS

AR	0.00834	0.00836	0.00838	0.00839	0.00840	0.00841	0.00842	0.00843	0.00844	0.00845	0.00846	0.00846	0.00847						
CO	0.05333	0.05097	0.04957	0.04858	0.04719	0.04621	0.04486	0.04322	0.04198	0.04114	0.04002	0.03928	0.03874						
CO2	0.08653	0.08928	0.09090	0.09205	0.09364	0.09476	0.09630	0.09816	0.09957	0.10052	0.10178	0.10262	0.10323						
H	0.00419	0.00333	0.00290	0.00262	0.00226	0.00203	0.00174	0.00143	0.00121	0.00108	0.00091	0.00081	0.00073						
H2	0.01145	0.01063	0.01017	0.00985	0.00941	0.00912	0.00872	0.00826	0.00792	0.00769	0.00740	0.00721	0.00707						
H20	0.11496	0.11700	0.11814	0.11893	0.11999	0.12072	0.12170	0.12286	0.12372	0.12429	0.12505	0.12554	0.12591						
NO	0.00486	0.00476	0.00467	0.00459	0.00445	0.00434	0.00416	0.00389	0.00366	0.00348	0.00322	0.00303	0.00288						
N2	0.69613	0.69813	0.69927	0.70006	0.70116	0.70191	0.70295	0.70420	0.70514	0.70578	0.70664	0.70721	0.70763						
O	0.00215	0.00167	0.00142	0.00126	0.00106	0.00093	0.00076	0.00059	0.00047	0.00040	0.00031	0.00026	0.00023						
OH	0.00915	0.00931	0.00781	0.00744	0.00692	0.00656	0.00603	0.00539	0.00488	0.00454	0.00406	0.00373	0.00349						
O2	0.00890	0.00754	0.00677	0.00624	0.00551	0.00501	0.00434	0.00356	0.00300	0.00263	0.00215	0.00185	0.00164						

CASE= 7 O/F= 48.8467 F/A= 0.02047 PERCENT FUEL= 2.0062 PHI= 0.3000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1796.2	1796.8	1797.0	1797.2	1797.4	1797.5	1797.6	1797.8	1797.9	1798.0	1798.1	1798.1	1798.2
T, DEG F	2773.5	2774.5	2774.9	2775.2	2775.5	2775.8	2776.0	2776.3	2776.5	2776.7	2776.8	2776.9	2777.0
RHO, G/CC	9.8256-5	1.9646-4	2.9466-4	3.9285-4	5.8922-4	7.8558-4	1.1783-3	1.9636-3	2.9453-3	3.9269-3	5.8902-3	7.8534-3	9.8165-3
M, MOL WT	28.965	28.966	28.966	28.967	28.967	28.967	28.968	28.968	28.968	28.968	28.968	28.969	28.969
CP, CAL/(G)(K)	0.3225	0.3213	0.3207	0.3203	0.3199	0.3196	0.3192	0.3189	0.3186	0.3185	0.3183	0.3181	0.3180
GAMMA (S)	1.2717	1.2726	1.2731	1.2734	1.2738	1.2740	1.2743	1.2746	1.2748	1.2749	1.2751	1.2752	1.2753
SON VEL, M/SEC	809.7	810.2	810.4	810.5	810.6	810.7	810.9	811.0	811.1	811.1	811.2	811.2	811.3

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.04197	0.04198	0.04198	0.04199	0.04199	0.04199	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.03952	0.03956	0.03958	0.03959	0.03961	0.03962	0.03963	0.03965	0.03966	0.03966	0.03967	0.03968	0.03969
NO	0.00355	0.00355	0.00356	0.00356	0.00356	0.00356	0.00356	0.00357	0.00357	0.00357	0.00357	0.00357	0.00357
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004	0.00005
N2	0.76346	0.76348	0.76349	0.76350	0.76351	0.76351	0.76352	0.76353	0.76353	0.76354	0.76354	0.76354	0.76354
O	0.00006	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
OH	0.00047	0.00039	0.00036	0.00033	0.00030	0.00028	0.00025	0.00022	0.00020	0.00019	0.00017	0.00016	0.00015
O2	0.14179	0.14182	0.14183	0.14183	0.14184	0.14184	0.14185	0.14185	0.14185	0.14185	0.14185	0.14185	0.14185

CASE= 7 O/F= 36.6350 F/A= 0.02730 PERCENT FUEL= 2.6571 PHI= 0.4000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1980.0	1982.0	1983.0	1983.6	1984.3	1984.8	1985.4	1986.0	1986.4	1986.7	1987.0	1987.2	1987.4
T, DEG F	3104.3	3107.9	3109.6	3110.7	3112.1	3112.9	3114.0	3115.1	3115.9	3116.4	3117.0	3117.3	3117.6
RHO, G/CC	8.9100-5	1.7804-4	2.6695-4	3.5585-4	5.3360-4	7.1132-4	1.0667-3	1.7774-3	2.6655-3	3.5537-3	5.3297-3	7.1056-3	8.8815-3
M, MOL WT	28.952	28.957	28.958	28.960	28.961	28.962	28.963	28.965	28.966	28.966	28.967	28.967	28.968
CP, CAL/(G)(K)	0.3468	0.3424	0.3403	0.3390	0.3375	0.3365	0.3353	0.3340	0.3331	0.3326	0.3319	0.3315	0.3312
GAMMA (S)	1.2516	1.2544	1.2558	1.2567	1.2578	1.2584	1.2593	1.2602	1.2608	1.2612	1.2616	1.2619	1.2622
SON VEL, M/SEC	843.6	844.9	845.6	846.0	846.5	846.8	847.2	847.6	847.9	848.1	848.3	848.4	848.5

MOLE FRACTIONS

AR	0.00907	0.00907	0.00907	0.00907	0.00907	0.00907	0.00907	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908
CO	0.00025	0.00018	0.00015	0.00013	0.00011	0.00009	0.00008	0.00006	0.00005	0.00004	0.00003	0.00003	0.00003
CO2	0.05526	0.05533	0.05537	0.05539	0.05542	0.05543	0.05545	0.05547	0.05548	0.05549	0.05550	0.05551	0.05551
H	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001
H2	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2O	0.05188	0.05201	0.05207	0.05211	0.05217	0.05220	0.05225	0.05230	0.05234	0.05236	0.05239	0.05241	0.05243
NO	0.00568	0.00571	0.00573	0.00574	0.00575	0.00576	0.00577	0.00578	0.00579	0.00580	0.00580	0.00580	0.00580
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00005	0.00005
N2	0.75699	0.75708	0.75712	0.75715	0.75718	0.75720	0.75722	0.75725	0.75727	0.75728	0.75729	0.75730	0.75731
O	0.00028	0.00020	0.00016	0.00014	0.00012	0.00010	0.00008	0.00007	0.00005	0.00005	0.00004	0.00003	0.00003
OH	0.00141	0.00120	0.00109	0.00101	0.00092	0.00086	0.00078	0.00069	0.00062	0.00058	0.00053	0.00049	0.00046
O2	0.11912	0.11917	0.11919	0.11921	0.11923	0.11924	0.11925	0.11927	0.11928	0.11929	0.11929	0.11929	0.11930

CASE= 2 O/F= 12.7426 F/A= 0.07848 PERCENT FUEL= 7.2766 PHI= 1.1500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2294.6	2308.2	2314.7	2318.7	2323.6	2326.6	2330.2	2333.7	2336.0	2337.4	2339.0	2339.9	2340.6
T, DEG F	3670.5	3695.1	3706.8	3714.0	3722.8	3728.2	3734.6	3741.0	3745.1	3747.6	3750.4	3752.1	3753.3
RHO, G/CC	7.4508-5	1.4329-4	2.2191-4	2.9545-4	4.4240-4	5.8924-4	8.8274-4	1.4694-3	2.2022-3	2.9349-3	4.3999-3	5.8645-3	7.3289-3
M, MOL WT	28.058	28.086	28.099	28.108	28.118	28.124	28.131	28.138	28.143	28.145	28.149	28.150	28.152
CP, CAL/(G)(K)	0.4870	0.4492	0.4311	0.4199	0.4065	0.3984	0.3889	0.3793	0.3734	0.3699	0.3659	0.3635	0.3619
GAMMA (S)	1.1947	1.2067	1.2133	1.2176	1.2233	1.2269	1.2314	1.2361	1.2392	1.2411	1.2434	1.2447	1.2456
SON VEL./M/SEC	901.3	908.0	911.6	913.9	916.8	918.6	920.9	923.3	924.8	925.7	926.8	927.5	927.9

MOLE FRACTIONS

AR	0.00837	0.00838	0.00839	0.00839	0.00839	0.00839	0.00840	0.00840	0.00840	0.00840	0.00840	0.00840	0.00840
CO	0.04888	0.04811	0.04774	0.04753	0.04727	0.04711	0.04693	0.04676	0.04665	0.04659	0.04651	0.04647	0.04644
CO2	0.09793	0.09885	0.09928	0.09954	0.09985	0.10004	0.10026	0.10047	0.10060	0.10068	0.10077	0.10082	0.10085
H	0.00141	0.00106	0.00089	0.00078	0.00065	0.00057	0.00047	0.00037	0.00031	0.00027	0.00022	0.00019	0.00017
H2	0.01139	0.01110	0.01097	0.01089	0.01073	0.01074	0.01067	0.01061	0.01057	0.01055	0.01053	0.01051	0.01050
H2O	0.12632	0.12720	0.12763	0.12789	0.12822	0.12842	0.12866	0.12891	0.12907	0.12917	0.12928	0.12935	0.12940
NO	0.00106	0.00086	0.00075	0.00068	0.00058	0.00052	0.00044	0.00035	0.00029	0.00026	0.00021	0.00019	0.00017
N2	0.70088	0.70168	0.70207	0.70231	0.70261	0.70279	0.70301	0.70324	0.70338	0.70347	0.70357	0.70363	0.70367
O	0.00021	0.00013	0.00009	0.00007	0.00005	0.00004	0.00003	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000
OH	0.00256	0.00202	0.00174	0.00155	0.00132	0.00117	0.00098	0.00078	0.00065	0.00057	0.00047	0.00041	0.00037
O2	0.00099	0.00062	0.00046	0.00037	0.00026	0.00021	0.00015	0.00009	0.00006	0.00005	0.00003	0.00003	0.00002

CASE= 2 O/F= 12.2117 F/A= 0.08189 PERCENT FUEL= 7.5691 PHI= 1.2000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2268.0	2277.4	2281.7	2284.3	2287.3	2289.3	2291.6	2293.8	2295.2	2296.1	2297.1	2297.7	2298.1
T, DEG F	3622.7	3639.6	3647.4	3652.1	3657.7	3661.1	3665.1	3669.2	3671.7	3673.2	3675.0	3676.1	3676.9
RHO, G/CC	7.4780-5	1.4905-4	2.2322-4	2.9735-4	4.4551-4	5.9361-4	8.8969-4	1.4816-3	2.2213-3	2.9608-3	4.4396-3	5.9181-3	7.3966-3
M, MOL WT	27.834	27.854	27.862	27.868	27.874	27.878	27.883	27.887	27.890	27.892	27.894	27.895	27.896
CP, CAL/(G)(K)	0.4391	0.4126	0.4007	0.3936	0.3852	0.3802	0.3744	0.3687	0.3651	0.3630	0.3605	0.3591	0.3581
GAMMA (S)	1.2123	1.2229	1.2282	1.2315	1.2356	1.2381	1.2412	1.2444	1.2464	1.2476	1.2490	1.2499	1.2505
SON VEL./M/SEC	906.3	911.8	914.5	916.1	918.2	919.4	921.0	922.5	923.5	924.1	924.8	925.2	925.5

MOLE FRACTIONS

AR	0.00828	0.00829	0.00829	0.00829	0.00829	0.00829	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830
CO	0.06063	0.06028	0.06013	0.06005	0.05995	0.05989	0.05982	0.05976	0.05972	0.05970	0.05967	0.05966	0.05965
CO2	0.09085	0.09130	0.09150	0.09161	0.09175	0.09183	0.09192	0.09201	0.09206	0.09209	0.09213	0.09215	0.09217
H	0.00143	0.00106	0.00088	0.00077	0.00064	0.00056	0.00046	0.00036	0.00030	0.00026	0.00021	0.00018	0.00017
H2	0.01554	0.01538	0.01531	0.01526	0.01522	0.01519	0.01516	0.01513	0.01511	0.01510	0.01509	0.01508	0.01508
H2O	0.12698	0.12765	0.12796	0.12816	0.12839	0.12853	0.12870	0.12887	0.12898	0.12904	0.12912	0.12917	0.12920
NO	0.00063	0.00049	0.00041	0.00037	0.00031	0.00027	0.00023	0.00018	0.00015	0.00013	0.00011	0.00009	0.00008
N2	0.69331	0.69386	0.69412	0.69428	0.69447	0.69458	0.69472	0.69486	0.69494	0.69499	0.69506	0.69509	0.69512
O	0.00011	0.00007	0.00005	0.00004	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
OH	0.00185	0.00140	0.00119	0.00105	0.00088	0.00077	0.00064	0.00050	0.00042	0.00036	0.00030	0.00026	0.00023
O2	0.00039	0.00023	0.00016	0.00013	0.00009	0.00007	0.00005	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001

CASE= 4 O/F= 29.3080 F/A= 0.03412 PERCENT FUEL= 3.2995 PHI= 0.5000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1888.2	1889.3	1889.9	1890.3	1890.7	1891.0	1891.3	1891.7	1892.0	1892.1	1892.3	1892.5	1892.6
T, DEG F	2939.0	2941.1	2942.1	2942.8	2943.6	2944.1	2944.7	2945.4	2945.9	2946.2	2946.5	2946.8	2946.9
RHO, G/CC	9.3464-5	1.8683-4	2.8017-4	3.7349-4	5.6012-4	7.4674-4	1.1199-3	1.8662-3	2.7990-3	3.7317-3	5.5971-3	7.4623-3	9.3275-3
M, MOL WT	28.962	28.964	28.965	28.966	28.967	28.967	28.968	28.969	28.970	28.970	28.971	28.971	28.971
CP, CAL/(G)(K)	0.3392	0.3364	0.3351	0.3343	0.3333	0.3326	0.3319	0.3310	0.3305	0.3301	0.3297	0.3294	0.3292
GAMMA (S)	1.2566	1.2586	1.2595	1.2601	1.2608	1.2613	1.2618	1.2624	1.2628	1.2631	1.2634	1.2636	1.2638
SON VEL, M/SEC	825.3	826.2	826.6	826.9	827.2	827.4	827.6	827.9	828.1	828.2	828.3	828.4	828.5

MOLE FRACTIONS

AR	0.00901	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902
CO	0.00015	0.00011	0.00009	0.00008	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002
CO2	0.06873	0.06877	0.06880	0.06881	0.06883	0.06883	0.06885	0.06886	0.06887	0.06887	0.06888	0.06888	0.06888
H	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
H2O	0.06488	0.06497	0.06501	0.06504	0.06508	0.06510	0.06513	0.06517	0.06519	0.06521	0.06523	0.06524	0.06525
NO	0.00395	0.00397	0.00398	0.00398	0.00399	0.00399	0.00399	0.00400	0.00400	0.00400	0.00401	0.00401	0.00401
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00004
N2	0.75308	0.75313	0.75316	0.75318	0.75320	0.75321	0.75322	0.75324	0.75325	0.75326	0.75327	0.75327	0.75327
O	0.00012	0.00009	0.00007	0.00006	0.00005	0.00004	0.00004	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001
OH	0.00093	0.00079	0.00071	0.00067	0.00060	0.00056	0.00051	0.00045	0.00041	0.00038	0.00034	0.00032	0.00030
O2	0.09910	0.09912	0.09914	0.09914	0.09916	0.09916	0.09917	0.09918	0.09919	0.09919	0.09919	0.09919	0.09919

CASE= 4 O/F= 24.4233 F/A= 0.04094 PERCENT FUEL= 3.9334 PHI= 0.6000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2057.3	2061.3	2063.2	2064.4	2065.8	2066.8	2067.9	2069.2	2070.0	2070.5	2071.2	2071.6	2071.9
T, DEG F	3243.4	3250.6	3254.0	3256.1	3258.8	3260.5	3262.6	3264.8	3266.3	3267.2	3268.4	3269.1	3269.7
RHO, G/CC	8.5706-5	1.7113-4	2.5650-4	3.4183-4	5.1242-4	6.8297-4	1.0240-3	1.7057-3	2.5577-3	3.4096-3	5.1130-3	6.8162-3	8.5193-3
M, MOL WT	28.937	28.945	28.949	28.952	28.955	28.957	28.959	28.962	28.963	28.964	28.966	28.967	28.967
CP, CAL/(G)(K)	0.3738	0.3650	0.3608	0.3582	0.3550	0.3531	0.3507	0.3481	0.3464	0.3454	0.3441	0.3433	0.3427
GAMMA (S)	1.2338	1.2386	1.2410	1.2425	1.2443	1.2455	1.2470	1.2486	1.2496	1.2503	1.2511	1.2516	1.2520
SON VEL, M/SEC	854.0	856.4	857.5	858.2	859.2	859.7	860.4	861.2	861.7	862.0	862.4	862.7	862.9

MOLE FRACTIONS

AR	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896
CO	0.00086	0.00063	0.00052	0.00046	0.00038	0.00033	0.00027	0.00021	0.00017	0.00015	0.00012	0.00011	0.00010
CO2	0.08112	0.08138	0.08149	0.08157	0.08165	0.08171	0.08177	0.08184	0.08188	0.08191	0.08194	0.08196	0.08197
H	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00017	0.00012	0.00010	0.00009	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002
H2O	0.07658	0.07681	0.07693	0.07701	0.07711	0.07717	0.07725	0.07734	0.07741	0.07745	0.07750	0.07754	0.07756
NO	0.00559	0.00565	0.00567	0.00569	0.00571	0.00573	0.00574	0.00576	0.00578	0.00578	0.00579	0.00580	0.00580
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00004
N2	0.74667	0.74686	0.74694	0.74700	0.74707	0.74711	0.74716	0.74722	0.74725	0.74728	0.74730	0.74732	0.74734
O	0.00040	0.00029	0.00024	0.00021	0.00017	0.00015	0.00013	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004
OH	0.00222	0.00191	0.00174	0.00163	0.00148	0.00139	0.00126	0.00112	0.00101	0.00094	0.00086	0.00080	0.00076
O2	0.07739	0.07738	0.07737	0.07737	0.07737	0.07738	0.07738	0.07739	0.07740	0.07740	0.07741	0.07741	0.07741

CASE= 5 O/F= 12.7426 F/A= 0.07848 PERCENT FUEL= 7.2766 PHI= 1.1500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2524.8	2559.9	2579.4	2592.7	2610.7	2622.8	2638.9	2657.4	2670.8	2679.5	2690.6	2697.7	2702.7
T, DEG F	4084.9	4148.1	4183.3	4207.2	4239.5	4261.2	4290.2	4323.7	4347.7	4363.3	4383.3	4396.1	4405.2
RHO, G/CC	6.6838-5	1.3219-4	1.9708-4	2.6169-4	3.9036-4	5.1855-4	7.7401-4	1.2828-3	1.9164-3	2.5485-3	3.8101-3	5.0693-3	6.3271-3
M, MOL WT	27.694	27.769	27.810	27.837	27.875	27.900	27.934	27.972	27.999	28.017	28.040	28.054	28.064
CP, CAL/(G)(K)	0.7711	0.7078	0.6731	0.6495	0.6177	0.5961	0.5672	0.5335	0.5089	0.4927	0.4718	0.4583	0.4487
GAMMA (S)	1.1500	1.1571	1.1616	1.1649	1.1698	1.1734	1.1787	1.1856	1.1914	1.1955	1.2012	1.2053	1.2083
SON VEL, M/SEC	933.6	941.7	946.5	949.8	954.4	957.7	962.2	967.8	972.0	975.0	979.0	981.6	983.6

MOLE FRACTIONS

AR	0.00827	0.00829	0.00830	0.00831	0.00832	0.00833	0.00834	0.00835	0.00836	0.00836	0.00837	0.00837	0.00838
CO	0.06181	0.05981	0.05864	0.05782	0.05670	0.05552	0.05487	0.05365	0.05275	0.05217	0.05143	0.05095	0.05061
CO2	0.08309	0.08549	0.08687	0.08763	0.08915	0.09006	0.09128	0.09271	0.09375	0.09442	0.09529	0.09584	0.09623
H	0.00467	0.00373	0.00324	0.00293	0.00253	0.00228	0.00195	0.00160	0.00136	0.00120	0.00101	0.00090	0.00081
H2	0.01408	0.01328	0.01284	0.01254	0.01213	0.01186	0.01150	0.01109	0.01080	0.01061	0.01038	0.01023	0.01013
H2O	0.11723	0.11932	0.12048	0.12127	0.12234	0.12305	0.12401	0.12512	0.12599	0.12644	0.12711	0.12754	0.12785
NO	0.00405	0.00387	0.00373	0.00362	0.00344	0.00330	0.00308	0.00279	0.00254	0.00237	0.00212	0.00194	0.00181
N2	0.69030	0.69224	0.69333	0.69409	0.69512	0.69582	0.69676	0.69786	0.69867	0.69920	0.69989	0.70034	0.70066
O	0.00181	0.00136	0.00114	0.00099	0.00081	0.00070	0.00056	0.00041	0.00032	0.00026	0.00020	0.00016	0.00014
OH	0.00848	0.00759	0.00765	0.00666	0.00612	0.00573	0.00519	0.00453	0.00402	0.00368	0.00322	0.00292	0.00269
O2	0.00621	0.00503	0.00438	0.00394	0.00335	0.00296	0.00246	0.00189	0.00151	0.00127	0.00099	0.00081	0.00070

CASE= 5 O/F= 12.2117 F/A= 0.08189 PERCENT FUEL= 7.5691 PHI= 1.2000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2520.7	2553.5	2571.2	2583.2	2599.0	2609.4	2623.0	2638.2	2648.8	2655.4	2663.8	2668.9	2672.6
T, DEG F	4077.6	4136.5	4168.5	4190.0	4218.5	4237.3	4261.8	4289.1	4308.1	4320.1	4335.1	4344.4	4350.9
RHO, G/CC	6.6535-5	1.3169-4	1.9643-4	2.6093-4	3.8948-4	5.1763-4	7.7320-4	1.2827-3	1.9178-3	2.5519-3	3.8182-3	5.0830-3	6.3468-3
M, MOL WT	27.525	27.593	27.630	27.655	27.688	27.709	27.737	27.768	27.790	27.803	27.820	27.830	27.837
CP, CAL/(G)(K)	0.7252	0.6593	0.6237	0.5997	0.5680	0.5469	0.5194	0.4885	0.4671	0.4536	0.4367	0.4262	0.4189
GAMMA (S)	1.1558	1.1644	1.1699	1.1739	1.1798	1.1841	1.1903	1.1982	1.2044	1.2086	1.2143	1.2181	1.2209
SON VEL, M/SEC	938.1	946.5	951.4	954.8	959.6	962.9	967.4	972.9	977.0	979.7	983.2	985.5	987.2

MOLE FRACTIONS

AR	0.00819	0.00821	0.00822	0.00823	0.00824	0.00824	0.00825	0.00826	0.00827	0.00827	0.00828	0.00828	0.00828
CO	0.07066	0.06908	0.06819	0.06758	0.06676	0.06621	0.06549	0.06468	0.06411	0.06376	0.06332	0.06306	0.06287
CO2	0.07913	0.08108	0.08218	0.08232	0.08392	0.08459	0.08546	0.08644	0.08712	0.08755	0.08807	0.08840	0.08863
H	0.00507	0.00404	0.00351	0.00317	0.00273	0.00245	0.00209	0.00170	0.00144	0.00127	0.00107	0.00094	0.00085
H2	0.01719	0.01646	0.01606	0.01580	0.01545	0.01522	0.01493	0.01461	0.01439	0.01425	0.01409	0.01399	0.01392
H2O	0.11902	0.12109	0.12222	0.12298	0.12400	0.12467	0.12555	0.12655	0.12724	0.12768	0.12824	0.12858	0.12883
NO	0.00326	0.00303	0.00286	0.00273	0.00254	0.00239	0.00218	0.00190	0.00169	0.00154	0.00134	0.00121	0.00111
N2	0.68427	0.68610	0.68711	0.68779	0.68870	0.68931	0.69012	0.69103	0.69167	0.69207	0.69259	0.69292	0.69314
O	0.00145	0.00105	0.00085	0.00073	0.00058	0.00049	0.00038	0.00027	0.00020	0.00016	0.00012	0.00009	0.00008
OH	0.00762	0.00668	0.00613	0.00573	0.00518	0.00479	0.00426	0.00363	0.00316	0.00285	0.00245	0.00219	0.00200
O2	0.00413	0.00318	0.00267	0.00234	0.00191	0.00164	0.00130	0.00095	0.00072	0.00059	0.00043	0.00035	0.00029

CASE= 7 O/F= 29.3080 F/A= 0.03412 PERCENT FUEL= 3.2995 PHI= 0.5000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2142.9	2148.8	2151.6	2153.4	2155.7	2157.1	2158.8	2160.7	2162.0	2162.8	2163.8	2164.4	2164.8
T, DEG F	3397.6	3408.1	3413.2	3416.5	3420.5	3423.0	3426.2	3429.6	3431.8	3433.3	3435.1	3436.2	3437.0
RHO, G/CC	8.2221-5	1.6406-4	2.4582-4	3.2753-4	4.9087-4	6.5413-4	9.8052-4	1.6330-3	2.4483-3	3.2634-3	4.8932-3	6.5227-3	8.1520-3
M, MOL WT	28.916	28.928	28.934	28.938	28.943	28.946	28.949	28.953	28.956	28.957	28.960	28.961	28.962
CP, CAL/(G)(K)	0.3896	0.3774	0.3716	0.3680	0.3635	0.3608	0.3574	0.3538	0.3514	0.3499	0.3481	0.3470	0.3462
GAMMA (S)	1.2263	1.2322	1.2352	1.2371	1.2396	1.2411	1.2430	1.2451	1.2466	1.2474	1.2485	1.2492	1.2497
SON VEL, M/SEC	869.3	872.4	873.9	874.9	876.1	876.9	877.9	879.0	879.7	880.1	880.7	881.0	881.3

MOLE FRACTIONS

AR	0.00900	0.00900	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901
CO	0.00122	0.00090	0.00076	0.00066	0.00055	0.00048	0.00040	0.00031	0.00026	0.00023	0.00019	0.00016	0.00015
CO2	0.06755	0.06789	0.06805	0.06815	0.06828	0.06835	0.06845	0.06854	0.06860	0.06864	0.06868	0.06871	0.06873
H	0.00009	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
H02	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00023	0.00017	0.00014	0.00012	0.00010	0.00009	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00003
H20	0.06345	0.06376	0.06392	0.06403	0.06417	0.06425	0.06437	0.06450	0.06459	0.06464	0.06472	0.06477	0.06480
NO	0.00074	0.00075	0.00079	0.00079	0.00078	0.00080	0.00084	0.00088	0.00088	0.00088	0.00088	0.00088	0.00088
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004	0.00005
N2	0.74999	0.75026	0.75038	0.75046	0.75056	0.75063	0.75070	0.75079	0.75084	0.75087	0.75092	0.75094	0.75096
O	0.00082	0.00060	0.00050	0.00044	0.00036	0.00032	0.00026	0.00021	0.00017	0.00015	0.00012	0.00011	0.00009
OH	0.00313	0.00270	0.00247	0.00232	0.00212	0.00199	0.00181	0.00161	0.00146	0.00136	0.00124	0.00116	0.00110
O2	0.09680	0.09680	0.09681	0.09682	0.09683	0.09684	0.09685	0.09687	0.09688	0.09689	0.09690	0.09691	0.09691

CASE= 7 O/F= 24.4233 F/A= 0.04094 PERCENT FUEL= 3.9334 PHI= 0.6000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2278.7	2291.6	2298.1	2302.3	2307.6	2311.0	2315.2	2319.9	2323.0	2325.0	2327.5	2329.0	2330.1
T, DEG F	3641.9	3665.1	3676.9	3684.4	3694.0	3700.1	3707.7	3716.1	3721.7	3725.3	3729.8	3732.6	3734.5
RHO, G/CC	7.7109-5	1.5350-4	2.2971-4	3.0581-4	4.5784-4	6.0972-4	9.1318-4	1.5194-3	2.2766-3	3.0333-3	4.5460-3	6.0580-3	7.5696-3
M, MOL WT	28.836	28.864	28.878	28.887	28.898	28.905	28.915	28.924	28.931	28.936	28.941	28.944	28.947
CP, CAL/(G)(K)	0.4621	0.4368	0.4243	0.4163	0.4063	0.4000	0.3922	0.3836	0.3780	0.3745	0.3702	0.3675	0.3656
GAMMA (S)	1.1982	1.2065	1.2110	1.2140	1.2180	1.2207	1.2241	1.2279	1.2306	1.2323	1.2345	1.2359	1.2368
SON VEL, M/SEC	887.3	892.4	895.1	896.9	899.3	900.8	902.7	904.9	906.4	907.4	908.5	909.3	909.8

MOLE FRACTIONS

AR	0.00892	0.00892	0.00893	0.00893	0.00894	0.00894	0.00894	0.00894	0.00895	0.00895	0.00895	0.00895	0.00895
CO	0.00400	0.00312	0.00267	0.00238	0.00202	0.00180	0.00151	0.00121	0.00101	0.00089	0.00074	0.00065	0.00058
CO2	0.07769	0.07866	0.07914	0.07945	0.07985	0.08010	0.08041	0.08073	0.08095	0.08109	0.08125	0.08136	0.08143
H	0.00032	0.00021	0.00017	0.00014	0.00011	0.00009	0.00007	0.00005	0.00004	0.00003	0.00002	0.00002	0.00002
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
H2	0.00070	0.00054	0.00046	0.00041	0.00034	0.00030	0.00025	0.00020	0.00017	0.00015	0.00012	0.00011	0.00010
H20	0.07402	0.07462	0.07494	0.07515	0.07542	0.07560	0.07583	0.07609	0.07628	0.07640	0.07656	0.07666	0.07673
NO	0.00921	0.00945	0.00958	0.00965	0.00976	0.00982	0.00991	0.01000	0.01006	0.01010	0.01015	0.01018	0.01020
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004
N2	0.74223	0.74283	0.74314	0.74333	0.74358	0.74373	0.74393	0.74414	0.74428	0.74437	0.74448	0.74454	0.74459
O	0.00170	0.00129	0.00109	0.00097	0.00082	0.00072	0.00060	0.00048	0.00040	0.00035	0.00029	0.00025	0.00023
OH	0.00547	0.00484	0.00449	0.00425	0.00392	0.00370	0.00340	0.00304	0.00279	0.00261	0.00238	0.00223	0.00212
O2	0.07574	0.07551	0.07539	0.07532	0.07524	0.07519	0.07514	0.07508	0.07505	0.07503	0.07501	0.07500	0.07499

CASE= 1 O/F= 20.9343 F/A= 0.04777 PERCENT FUEL= 4.5591 PHI= 0.7000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1857.6	1858.7	1859.3	1859.6	1860.0	1860.3	1860.6	1861.0	1861.2	1861.4	1861.6	1861.7	1861.8
T, DEG F	2884.0	2886.0	2887.0	2887.6	2888.4	2888.8	2889.4	2890.1	2890.5	2890.8	2891.1	2891.3	2891.5
RHO, G/CC	9.5014-5	1.8393-4	2.8482-4	3.7970-4	5.6944-4	7.5915-4	1.1386-3	1.8973-3	2.8456-3	3.7939-3	5.6903-3	7.5867-3	9.4830-3
M, MOL WT	28.966	28.968	28.969	28.970	28.971	28.971	28.972	28.973	28.973	28.973	28.974	28.974	28.974
CP, CAL/(G*IK)	0.3436	0.3407	0.3394	0.3386	0.3375	0.3369	0.3361	0.3353	0.3347	0.3344	0.3340	0.3337	0.3335
GAMMA (S)	1.2524	1.2543	1.2553	1.2559	1.2566	1.2570	1.2576	1.2582	1.2586	1.2588	1.2591	1.2593	1.2595
SON VEL, M/SEC	817.2	818.0	818.4	818.7	819.0	819.2	819.5	819.7	819.9	820.0	820.1	820.2	820.3

MOLE FRACTIONS

AR	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890
CO	0.00020	0.00014	0.00012	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002
CO2	0.09487	0.09493	0.09496	0.09498	0.09500	0.09501	0.09503	0.09504	0.09505	0.09506	0.09507	0.09507	0.09508
H	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00005	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000
H2O	0.08991	0.08999	0.09003	0.09006	0.09009	0.09011	0.09014	0.09017	0.09020	0.09021	0.09023	0.09024	0.09025
NO	0.00275	0.00276	0.00276	0.00276	0.00277	0.00277	0.00277	0.00278	0.00278	0.00278	0.00278	0.00278	0.00278
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
N2	0.74395	0.74400	0.74403	0.74405	0.74407	0.74408	0.74409	0.74411	0.74412	0.74413	0.74413	0.74414	0.74414
O	0.00007	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001
OH	0.00081	0.00068	0.00062	0.00058	0.00052	0.00049	0.00044	0.00039	0.00035	0.00033	0.00030	0.00028	0.00026
O2	0.05850	0.05850	0.05850	0.05851	0.05851	0.05851	0.05852	0.05852	0.05852	0.05853	0.05853	0.05853	0.05853

CASE= 1 J/F= 18.3175 F/A= 0.05459 PERCENT FUEL= 5.1767 PHI= 0.8000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2022.7	2026.8	2028.8	2030.1	2031.6	2032.5	2033.7	2035.0	2035.8	2036.3	2037.0	2037.4	2037.7
T, DEG F	3181.1	3188.6	3192.2	3194.4	3197.2	3198.9	3201.0	3203.3	3204.8	3205.7	3206.9	3207.6	3208.1
RHO, G/CC	8.7180-5	1.7406-4	2.6087-4	3.4764-4	5.2112-4	6.9455-4	1.0413-3	1.7346-3	2.6010-3	3.4672-3	5.1995-3	6.9314-3	8.6633-3
M, MOL WT	28.939	28.948	28.952	28.955	28.958	28.960	28.963	28.965	28.967	28.968	28.969	28.970	28.971
CP, CAL/(G*IK)	0.3811	0.3711	0.3663	0.3634	0.3598	0.3576	0.3549	0.3520	0.3502	0.3490	0.3476	0.3467	0.3461
GAMMA (S)	1.2290	1.2343	1.2369	1.2385	1.2406	1.2419	1.2435	1.2452	1.2463	1.2471	1.2479	1.2485	1.2489
SON VEL, M/SEC	845.1	847.7	848.9	849.7	850.7	851.3	852.0	852.9	853.4	853.7	854.2	854.4	854.6

MOLE FRACTIONS

AR	0.00883	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884
CO	0.00122	0.00089	0.00074	0.00065	0.00054	0.00047	0.00039	0.00030	0.00025	0.00022	0.00018	0.00016	0.00014
CO2	0.10659	0.10695	0.10711	0.10721	0.10734	0.10741	0.10751	0.10760	0.10766	0.10770	0.10774	0.10777	0.10779
H	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00025	0.00018	0.00015	0.00013	0.00011	0.00010	0.00008	0.00006	0.00005	0.00004	0.00004	0.00003	0.00003
H2O	0.10133	0.10156	0.10168	0.10175	0.10185	0.10191	0.10199	0.10208	0.10214	0.10217	0.10222	0.10225	0.10228
N	0.00356	0.00360	0.00361	0.00362	0.00364	0.00364	0.00366	0.00367	0.00367	0.00368	0.00369	0.00369	0.00369
NO2	0.00007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
N2	0.73805	0.73826	0.73835	0.73841	0.73849	0.73854	0.73859	0.73865	0.73869	0.73872	0.73875	0.73877	0.73878
O	0.00022	0.00016	0.00013	0.00011	0.00009	0.00008	0.00007	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002
OH	0.00182	0.00156	0.00142	0.00133	0.00121	0.00114	0.00103	0.00091	0.00083	0.00077	0.00070	0.00065	0.00062
O2	0.03809	0.03798	0.03793	0.03790	0.03787	0.03785	0.03783	0.03782	0.03781	0.03780	0.03779	0.03779	0.03779

CASE=	2	O/F=	10.4671	F/A=	0.09554	PERCENT FUEL=	8.7206	PHI=	1.4000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2123.6	2126.2	2127.4	2128.2	2129.0	2129.5	2130.1	2130.8	2131.2	2131.4	2131.7	2131.8	2132.0						
T, DEG F	3362.8	3367.5	3369.7	3371.0	3372.5	3373.5	3374.6	3375.7	3376.4	3376.8	3377.3	3377.6	3377.8						
RHO, G/CC	7.7203-5	1.5425-4	2.3126-4	3.0826-4	4.6224-4	6.1619-4	9.2407-4	1.5397-3	2.3093-3	3.0787-3	4.6176-3	6.1564-3	7.6952-3						
M, MOL WT	26.906	26.912	26.914	26.916	26.918	26.919	26.920	26.921	26.922	26.923	26.924	26.924	26.924						
CP, CAL/(G)(K)	0.3769	0.3702	0.3673	0.3655	0.3634	0.3622	0.3607	0.3592	0.3582	0.3576	0.3570	0.3566	0.3563						
GAMMA (S)	1.2497	1.2505	1.2552	1.2563	1.2575	1.2583	1.2592	1.2601	1.2607	1.2611	1.2615	1.2618	1.2619						
SON VEL, M/SEC	905.6	907.4	908.3	908.8	909.4	909.7	910.2	910.6	910.9	911.1	911.3	911.4	911.5						

MOLE FRACTIONS

AR	0.00790	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791						
CO	0.10336	0.10342	0.10344	0.10346	0.10348	0.10349	0.10350	0.10352	0.10353	0.10353	0.10354	0.10354	0.10354						
CO2	0.06530	0.06528	0.06527	0.06526	0.06525	0.06525	0.06524	0.06524	0.06524	0.06524	0.06523	0.06523	0.06523						
H	0.00099	0.00071	0.00059	0.00051	0.00042	0.00036	0.00030	0.00023	0.00019	0.00016	0.00013	0.00012	0.00012						
H2	0.03854	0.03856	0.03858	0.03858	0.03859	0.03860	0.03861	0.03861	0.03862	0.03862	0.03862	0.03862	0.03862						
H2O	0.12132	0.12152	0.12161	0.12167	0.12173	0.12177	0.12182	0.12186	0.12189	0.12191	0.12193	0.12194	0.12195						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
NO	0.00007	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.66211	0.66226	0.66232	0.66236	0.66241	0.66244	0.66248	0.66251	0.66253	0.66255	0.66256	0.66257	0.66258						
O	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00040	0.00029	0.00024	0.00021	0.00017	0.00015	0.00012	0.00009	0.00008	0.00007	0.00005	0.00005	0.00004						
O2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						

CASE=	2	O/F=	9.1588	F/A=	0.10919	PERCENT FUEL=	9.8437	PHI=	1.6000										
P, ATM	0.5000	1.0000	1.5030	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1973.8	1974.8	1975.2	1975.5	1975.8	1976.0	1976.2	1976.5	1976.6	1976.7	1976.8	1976.9	1976.9						
T, DEG F	3093.1	3094.9	3095.7	3096.2	3096.8	3097.1	3097.5	3098.0	3098.2	3098.4	3098.6	3098.7	3098.8						
RHO, G/CC	8.0357-5	1.6065-4	2.4092-4	3.2119-4	4.8173-4	6.4225-4	9.6328-4	1.6053-3	2.4078-3	3.2103-3	4.8153-3	6.4202-3	8.0251-3						
M, MOL WT	26.029	26.032	26.033	26.033	26.034	26.034	26.035	26.035	26.036	26.036	26.036	26.037	26.037						
CP, CAL/(G)(K)	0.3670	0.3643	0.3631	0.3624	0.3616	0.3611	0.3605	0.3598	0.3595	0.3592	0.3590	0.3588	0.3587						
GAMMA (S)	1.2652	1.2669	1.2677	1.2681	1.2687	1.2690	1.2694	1.2698	1.2701	1.2702	1.2704	1.2705	1.2706						
SON VEL, M/SEC	893.1	893.9	894.3	894.5	894.7	894.9	895.1	895.3	895.4	895.4	895.5	895.6	895.6						

MOLE FRACTIONS

AR	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756						
CO	0.13580	0.13584	0.13586	0.13587	0.13588	0.13589	0.13590	0.13591	0.13591	0.13591	0.13592	0.13592	0.13592						
CO2	0.04835	0.04832	0.04831	0.04830	0.04830	0.04829	0.04829	0.04828	0.04828	0.04828	0.04828	0.04828	0.04828						
H	0.00050	0.00035	0.00029	0.00025	0.00021	0.00018	0.00015	0.00011	0.00009	0.00008	0.00007	0.00006	0.00005						
H2	0.06767	0.06771	0.06772	0.06773	0.06774	0.06775	0.06776	0.06776	0.06777	0.06777	0.06777	0.06777	0.06777						
H2O	0.10737	0.10743	0.10745	0.10747	0.10749	0.10750	0.10752	0.10753	0.10754	0.10754	0.10755	0.10755	0.10755						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001						
NO	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
N2	0.63268	0.63274	0.63276	0.63278	0.63279	0.63280	0.63282	0.63283	0.63284	0.63284	0.63285	0.63285	0.63285						
OH	0.00008	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001						

CASE=	4	O/F=	20.9343	F/A=	0.04777	PERCENT FUEL=	4.5591	PHI=	0.7000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2201.3	2211.3	2216.3	2219.4	2223.4	2226.0	2229.1	2232.5	2234.8	2236.3	2238.1	2239.2	2240.0						
T, DEG F	3502.6	3520.6	3529.6	3535.3	3542.5	3547.0	3552.8	3558.9	3563.0	3565.6	3568.8	3570.8	3572.3						
RHO, G/CC	7.9924-5	1.5324-4	2.3842-4	3.1751-4	4.7555-4	6.3346-4	9.4907-4	1.5798-3	2.3676-3	3.1551-3	4.7295-3	6.3034-3	7.8769-3						
M, MOL WT	28.874	28.895	28.906	28.913	28.921	28.927	28.933	28.941	28.945	28.949	28.952	28.955	28.956						
CP, CAL/(G11K)	0.4380	0.4170	0.4067	0.4002	0.3921	0.3870	0.3807	0.3740	0.3696	0.3668	0.3634	0.3613	0.3599						
GAMMA (S)	1.2054	1.2132	1.2174	1.2202	1.2238	1.2261	1.2291	1.2324	1.2347	1.2361	1.2379	1.2391	1.2399						
SON VEL, M/SEC	874.1	878.6	881.0	882.5	884.4	885.7	887.3	889.1	890.3	891.0	892.0	892.6	893.0						

MOLE FRACTIONS

AR	0.00887	0.00888	0.00888	0.00888	0.00888	0.00889	0.00889	0.00889	0.00889	0.00889	0.00889	0.00889	0.00890						
CO	0.00326	0.00249	0.00212	0.00188	0.00158	0.00140	0.00117	0.00093	0.00077	0.00068	0.00056	0.00049	0.00044						
CO2	0.09151	0.09234	0.09275	0.09301	0.09334	0.09354	0.09379	0.09405	0.09423	0.09433	0.09446	0.09454	0.09460						
H	0.00019	0.00013	0.00010	0.00008	0.00006	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001						
H02	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
H2	0.00059	0.00045	0.00038	0.00034	0.00028	0.00025	0.00021	0.00016	0.00014	0.00012	0.00010	0.00009	0.00008						
H20	0.08734	0.08783	0.08809	0.08825	0.08847	0.08861	0.08879	0.08900	0.08914	0.08923	0.08935	0.08943	0.08948						
NO	0.00674	0.00688	0.00695	0.00699	0.00705	0.00709	0.00713	0.00719	0.00722	0.00724	0.00727	0.00729	0.00730						
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003						
N2	0.73958	0.74007	0.74031	0.74046	0.74065	0.74077	0.74092	0.74108	0.74119	0.74125	0.74134	0.74139	0.74142						
O	0.00091	0.00069	0.00058	0.00051	0.00043	0.00038	0.00031	0.00025	0.00020	0.00018	0.00015	0.00013	0.00012						
OH	0.00409	0.00359	0.00331	0.00312	0.00287	0.00270	0.00247	0.00220	0.00201	0.00188	0.00171	0.00160	0.00152						
O2	0.05691	0.05665	0.05653	0.05646	0.05637	0.05632	0.05626	0.05620	0.05616	0.05614	0.05612	0.05611	0.05610						

CASE=	4	O/F=	18.3175	F/A=	0.05459	PERCENT FUEL=	5.1767	PHI=	0.8000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2313.1	2331.8	2341.6	2348.1	2356.5	2362.0	2369.1	2376.9	2382.3	2387.7	2390.1	2392.8	2394.8						
T, DEG F	3703.9	3737.6	3755.3	3766.9	3782.1	3791.9	3804.6	3818.7	3828.4	3834.6	3842.5	3847.4	3850.9						
RHO, G/CC	7.5737-5	1.5047-4	2.2493-4	2.9923-4	4.4752-4	5.9556-4	8.9115-4	1.4812-3	2.2177-3	2.9534-3	4.4235-3	5.8925-3	7.3607-3						
M, MOL WT	28.751	28.792	28.813	28.827	28.846	28.858	28.873	28.890	28.902	28.909	28.919	28.925	28.929						
CP, CAL/(G11K)	0.5384	0.5028	0.4843	0.4721	0.4565	0.4463	0.4333	0.4190	0.4092	0.4030	0.3952	0.3903	0.3869						
GAMMA (S)	1.1779	1.1863	1.1912	1.1946	1.1993	1.2026	1.2070	1.2122	1.2160	1.2185	1.2217	1.2239	1.2254						
SON VEL, M/SEC	887.6	893.8	897.2	899.5	902.6	904.7	907.4	910.6	912.9	914.4	916.3	917.5	918.4						

MOLE FRACTIONS

AR	0.00877	0.00879	0.00879	0.00880	0.00880	0.00881	0.00881	0.00882	0.00882	0.00882	0.00883	0.00883	0.00883						
CO	0.00878	0.00716	0.00629	0.00572	0.00498	0.00449	0.00386	0.00317	0.00269	0.00239	0.00201	0.00178	0.00161						
CO2	0.09833	0.10010	0.10104	0.10167	0.10248	0.10301	0.10370	0.10446	0.10498	0.10531	0.10572	0.10598	0.10616						
H	0.00057	0.00040	0.00032	0.00027	0.00021	0.00018	0.00014	0.00010	0.00008	0.00007	0.00005	0.00004	0.00004						
H02	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
H2	0.00155	0.00124	0.00108	0.00097	0.00084	0.00075	0.00064	0.00052	0.00044	0.00039	0.00033	0.00029	0.00026						
H20	0.09699	0.09784	0.09829	0.09859	0.09898	0.09924	0.09958	0.09997	0.10025	0.10042	0.10066	0.10081	0.10091						
NO	0.00704	0.00725	0.00736	0.00743	0.00752	0.00758	0.00766	0.00775	0.00781	0.00785	0.00790	0.00793	0.00795						
NO2	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002						
N2	0.73149	0.73243	0.73292	0.73325	0.73367	0.73394	0.73430	0.73469	0.73496	0.73513	0.73534	0.73548	0.73557						
O	0.00149	0.00116	0.00099	0.00089	0.00076	0.00067	0.00057	0.00046	0.00039	0.00034	0.00028	0.00025	0.00022						
OH	0.00602	0.00541	0.00507	0.00482	0.00449	0.00426	0.00394	0.00356	0.00328	0.00309	0.00283	0.00266	0.00254						
O2	0.03897	0.03823	0.03784	0.03758	0.03726	0.03704	0.03678	0.03649	0.03629	0.03617	0.03602	0.03593	0.03587						

CASE=	5	0/F=	10.4671	F/A=	0.09554	PERCENT FUEL=	8.7206	PHI=	1.4000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2451.3	2469.7	2478.8	2484.4	2491.5	2495.9	2501.3	2506.9	2510.5	2512.7	2515.4	2517.0	2518.1						
T, DEG F	3952.7	3985.8	4002.1	4012.3	4025.0	4032.9	4042.6	4052.6	4059.2	4063.2	4067.9	4070.8	4072.8						
RHO, G/CC	6.6541-5	1.3228-4	1.9783-4	2.6329-4	3.9402-4	5.2462-4	7.8556-4	1.3069-3	1.9581-3	2.6089-3	3.9100-3	5.2106-3	6.5109-3						
M, MOL WT	26.769	26.807	26.826	26.837	26.852	26.861	26.872	26.883	26.891	26.895	26.901	26.904	26.906						
CP, CAL/(G/IK)	0.5223	0.4797	0.4594	0.4468	0.4315	0.4222	0.4109	0.3994	0.3921	0.3877	0.3824	0.3793	0.3771						
GAMMA (S)	1.1958	1.2077	1.2142	1.2186	1.2243	1.2280	1.2327	1.2378	1.2413	1.2434	1.2460	1.2476	1.2488						
SON VEL,M/SEC	954.2	961.8	965.8	968.5	971.8	974.0	976.7	979.6	981.6	982.8	984.2	985.1	985.7						

MOLE FRACTIONS

AR	0.00786	0.00788	0.00788	0.00788	0.00789	0.00789	0.00789	0.00790	0.00790	0.00790	0.00790	0.00790	0.00791						
CO	0.10735	0.10725	0.10720	0.10717	0.10714	0.10713	0.10711	0.10709	0.10709	0.10708	0.10708	0.10708	0.10707						
CO2	0.06045	0.06079	0.06096	0.06106	0.06118	0.06125	0.06134	0.06142	0.06148	0.06151	0.06155	0.06157	0.06159						
H	0.00535	0.00411	0.00349	0.00310	0.00261	0.00230	0.00192	0.00153	0.00127	0.00111	0.00091	0.00080	0.00072						
H2	0.03549	0.03535	0.03529	0.03526	0.03522	0.03520	0.03518	0.03516	0.03515	0.03514	0.03514	0.03514	0.03513						
H2O	0.11976	0.12111	0.12179	0.12221	0.12275	0.12308	0.12349	0.12392	0.12419	0.12437	0.12457	0.12469	0.12478						
NO	0.00098	0.00080	0.00070	0.00063	0.00054	0.00049	0.00041	0.00033	0.00028	0.00025	0.00020	0.00018	0.00016						
N2	0.65828	0.65931	0.65981	0.66014	0.66054	0.66079	0.66110	0.66142	0.66163	0.66176	0.66191	0.66200	0.66207						
O	0.00036	0.00022	0.00016	0.00013	0.00009	0.00007	0.00005	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001						
OH	0.00362	0.00288	0.00249	0.00223	0.00191	0.00170	0.00143	0.00115	0.00096	0.00084	0.00070	0.00061	0.00055						
O2	0.00050	0.00031	0.00023	0.00018	0.00013	0.00010	0.00007	0.00005	0.00003	0.00002	0.00002	0.00001	0.00001						

CASE=	5	0/F=	9.1588	F/A=	0.10919	PERCENT FUEL=	9.8437	PHI=	1.6000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2328.6	2337.6	2341.8	2344.5	2347.6	2349.6	2351.9	2354.3	2355.8	2356.8	2357.9	2358.6	2359.0						
T, DEG F	3731.8	3749.0	3755.6	3760.3	3766.0	3769.5	3773.7	3778.0	3780.8	3782.5	3784.5	3785.7	3786.5						
RHO, G/CC	6.7944-5	1.3546-4	2.0290-4	2.7028-4	4.0498-4	5.3962-4	8.0877-4	1.3468-3	2.0192-3	2.6914-3	4.0355-3	5.3795-3	6.7233-3						
M, MOL WT	25.965	25.984	25.993	25.998	26.005	26.009	26.014	26.019	26.022	26.024	26.027	26.028	26.029						
CP, CAL/(G/IK)	0.4341	0.4148	0.4058	0.4004	0.3938	0.3898	0.3851	0.3802	0.3771	0.3752	0.3730	0.3717	0.3708						
GAMMA (S)	1.2312	1.2394	1.2435	1.2461	1.2493	1.2513	1.2538	1.2564	1.2591	1.2581	1.2604	1.2612	1.2617						
SON VEL,M/SEC	958.1	962.8	965.1	966.6	968.4	969.5	970.8	972.2	973.1	973.7	974.4	974.8	975.0						

MOLE FRACTIONS

AR	0.00753	0.00754	0.00754	0.00754	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755						
CO	0.13986	0.14005	0.14015	0.14020	0.14027	0.14032	0.14037	0.14042	0.14046	0.14048	0.14050	0.14052	0.14053						
CO2	0.04384	0.04377	0.04374	0.04372	0.04370	0.04369	0.04367	0.04365	0.04364	0.04363	0.04362	0.04362	0.04361						
H	0.00393	0.00291	0.00243	0.00213	0.00177	0.00155	0.00128	0.00100	0.00083	0.00072	0.00059	0.00051	0.00046						
H2	0.06228	0.06248	0.06258	0.06265	0.06272	0.06277	0.06283	0.06289	0.06293	0.06295	0.06297	0.06299	0.06300						
H2O	0.11005	0.11063	0.11090	0.11107	0.11127	0.11140	0.11155	0.11170	0.11186	0.11193	0.11198	0.11198	0.11200						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001						
NO	0.00021	0.00016	0.00013	0.00012	0.00010	0.00009	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00003						
N2	0.63103	0.63151	0.63173	0.63187	0.63204	0.63215	0.63227	0.63240	0.63249	0.63254	0.63260	0.63263	0.63266						
O	0.00005	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00119	0.00089	0.00075	0.00066	0.00055	0.00048	0.00040	0.00032	0.00026	0.00023	0.00019	0.00016	0.00015						
O2	0.00004	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						

CASE= 7 O/F= 20.9343 F/A= 0.04777 PERCENT FUEL= 4.5591 PHI= 0.7000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2384.1	2405.8	2417.3	2425.0	2434.9	2441.5	2449.9	2459.4	2465.9	2470.2	2475.5	2478.9	2481.3
T, DEG F	3831.7	3870.8	3891.5	3905.2	3923.2	3934.9	3950.2	3967.1	3979.0	3986.6	3996.2	4002.3	4006.6
RHO, G/CC	7.3352-4	1.4562-4	2.1758-4	2.8937-4	4.3260-4	5.7554-4	8.6089-4	1.4303-3	2.1408-3	2.8505-3	4.2682-3	5.6846-3	7.1002-3
M, MOL WT	28.700	28.748	28.773	28.790	28.812	28.826	28.844	28.865	28.879	28.889	28.900	28.908	28.913
CP, CAL/(G*IK)	0.5641	0.5247	0.5041	0.4906	0.4731	0.4618	0.4472	0.4311	0.4200	0.4130	0.4041	0.3985	0.3946
GAMMA (S)	1.1737	1.1821	1.1869	1.1904	1.1951	1.1984	1.2029	1.2083	1.2122	1.2149	1.2183	1.2206	1.2222
SOM VEL, M/SEC	900.4	906.9	910.6	913.0	916.4	918.7	921.7	925.2	927.7	929.3	931.5	932.9	933.9

MOLE FRACTIONS

AR	0.00882	0.00883	0.00884	0.00884	0.00885	0.00886	0.00886	0.00887	0.00887	0.00887	0.00888	0.00888	0.00888
CO	0.00957	0.00789	0.00698	0.00637	0.00557	0.00505	0.00436	0.00360	0.00307	0.00274	0.00232	0.00205	0.00186
CO2	0.08462	0.08466	0.08745	0.08512	0.08899	0.08956	0.09031	0.09113	0.09171	0.09208	0.09254	0.09283	0.09303
H	0.00084	0.00059	0.00048	0.00041	0.00032	0.00027	0.00022	0.00016	0.00012	0.00010	0.00008	0.00006	0.00006
H2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00002
H2O	0.00163	0.00131	0.00115	0.00104	0.00090	0.00081	0.00070	0.00057	0.00048	0.00043	0.00036	0.00032	0.00029
N	0.08353	0.08448	0.08495	0.08534	0.08580	0.08610	0.08650	0.08697	0.08730	0.08752	0.08780	0.08799	0.08812
NO	0.00981	0.01017	0.01036	0.01049	0.01066	0.01077	0.01091	0.01108	0.01119	0.01126	0.01136	0.01142	0.01146
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00003
N2	0.73358	0.73463	0.73518	0.73555	0.73603	0.73634	0.73674	0.73719	0.73750	0.73770	0.73795	0.73811	0.73822
O	0.00267	0.00211	0.00183	0.00164	0.00141	0.00126	0.00107	0.00087	0.00073	0.00065	0.00054	0.00048	0.00043
OH	0.00790	0.00717	0.00674	0.00644	0.00603	0.00573	0.00543	0.00484	0.00448	0.00423	0.00387	0.00366	0.00349
O2	0.05702	0.05634	0.05598	0.05574	0.05543	0.05523	0.05497	0.05469	0.05450	0.05439	0.05424	0.05416	0.05410

CASE= 7 O/F= 18.3175 F/A= 0.05459 PERCENT FUEL= 5.1767 PHI= 0.8000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2461.6	2491.5	2508.1	2519.3	2534.4	2544.6	2558.1	2573.9	2585.3	2592.8	2602.6	2609.0	2613.6
T, DEG F	3971.2	4025.1	4054.8	4075.0	4102.2	4120.5	4144.9	4173.3	4193.8	4207.4	4225.0	4236.5	4244.8
RHO, G/CC	7.0577-5	1.3978-4	2.0895-4	2.7707-4	4.1361-4	5.4971-4	8.2104-4	1.3617-3	2.0353-3	2.7074-3	4.0488-3	5.3878-3	6.7252-3
M, MOL WT	28.512	28.578	28.614	28.639	28.672	28.694	28.724	28.759	28.784	28.801	28.822	28.836	28.846
CP, CAL/(G*IK)	0.6794	0.6301	0.6035	0.5856	0.5619	0.5460	0.5250	0.5007	0.4833	0.4718	0.4570	0.4473	0.4404
GAMMA (S)	1.1566	1.1636	1.1678	1.1709	1.1752	1.1784	1.1828	1.1884	1.1929	1.1959	1.2002	1.2031	1.2053
SOM VEL, M/SEC	911.2	918.4	922.5	925.4	929.4	932.1	935.9	940.4	943.8	946.1	949.2	951.3	952.9

MOLE FRACTIONS

AR	0.00870	0.00872	0.00873	0.00874	0.00875	0.00876	0.00877	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880
CO	0.01816	0.01576	0.01440	0.01315	0.01215	0.01126	0.01006	0.00864	0.00760	0.00691	0.00601	0.00543	0.00500
CO2	0.08806	0.09070	0.09220	0.09324	0.09466	0.09563	0.09695	0.09849	0.09963	0.01038	0.01036	0.01020	0.01024
H	0.00167	0.00124	0.00103	0.00090	0.00074	0.00064	0.00052	0.00040	0.00032	0.00027	0.00021	0.00018	0.00016
H2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00002	0.00002
H2O	0.00315	0.00266	0.00239	0.00221	0.00197	0.00180	0.00159	0.00135	0.00117	0.00106	0.00091	0.00082	0.00075
N	0.09205	0.09337	0.09409	0.09459	0.09525	0.09570	0.09631	0.09702	0.09754	0.09789	0.09834	0.09865	0.09887
NO	0.00957	0.00996	0.01017	0.01031	0.01050	0.01063	0.01080	0.01099	0.01113	0.01122	0.01134	0.01142	0.01148
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00002
N2	0.72411	0.72560	0.72643	0.72699	0.72774	0.72825	0.72893	0.72972	0.73029	0.73066	0.73115	0.73147	0.73170
O	0.00341	0.00276	0.00243	0.00221	0.00193	0.00174	0.00150	0.00124	0.00106	0.00095	0.00081	0.00072	0.00065
OH	0.00989	0.00915	0.00870	0.00838	0.00793	0.00761	0.00715	0.00659	0.00616	0.00585	0.00544	0.00515	0.00494
O2	0.04121	0.04006	0.03942	0.03897	0.03836	0.03795	0.03740	0.03675	0.03629	0.03598	0.03558	0.03533	0.03514

CASE= 1 O/F= 17.2400 F/A= 0.05800 PERCENT FUEL= 5.4825 PHI= 0.8500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2095.1	2102.3	2105.8	2108.0	2110.8	2112.5	2114.7	2116.9	2118.5	2119.4	2120.6	2121.3	2121.8
T, DEG F	3311.5	3324.4	3330.7	3334.7	3339.7	3342.8	3346.7	3350.8	3353.5	3355.2	3357.4	3358.7	3359.6
RHO, G/CC	8.4080-5	1.6767-4	2.5116-4	3.3458-4	5.0131-4	6.6795-4	1.0011-3	1.6669-3	2.4989-3	3.3306-3	4.9935-3	6.6561-3	8.3184-3
M, MOL WT	28.909	28.925	28.932	28.937	28.943	28.947	28.951	28.956	28.959	28.961	28.964	28.965	28.966
CP, CAL/(G)(K)	0.4147	0.3980	0.3899	0.3848	0.3785	0.3746	0.3698	0.3647	0.3613	0.3593	0.3568	0.3552	0.3541
GAMMA (S)	1.2134	1.2206	1.2244	1.2268	1.2299	1.2319	1.2344	1.2372	1.2391	1.2402	1.2417	1.2426	1.2432
SON VEL./M/SEC	855.1	858.8	860.8	862.0	863.6	864.6	865.8	867.2	868.1	868.7	869.4	869.8	870.2

MOLE FRACTIONS

AR	0.00879	0.00880	0.00880	0.00880	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881
CO	0.00260	0.00196	0.00165	0.00146	0.00122	0.00107	0.00089	0.00071	0.00058	0.00051	0.00042	0.00037	0.00033
CO2	0.11144	0.11214	0.11248	0.11269	0.11295	0.11311	0.11331	0.11352	0.11365	0.11373	0.11383	0.11389	0.11394
H	0.00010	0.00006	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000
H2	0.00051	0.00038	0.00032	0.00028	0.00024	0.00021	0.00017	0.00014	0.00011	0.00010	0.00008	0.00007	0.00006
H2O	0.10668	0.10704	0.10723	0.10734	0.10749	0.10759	0.10772	0.10785	0.10794	0.10800	0.10808	0.10813	0.10817
NO	0.00371	0.00376	0.00378	0.00380	0.00382	0.00383	0.00384	0.00386	0.00387	0.00388	0.00389	0.00389	0.00390
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73483	0.73519	0.73537	0.73548	0.73562	0.73571	0.73582	0.73593	0.73601	0.73606	0.73611	0.73615	0.73618
O	0.00032	0.00024	0.00020	0.00017	0.00014	0.00013	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00004
OH	0.00243	0.00211	0.00193	0.00181	0.00166	0.00156	0.00142	0.00126	0.00115	0.00107	0.00097	0.00091	0.00086
O2	0.02860	0.02832	0.02819	0.02811	0.02801	0.02796	0.02789	0.02782	0.02778	0.02775	0.02773	0.02771	0.02770

CASE= 1 O/F= 16.2822 F/A= 0.06142 PERCENT FUEL= 5.7863 PHI= 0.9000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2157.6	2168.9	2174.7	2178.4	2183.1	2186.1	2189.9	2194.0	2196.7	2198.4	2200.6	2201.9	2202.8
T, DEG F	3423.9	3444.4	3454.7	3461.4	3469.9	3475.3	3482.1	3489.4	3494.4	3497.5	3501.3	3503.7	3505.4
RHO, G/CC	8.1506-5	1.6230-4	2.4291-4	3.2341-4	4.8424-4	6.4491-4	9.6597-4	1.6074-3	2.4086-3	3.2094-3	4.8102-3	6.4103-3	8.0100-3
M, MOL WT	28.860	28.885	28.897	28.905	28.915	28.922	28.930	28.939	28.944	28.948	28.953	28.956	28.958
CP, CAL/(G)(K)	0.4621	0.4377	0.4253	0.4174	0.4073	0.4009	0.3928	0.3841	0.3782	0.3746	0.3701	0.3673	0.3653
GAMMA (S)	1.1964	1.2046	1.2092	1.2123	1.2164	1.2192	1.2228	1.2269	1.2297	1.2315	1.2339	1.2353	1.2364
SON VEL./M/SEC	862.4	867.2	869.8	871.6	873.8	875.3	877.3	879.4	880.9	881.8	883.0	883.8	884.3

MOLE FRACTIONS

AR	0.00875	0.00876	0.00876	0.00877	0.00877	0.00877	0.00877	0.00878	0.00878	0.00878	0.00878	0.00878	0.00878
CO	0.00508	0.00399	0.00344	0.00308	0.00262	0.00233	0.00197	0.00158	0.00133	0.00117	0.00097	0.00085	0.00077
CO2	0.11506	0.11625	0.11686	0.11725	0.11774	0.11806	0.11846	0.11888	0.11916	0.11934	0.11955	0.11969	0.11978
H	0.00019	0.00013	0.00010	0.00008	0.00006	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001
H2	0.00097	0.00075	0.00064	0.00057	0.00049	0.00043	0.00036	0.00029	0.00024	0.00021	0.00018	0.00015	0.00014
H2O	0.11171	0.11224	0.11251	0.11269	0.11292	0.11307	0.11325	0.11346	0.11361	0.11370	0.11382	0.11389	0.11395
NO	0.00359	0.00364	0.00367	0.00368	0.00370	0.00371	0.00373	0.00375	0.00376	0.00377	0.00378	0.00378	0.00379
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73126	0.73186	0.73217	0.73236	0.73261	0.73276	0.73296	0.73318	0.73332	0.73341	0.73352	0.73359	0.73364
O	0.00041	0.00031	0.00026	0.00023	0.00019	0.00017	0.00014	0.00011	0.00009	0.00008	0.00007	0.00006	0.00005
OH	0.00297	0.00261	0.00241	0.00227	0.00209	0.00197	0.00180	0.00161	0.00147	0.00138	0.00126	0.00117	0.00111
O2	0.01999	0.01946	0.01919	0.01902	0.01880	0.01867	0.01850	0.01833	0.01821	0.01814	0.01806	0.01801	0.01798

CASE=	2	O/F=	8.1411	F/A=	0.12283	PERCENT FUEL=	10.9396	PHI=	1.8000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1830.7	1831.1	1831.3	1831.4	1831.5	1831.6	1831.7	1831.8	1831.8	1831.9	1831.9	1832.0	1832.0						
T, DEG F	2835.6	2836.3	2836.6	2836.8	2837.0	2837.2	2837.3	2837.5	2837.6	2837.7	2837.8	2837.8	2837.9						
RHO, G/CC	8.3946-5	1.6786-4	2.5177-4	3.3568-4	5.0350-4	6.7131-4	1.0069-3	1.6781-3	2.5171-3	3.3561-3	5.0341-3	6.7121-3	8.3901-3						
M, MOL WT	25.222	25.223	25.223	25.223	25.223	25.224	25.224	25.224	25.224	25.224	25.225	25.225	25.225						
CP, CAL/(G)(K)	0.3649	0.3638	0.3633	0.3630	0.3626	0.3624	0.3622	0.3619	0.3618	0.3617	0.3616	0.3615	0.3615						
GAMMA (S)	1.2764	1.2772	1.2775	1.2777	1.2780	1.2781	1.2783	1.2785	1.2786	1.2787	1.2787	1.2788	1.2788						
SON VEL, M/SEC	877.7	878.0	878.2	878.3	878.4	878.4	878.5	878.6	878.7	878.7	878.7	878.7	878.7						

MOLE FRACTIONS

AR	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723						
CO	0.16096	0.16098	0.16098	0.16099	0.16099	0.16100	0.16100	0.16100	0.16100	0.16101	0.16101	0.16101	0.16101						
CO2	0.03731	0.03730	0.03729	0.03729	0.03729	0.03729	0.03728	0.03728	0.03728	0.03728	0.03728	0.03728	0.03728						
H	0.00020	0.00014	0.00012	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002						
H2	0.09888	0.09890	0.09891	0.09892	0.09892	0.09892	0.09893	0.09893	0.09893	0.09892	0.09892	0.09891	0.09890						
H2O	0.08980	0.08982	0.08983	0.08983	0.08984	0.08984	0.08985	0.08985	0.08985	0.08985	0.08985	0.08985	0.08985						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00002	0.00003	0.00003						
N2	0.60560	0.60562	0.60563	0.60563	0.60564	0.60564	0.60565	0.60565	0.60566	0.60566	0.60566	0.60566	0.60566						
OH	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						

CASE=	2	O/F=	7.3270	F/A=	0.13648	PERCENT FUEL=	12.0091	PHI=	2.0000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1694.8	1694.9	1695.0	1695.0	1695.1	1695.1	1695.1	1695.2	1695.2	1695.2	1695.3	1695.3	1695.4						
T, DEG F	2590.9	2591.2	2591.3	2591.3	2591.4	2591.5	2591.5	2591.6	2591.7	2591.7	2591.8	2591.9	2591.9						
RHO, G/CC	8.8006-5	1.7600-4	2.6399-4	3.5198-4	5.2797-4	7.0394-4	1.0559-3	1.7598-3	2.6397-3	3.5136-3	5.2793-3	7.0390-3	8.7987-3						
M, MOL WT	24.478	24.478	24.478	24.478	24.479	24.479	24.479	24.479	24.479	24.479	24.480	24.480	24.481						
CP, CAL/(G)(K)	0.3653	0.3649	0.3647	0.3645	0.3644	0.3643	0.3642	0.3641	0.3641	0.3641	0.3641	0.3641	0.3642						
GAMMA (S)	1.2861	1.2865	1.2866	1.2867	1.2868	1.2869	1.2870	1.2870	1.2870	1.2871	1.2871	1.2871	1.2871						
SON VEL, M/SEC	860.5	860.6	860.7	860.7	860.7	860.8	860.8	860.8	860.8	860.9	860.9	860.9	860.9						

MOLE FRACTIONS

AR	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693						
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
CO	0.18169	0.18169	0.18170	0.18170	0.18170	0.18170	0.18170	0.18170	0.18170	0.18170	0.18170	0.18170	0.18170						
CO2	0.02952	0.02952	0.02951	0.02951	0.02951	0.02951	0.02951	0.02951	0.02951	0.02951	0.02952	0.02952	0.02952						
H	0.00007	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001						
H2	0.12983	0.12984	0.12984	0.12984	0.12984	0.12984	0.12984	0.12984	0.12983	0.12982	0.12980	0.12978	0.12976						
H2O	0.07127	0.07128	0.07128	0.07128	0.07128	0.07128	0.07128	0.07129	0.07129	0.07129	0.07129	0.07129	0.07129						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00002	0.00003	0.00004	0.00005	0.00007						
N2	0.58068	0.58069	0.58069	0.58069	0.58070	0.58070	0.58070	0.58070	0.58070	0.58070	0.58071	0.58071	0.58072						

CASE= 5		O/F= 8.1411	F/A= 0.12283	PERCENT FUEL= 10.9396				PHI= 1.8000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2192.9	2197.4	2199.5	2200.7	2202.3	2203.2	2204.3	2205.4	2206.1	2206.6	2207.1	2207.4	2207.6
T, DEG F	3487.5	3495.6	3499.4	3501.6	3504.4	3506.0	3508.0	3510.0	3511.3	3512.1	3513.0	3513.6	3514.0
RHO, G/CC	6.9997-5	1.3376-4	2.0947-4	2.7916-4	4.1851-4	5.5782-4	8.3639-4	1.3934-3	2.0896-3	2.7856-3	4.1776-3	5.5696-3	6.9614-3
M, MOL WT	25.190	25.200	25.204	25.207	25.210	25.212	25.214	25.216	25.218	25.219	25.220	25.221	25.221
CP, CAL/(G*IK)	0.4029	0.3929	0.3883	0.3855	0.3822	0.3802	0.3778	0.3753	0.3738	0.3728	0.3717	0.3711	0.3706
GAMMA (S)	1.2532	1.2584	1.2609	1.2625	1.2644	1.2655	1.2669	1.2683	1.2693	1.2698	1.2705	1.2709	1.2712
SON VEL, M/SEC	952.4	955.2	956.5	957.3	958.3	958.9	959.6	960.4	960.8	961.1	961.5	961.7	961.8

MOLE FRACTIONS

AR	0.00722	0.00722	0.00722	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723
CO	0.16575	0.16589	0.16595	0.16599	0.16604	0.16606	0.16610	0.16613	0.16615	0.16617	0.16618	0.16619	0.16620
CO2	0.03227	0.03221	0.03218	0.03216	0.03214	0.03212	0.03211	0.03209	0.03208	0.03208	0.03207	0.03207	0.03207
H	0.00232	0.00168	0.00139	0.00121	0.00100	0.00087	0.00072	0.00056	0.00046	0.00040	0.00033	0.00028	0.00025
H2	0.09292	0.09314	0.09324	0.09330	0.09337	0.09341	0.09347	0.09352	0.09355	0.09357	0.09359	0.09360	0.09361
H2O	0.09431	0.09453	0.09463	0.09469	0.09476	0.09481	0.09486	0.09491	0.09495	0.09497	0.09499	0.09500	0.09501
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00002
NO	0.00004	0.00003	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000
N2	0.60483	0.60506	0.60516	0.60523	0.60530	0.60535	0.60541	0.60546	0.60550	0.60552	0.60555	0.60557	0.60558
O	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00033	0.00024	0.00020	0.00018	0.00015	0.00013	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00004

CASE= 5		O/F= 7.3270	F/A= 0.13648	PERCENT FUEL= 12.0091				PHI= 2.0000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2057.3	2059.4	2060.4	2061.0	2061.7	2062.2	2062.7	2063.2	2063.5	2063.7	2064.0	2064.1	2064.2
T, DEG F	3243.3	3247.3	3249.1	3250.1	3251.4	3252.2	3253.1	3254.0	3254.6	3255.0	3255.4	3255.7	3255.9
RHO, G/CC	7.2458-5	1.4479-4	2.1709-4	2.8939-4	4.3396-4	5.7852-4	8.6760-4	1.4457-3	2.1683-3	2.8908-3	4.3358-3	5.7807-3	7.2453-3
M, MOL WT	24.463	24.468	24.470	24.471	24.472	24.473	24.474	24.475	24.476	24.477	24.477	24.478	24.478
CP, CAL/(G*IK)	0.3989	0.3835	0.3811	0.3797	0.3780	0.3769	0.3757	0.3744	0.3736	0.3732	0.3726	0.3723	0.3721
GAMMA (S)	1.2593	1.2725	1.2740	1.2749	1.2759	1.2766	1.2774	1.2782	1.2787	1.2790	1.2793	1.2796	1.2797
SON VEL, M/SEC	942.1	943.7	944.4	944.8	945.4	945.7	946.1	946.5	946.7	946.9	947.1	947.2	947.2

MOLE FRACTIONS

AR	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693
CO	0.18686	0.18693	0.18696	0.18698	0.18700	0.18702	0.18703	0.18705	0.18706	0.18707	0.18707	0.18708	0.18708
CO2	0.02422	0.02419	0.02418	0.02417	0.02416	0.02415	0.02414	0.02414	0.02413	0.02413	0.02413	0.02413	0.02413
H	0.00118	0.00084	0.00069	0.00050	0.00050	0.00043	0.00035	0.00027	0.00022	0.00019	0.00016	0.00014	0.00012
H2	0.12397	0.12411	0.12417	0.12421	0.12425	0.12428	0.12431	0.12434	0.12436	0.12436	0.12437	0.12437	0.12437
H2O	0.07642	0.07650	0.07653	0.07655	0.07658	0.07659	0.07661	0.07663	0.07664	0.07664	0.07665	0.07666	0.07666
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00002	0.00003	0.00003
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.58033	0.58044	0.58049	0.58051	0.58055	0.58057	0.58059	0.58062	0.58063	0.58064	0.58066	0.58066	0.58067
OH	0.00008	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001

CASE= 7 O/F= 17.2400 F/A= 0.05800 PERCENT FUEL= 5.4825 PHI= 0.8500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	5.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2491.4	2524.7	2543.4	2556.2	2573.5	2585.4	2601.4	2620.4	2634.4	2643.7	2656.1	2664.3	2670.3
T, DEG F	4024.9	4084.8	4118.3	4141.4	4172.7	4194.0	4222.9	4256.9	4282.2	4299.0	4321.3	4336.0	4346.9
RHO, G/CC	6.9461-5	1.3744-4	2.0495-4	2.7217-4	4.0603-4	5.3938-4	8.0509-4	1.3340-3	1.9926-3	2.6492-3	3.9591-3	5.2659-3	6.5705-3
M, MOL WT	28.401	28.474	28.515	28.543	28.582	28.608	28.643	28.684	28.715	28.736	28.763	28.781	28.794
CP, CAL/(G)(K)	0.7343	0.6822	0.6539	0.6348	0.6091	0.5919	0.5688	0.5417	0.5219	0.5086	0.4912	0.4797	0.4712
GAMMA (S)	1.1508	1.1570	1.1608	1.1636	1.1676	1.1704	1.1745	1.1798	1.1840	1.1870	1.1912	1.1941	1.1964
SON VEL, M/SEC	916.2	923.6	927.8	930.8	934.9	937.8	941.8	946.6	950.3	952.9	956.3	958.7	960.5

MOLE FRACTIONS

AR	0.00864	0.00866	0.00867	0.00868	0.00870	0.00870	0.00871	0.00873	0.00874	0.00874	0.00875	0.00876	0.00876
CO	0.02347	0.02084	0.01930	0.01922	0.01671	0.01567	0.01423	0.01249	0.01118	0.01029	0.00911	0.00832	0.00773
CO2	0.08856	0.09149	0.09319	0.09438	0.09603	0.09718	0.09876	0.10067	0.10210	0.10306	0.10436	0.10522	0.10585
H	0.00220	0.00167	0.00141	0.00124	0.00103	0.00091	0.00075	0.00058	0.00047	0.00040	0.00032	0.00028	0.00024
H2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
H2	0.00417	0.00358	0.00326	0.00304	0.00274	0.00254	0.00227	0.00196	0.00173	0.00158	0.00138	0.00125	0.00116
H2O	0.09597	0.09746	0.09829	0.09886	0.09963	0.10016	0.10087	0.10171	0.10234	0.10275	0.10331	0.10368	0.10396
NO	0.00919	0.00955	0.00975	0.00988	0.01005	0.01017	0.01032	0.01050	0.01062	0.01070	0.01080	0.01087	0.01092
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
N2	0.71913	0.72082	0.72176	0.72241	0.72330	0.72390	0.72472	0.72570	0.72642	0.72690	0.72754	0.72796	0.72828
O	0.00362	0.00296	0.00261	0.00238	0.00208	0.00189	0.00164	0.00137	0.00118	0.00105	0.00090	0.00080	0.00073
OH	0.01062	0.00988	0.00943	0.00911	0.00865	0.00832	0.00786	0.00728	0.00693	0.00651	0.00607	0.00574	0.00554
O2	0.03443	0.03309	0.03233	0.03179	0.03105	0.03054	0.02984	0.02901	0.02839	0.02797	0.02742	0.02706	0.02679

CASE= 7 O/F= 16.2822 F/A= 0.06142 PERCENT FUEL= 5.7863 PHI= 0.9000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2516.1	2552.1	2572.5	2586.6	2605.9	2619.2	2637.4	2659.1	2675.5	2686.6	2701.5	2711.5	2718.9
T, DEG F	4069.2	4134.1	4170.8	4196.2	4231.0	4254.9	4287.6	4326.8	4356.2	4376.2	4402.9	4420.9	4434.3
RHO, G/CC	6.8490-5	1.3542-4	2.0184-4	2.6795-4	3.9953-4	5.3055-4	7.9145-4	1.3105-3	1.9561-3	2.5996-3	3.8823-3	5.1612-3	6.4375-3
M, MOL WT	28.281	28.360	28.405	28.436	28.478	28.507	28.547	28.594	28.630	28.654	28.687	28.709	28.725
CP, CAL/(G)(K)	0.7831	0.7292	0.6999	0.6801	0.6534	0.6354	0.6112	0.5826	0.5614	0.5472	0.5281	0.5154	0.5059
GAMMA (S)	1.1465	1.1522	1.1556	1.1581	1.1616	1.1642	1.1679	1.1727	1.1765	1.1792	1.1831	1.1859	1.1881
SON VEL, M/SEC	920.9	928.5	932.8	935.9	940.1	943.1	947.2	952.2	956.1	958.8	962.5	965.0	967.0

MOLE FRACTIONS

AR	0.00858	0.00860	0.00861	0.00862	0.00864	0.00864	0.00866	0.00867	0.00868	0.00869	0.00870	0.00871	0.00871
CO	0.02938	0.02660	0.02494	0.02377	0.02212	0.02095	0.01933	0.01733	0.01579	0.01473	0.01328	0.01230	0.01156
CO2	0.08835	0.09146	0.09330	0.09460	0.09643	0.09772	0.09950	0.10170	0.10339	0.10456	0.10614	0.10721	0.10802
H	0.00278	0.00215	0.00183	0.00163	0.00138	0.00122	0.00102	0.00080	0.00066	0.00057	0.00047	0.00040	0.00036
H2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
H2	0.00537	0.00470	0.00433	0.00407	0.00372	0.00348	0.00315	0.00277	0.00248	0.00229	0.00204	0.00187	0.00174
H2O	0.09965	0.10131	0.10225	0.10289	0.10377	0.10437	0.10519	0.10616	0.10689	0.10738	0.10804	0.10849	0.10882
NO	0.00867	0.00899	0.00915	0.00926	0.00940	0.00949	0.00960	0.00973	0.00981	0.00986	0.00992	0.00995	0.00997
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71402	0.71587	0.71692	0.71765	0.71865	0.71934	0.72029	0.72144	0.72231	0.72290	0.72370	0.72423	0.72463
O	0.00371	0.00304	0.00269	0.00245	0.00215	0.00196	0.00170	0.00142	0.00122	0.00110	0.00094	0.00084	0.00077
OH	0.01113	0.01039	0.00994	0.00961	0.00915	0.00881	0.00834	0.00775	0.00729	0.00696	0.00651	0.00620	0.00596
O2	0.02836	0.02689	0.02604	0.02543	0.02459	0.02401	0.02320	0.02221	0.02145	0.02094	0.02025	0.01978	0.01943

	CASE= 1	O/F= 15.4253	F/A= 0.06483	PERCENT FUEL= 6.0882					PHI= 0.9500				
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2207.1	2223.0	2231.4	2237.0	2244.3	2249.1	2255.3	2262.3	2267.1	2270.2	2274.2	2276.7	2278.4
T, DEG F	3513.0	3541.7	3556.9	3566.9	3580.1	3588.7	3599.9	3612.4	3621.2	3626.7	3633.8	3638.3	3641.5
RHO, G/CC	7.9469-5	1.5799-4	2.3623-4	3.1432-4	4.7020-4	6.2583-4	9.3659-4	1.5570-3	2.3313-3	3.1049-3	4.6507-3	6.1952-3	7.7390-3
M, MOL WT	28.784	28.819	28.837	28.849	28.865	28.875	28.888	28.903	28.914	28.920	28.929	28.934	28.938
CP, CAL/(G)(K)	0.5190	0.4894	0.4737	0.4633	0.4497	0.4407	0.4290	0.4159	0.4066	0.4007	0.3931	0.3882	0.3848
GAMMA (S)	1.1810	1.1887	1.1932	1.1963	1.2007	1.2038	1.2080	1.2130	1.2167	1.2193	1.2226	1.2248	1.2264
SON VEL, M/SEC	867.7	873.1	876.2	878.2	881.0	882.9	885.5	888.5	890.6	892.1	893.9	895.1	896.0

MOLE FRACTIONS

AR	0.00870	0.00871	0.00872	0.00872	0.00873	0.00873	0.00873	0.00874	0.00874	0.00874	0.00874	0.00875	0.00875
CO	0.00917	0.00758	0.00673	0.00616	0.00541	0.00451	0.00427	0.00354	0.00304	0.00272	0.00231	0.00205	0.00186
CO2	0.11689	0.11863	0.11956	0.12018	0.12100	0.12154	0.12225	0.12304	0.12359	0.12394	0.12439	0.12467	0.12487
H	0.00034	0.00024	0.00019	0.00016	0.00013	0.00011	0.00009	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002
H2	0.00174	0.00141	0.00124	0.00113	0.00098	0.00089	0.00076	0.00063	0.00054	0.00048	0.00040	0.00036	0.00033
H2O	0.11634	0.11706	0.11744	0.11767	0.11801	0.11823	0.11851	0.11882	0.11904	0.11919	0.11937	0.11948	0.11957
NO	0.00319	0.00320	0.00320	0.00320	0.00320	0.00319	0.00318	0.00318	0.00317	0.00316	0.00316	0.00315	0.00315
N2	0.72719	0.72806	0.72852	0.72883	0.72923	0.72949	0.72983	0.73022	0.73048	0.73065	0.73087	0.73101	0.73111
O	0.00045	0.00034	0.00029	0.00025	0.00021	0.00019	0.00016	0.00012	0.00010	0.00009	0.00007	0.00006	0.00006
OH	0.00332	0.00293	0.00272	0.00257	0.00237	0.00224	0.00206	0.00185	0.00169	0.00159	0.00145	0.00136	0.00129
O2	0.01266	0.01184	0.01140	0.01111	0.01073	0.01048	0.01016	0.00980	0.00956	0.00940	0.00920	0.00908	0.00899

	CASE= 1	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3881					PHI= 1.0000				
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2240.1	2259.2	2269.5	2276.5	2285.8	2292.1	2300.5	2310.2	2317.3	2322.1	2328.2	2332.3	2335.3
T, DEG F	3572.6	3606.8	3625.4	3638.0	3654.8	3666.1	3681.2	3698.7	3711.5	3720.0	3731.1	3738.5	3743.9
RHO, G/CC	7.7995-5	1.5490-4	2.3146-4	3.0783-4	4.6018-4	6.1217-4	9.1548-4	1.5205-3	2.2749-3	3.0281-3	4.5321-3	6.0340-3	7.5344-3
M, MOL WT	28.674	28.715	28.737	28.752	28.772	28.785	28.803	28.824	28.839	28.849	28.862	28.870	28.877
CP, CAL/(G)(K)	0.5613	0.5304	0.5140	0.5031	0.4887	0.4791	0.4665	0.4521	0.4417	0.4348	0.4259	0.4201	0.4158
GAMMA (S)	1.1722	1.1789	1.1828	1.1856	1.1894	1.1921	1.1958	1.2003	1.2038	1.2062	1.2074	1.2117	1.2133
SON VEL, M/SEC	872.6	878.2	881.3	883.4	886.4	888.4	891.1	894.4	896.8	898.5	900.7	902.1	903.2

MOLE FRACTIONS

AR	0.00864	0.00865	0.00866	0.00866	0.00867	0.00867	0.00868	0.00868	0.00869	0.00869	0.00870	0.00870	0.00870
CO	0.01536	0.01350	0.01246	0.01176	0.01080	0.01015	0.00928	0.00826	0.00751	0.00700	0.00634	0.00590	0.00557
CO2	0.11639	0.11844	0.11957	0.12035	0.12140	0.12211	0.12306	0.12418	0.12500	0.12555	0.12627	0.12675	0.12710
H	0.00054	0.00039	0.00032	0.00028	0.00023	0.00020	0.00016	0.00012	0.00010	0.00008	0.00007	0.00006	0.00005
H2	0.00296	0.00255	0.00233	0.00218	0.00198	0.00185	0.00167	0.00147	0.00133	0.00123	0.00111	0.00103	0.00097
H2O	0.12045	0.12132	0.12179	0.12210	0.12252	0.12280	0.12317	0.12359	0.12390	0.12410	0.12437	0.12454	0.12466
NO	0.00254	0.00246	0.00240	0.00236	0.00229	0.00224	0.00216	0.00206	0.00197	0.00191	0.00182	0.00176	0.00171
N2	0.72241	0.72348	0.72406	0.72446	0.72500	0.72537	0.72585	0.72642	0.72685	0.72713	0.72750	0.72775	0.72793
O	0.00041	0.00030	0.00025	0.00022	0.00018	0.00015	0.00013	0.00010	0.00008	0.00007	0.00005	0.00004	0.00004
OH	0.00332	0.00290	0.00267	0.00251	0.00230	0.00215	0.00196	0.00173	0.00156	0.00145	0.00130	0.00120	0.00113
O2	0.00699	0.00602	0.00548	0.00512	0.00464	0.00432	0.00388	0.00339	0.00302	0.00279	0.00247	0.00227	0.00212

CASE=	4	O/F=	15.4253	F/A=	0.06483	PERCENT FUEL=				6.0882	PHI=					0.9500
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000			
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8			
T, DEG K	2418.9	2448.8	2465.5	2477.0	2492.6	2503.3	2517.8	2535.0	2547.8	2556.4	2567.8	2575.5	2581.2			
T, DEG F	3894.4	3948.1	3978.2	3998.9	4027.0	4046.2	4072.3	4103.2	4126.3	4141.8	4162.4	4176.2	4186.4			
RHO, G/CC	7.1656-5	1.4189-4	2.1166-4	2.8115-4	4.1958-4	5.5750-4	8.3235-4	1.3796-3	2.0611-3	2.7406-3	4.0961-3	5.4483-3	6.7983-3			
M, MOL WT	28.446	28.511	28.547	28.572	28.606	28.629	28.661	28.698	28.726	28.744	28.769	28.786	28.798			
CP, CAL/(G)(K)	0.7021	0.6566	0.6319	0.6152	0.5929	0.5779	0.5578	0.5341	0.5167	0.5051	0.4896	0.4792	0.4716			
GAMMA (S)	1.1530	1.1590	1.1627	1.1653	1.1690	1.1717	1.1755	1.1804	1.1843	1.1870	1.1909	1.1936	1.1957			
SON VEL,M/SEC	902.9	909.8	913.7	916.5	920.3	922.9	926.6	931.1	934.5	936.9	940.1	942.3	944.0			

MOLE FRACTIONS

AR	0.00860	0.00862	0.00863	0.00864	0.00865	0.00865	0.00866	0.00867	0.00868	0.00869	0.00870	0.00870	0.00870	0.00870	0.00870
CO	0.02426	0.02167	0.02017	0.01911	0.01765	0.01663	0.01523	0.01353	0.01224	0.01136	0.01018	0.00939	0.00880		
CO2	0.10032	0.10319	0.10486	0.10662	0.10763	0.10875	0.11029	0.11215	0.11356	0.11452	0.11581	0.11668	0.11732		
H	0.00164	0.00124	0.00104	0.00092	0.00077	0.00067	0.00056	0.00043	0.00035	0.00030	0.00025	0.00021	0.00019		
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001		
H2	0.00448	0.00388	0.00356	0.00333	0.00303	0.00282	0.00255	0.00222	0.00199	0.00183	0.00162	0.00148	0.00138		
H2O	0.10936	0.11075	0.11151	0.11204	0.11275	0.11323	0.11388	0.11464	0.11521	0.11559	0.11609	0.11642	0.11667		
NO	0.00592	0.00603	0.00607	0.00610	0.00612	0.00613	0.00614	0.00613	0.00611	0.00610	0.00607	0.00604	0.00602		
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001		
N2	0.71726	0.71886	0.71175	0.72037	0.72122	0.72180	0.72259	0.72354	0.72425	0.72473	0.72537	0.72580	0.72613		
O	0.00184	0.00146	0.00127	0.00115	0.00099	0.00089	0.00076	0.00062	0.00052	0.00046	0.00039	0.00034	0.00031		
OH	0.00769	0.00704	0.00666	0.00639	0.00601	0.00575	0.00538	0.00493	0.00459	0.00435	0.00403	0.00380	0.00364		
O2	0.01863	0.01726	0.01647	0.01593	0.01518	0.01466	0.01396	0.01311	0.01248	0.01206	0.01149	0.01111	0.01082		

CASE=	4	O/F=	14.6540	F/A=	0.06824	PERCENT FUEL=				6.3881	PHI=					1.0000
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000			
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8			
T, DEG K	2439.1	2470.8	2488.7	2501.0	2517.9	2529.5	2545.3	2564.3	2578.6	2588.3	2601.5	2610.3	2617.0			
T, DEG F	3930.7	3987.7	4019.9	4042.1	4072.4	4093.3	4121.8	4156.0	4181.8	4199.3	4222.9	4238.9	4250.9			
RHO, G/CC	7.0737-5	1.4000-4	2.0877-4	2.7725-4	4.1361-4	5.4943-4	8.2000-4	1.3585-3	2.0286-3	2.6966-3	4.0284-3	5.3564-3	6.6818-3			
M, MOL WT	28.315	28.384	28.422	28.449	28.485	28.510	28.544	28.585	28.616	28.636	28.664	28.683	28.697			
CP, CAL/(G)(K)	0.7337	0.6868	0.6615	0.6445	0.6217	0.6063	0.5858	0.5618	0.5442	0.5323	0.5166	0.5062	0.4984			
GAMMA (S)	1.1500	1.1557	1.1591	1.1615	1.1650	1.1675	1.1710	1.1754	1.1789	1.1814	1.1849	1.1874	1.1892			
SON VEL,M/SEC	907.5	914.6	918.6	921.4	925.3	928.0	931.7	936.3	939.8	942.3	945.6	947.9	949.6			

MOLE FRACTIONS

AR	0.00853	0.00855	0.00856	0.00857	0.00858	0.00859	0.00860	0.00861	0.00862	0.00863	0.00864	0.00864	0.00865		
CO	0.03123	0.02860	0.02706	0.02537	0.02445	0.02338	0.02189	0.02007	0.01866	0.01770	0.01638	0.01548	0.01480		
CO2	0.09887	0.10181	0.10353	0.10474	0.10644	0.10762	0.10926	0.11127	0.11281	0.11388	0.11532	0.11631	0.11706		
H	0.00208	0.00160	0.00136	0.00122	0.00103	0.00091	0.00076	0.00061	0.00050	0.00044	0.00036	0.00032	0.00028		
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001		
H2	0.00598	0.00532	0.00494	0.00469	0.00434	0.00410	0.00378	0.00340	0.00312	0.00293	0.00268	0.00251	0.00238		
H2O	0.11289	0.11442	0.11528	0.11587	0.11667	0.11721	0.11795	0.11882	0.11947	0.11991	0.12050	0.12089	0.12118		
NO	0.00525	0.00527	0.00526	0.00524	0.00520	0.00516	0.00509	0.00496	0.00488	0.00480	0.00467	0.00458	0.00450		
N2	0.71200	0.71372	0.71470	0.71538	0.71631	0.71696	0.71786	0.71894	0.71976	0.72033	0.72110	0.72162	0.72202		
O	0.00175	0.00138	0.00119	0.00107	0.00091	0.00081	0.00069	0.00055	0.00046	0.00040	0.00033	0.00029	0.00026		
OH	0.00773	0.00706	0.00666	0.00637	0.00598	0.00570	0.00531	0.00483	0.00446	0.00421	0.00387	0.00363	0.00346		
O2	0.01369	0.01227	0.01145	0.01088	0.01010	0.00955	0.00881	0.00791	0.00723	0.00676	0.00614	0.00572	0.00541		

C	1.000000	H	1.906699	0.000000	0.000000	0.000000	0.000000	100.0000000	-5059.80	L	298.150	F	0.80700
AR	1.000000		0.000000	0.000000	0.000000	00	0.000000	0.01285800	0.00	G	1100.000	0	0.00000
C	1.000000	O	2.000000	0.000000	0.000000	00	0.000000	0.00045600	0.00	G	1100.000	0	0.00000
N	2.000000		0.000000	0.000000	0.000000	00	0.000000	0.75525296	0.00	G	1100.000	0	0.00000
O	2.000000		0.000000	0.000000	0.000000	00	0.000000	0.23143297	0.00	G	1100.000	0	0.00000

CASE=	6	O/F=	146.5400	F/A=	0.00682	PERCENT FUEL=	0.6778	PHI=	0.1000				
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5
T, DEG F	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5
RHO, G/CC	1.3236-4	2.6473-4	3.9709-4	5.2945-4	7.9417-4	1.0589-3	1.5884-3	2.6473-3	3.9709-3	5.2945-3	7.9419-3	1.0589-2	1.3237-2
M, MDL WT	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.967	28.967
CP, CAL/(G)(K)	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905	0.2905
GAMMA (SI)	1.3091	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092	1.3092
SON VEL,M/SEC	707.9	707.9	707.9	707.9	707.9	707.9	707.9	707.9	707.9	707.9	707.9	707.9	707.9

MOLE FRACTIONS													
AR	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926
CO2	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439
H2O	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343
NO	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003
N2	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539	0.77539
OH	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.18702	0.18702	0.18701	0.18701	0.18701	0.18701	0.18701	0.18701	0.18700	0.18700	0.18700	0.18700	0.18699

CASE=	6	O/F=	73.2700	F/A=	0.01365	PERCENT FUEL=	1.3464	PHI=	0.2000				
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1551.2	1551.2	1551.3	1551.3	1551.3	1551.3	1551.3	1551.4	1551.4	1551.4	1551.4	1551.4	1551.4
T, DEG F	2332.4	2332.5	2332.6	2332.6	2332.7	2332.7	2332.7	2332.8	2332.8	2332.8	2332.8	2332.8	2332.8
RHO, G/CC	1.1379-4	2.2757-4	3.4135-4	4.5513-4	6.8269-4	9.1024-4	1.3653-3	2.2756-3	3.4133-3	4.5511-3	6.8266-3	9.1022-3	1.1378-2
M, MDL WT	28.967	28.967	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968
CP, CAL/(G)(K)	0.3039	0.3038	0.3037	0.3036	0.3036	0.3035	0.3035	0.3034	0.3034	0.3034	0.3033	0.3033	0.3033
GAMMA (SI)	1.2917	1.2919	1.2919	1.2920	1.2921	1.2921	1.2921	1.2922	1.2922	1.2922	1.2923	1.2923	1.2923
SON VEL,M/SEC	758.4	758.4	758.4	758.5	758.5	758.5	758.5	758.5	758.6	758.6	758.6	758.6	758.6

MOLE FRACTIONS													
AR	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920
CO2	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829
H2O	0.02665	0.02666	0.02666	0.02666	0.02666	0.02667	0.02667	0.02667	0.02667	0.02667	0.02667	0.02668	0.02668
NO	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147	0.00147
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004
N2	0.76972	0.76972	0.76972	0.76972	0.76972	0.76972	0.76972	0.76972	0.76972	0.76973	0.76973	0.76973	0.76972
OH	0.00007	0.00006	0.00005	0.00005	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002
O2	0.16459	0.16459	0.16459	0.16459	0.16459	0.16459	0.16459	0.16459	0.16459	0.16458	0.16458	0.16457	0.16457

CASE= 7 O/F= 15.4253 F/A= 0.06483 PERCENT FUEL= 6.0882 PHI= 0.9500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2536.0	2574.1	2595.8	2610.9	2631.7	2646.2	2665.9	2689.9	2708.1	2720.6	2737.6	2749.1	2757.8
T, DEG F	4105.1	4173.8	4212.8	4240.0	4277.4	4303.4	4339.0	4382.1	4414.9	4437.4	4467.9	4488.7	4504.3
RHO, G/CC	6.7644-5	1.3368-4	1.9917-4	2.6433-4	3.9400-4	5.2304-4	7.7993-4	1.2906-3	1.9256-3	2.5581-3	3.8183-3	5.0742-3	6.3269-3
M, MOL WT	28.153	28.236	28.283	28.316	28.361	28.393	28.436	28.488	28.527	28.555	28.591	28.616	28.635
CP, CAL/(G)(K)	0.8225	0.7672	0.7373	0.7170	0.6899	0.6715	0.6468	0.6178	0.5961	0.5816	0.5621	0.5490	0.5392
GAMMA (S)	1.1436	1.1489	1.1521	1.1543	1.1576	1.1599	1.1633	1.1676	1.1710	1.1735	1.1770	1.1795	1.1814
SON VEL./M/SEC	925.5	933.2	937.6	940.7	945.0	948.1	952.3	957.4	961.4	964.2	968.0	970.6	972.6

MOLE FRACTIONS

AR	0.00851	0.00854	0.00855	0.00856	0.00857	0.00858	0.00860	0.00861	0.00862	0.00863	0.00864	0.00865	0.00866
CO	0.03582	0.03299	0.03128	0.03007	0.02834	0.02711	0.02537	0.02321	0.02152	0.02033	0.01870	0.01757	0.01671
CO2	0.08747	0.09067	0.09258	0.09394	0.09587	0.09724	0.09916	0.10155	0.10342	0.10472	0.10651	0.10775	0.10869
H	0.00340	0.00267	0.00230	0.00206	0.00176	0.00156	0.00132	0.00106	0.00089	0.00078	0.00064	0.00056	0.00050
H2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00678	0.00604	0.00561	0.00532	0.00492	0.00464	0.00427	0.00382	0.00348	0.00325	0.00294	0.00273	0.00258
H2O	0.10309	0.10492	0.10596	0.10667	0.10765	0.10832	0.10924	0.11034	0.11117	0.11173	0.11250	0.11301	0.11339
NO	0.00805	0.00829	0.00841	0.00849	0.00857	0.00863	0.00868	0.00873	0.00874	0.00874	0.00872	0.00870	0.00868
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.70878	0.71076	0.71150	0.71270	0.71380	0.71456	0.71562	0.71692	0.71791	0.71860	0.71954	0.72018	0.72067
O	0.00368	0.00301	0.00266	0.00243	0.00212	0.00193	0.00167	0.00139	0.00120	0.00107	0.00091	0.00081	0.00074
OH	0.01141	0.01067	0.01021	0.00987	0.00940	0.00906	0.00857	0.00797	0.00749	0.00715	0.00669	0.00636	0.00612
O2	0.02149	0.02145	0.02054	0.01989	0.01899	0.01836	0.01748	0.01639	0.01555	0.01497	0.01418	0.01364	0.01323

CASE= 7 O/F= 14.6540 F/A= 0.06824 PERCENT FUEL= 6.3881 PHI= 1.0000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2551.5	2591.0	2613.6	2629.4	2651.1	2666.2	2687.0	2712.3	2731.7	2745.0	2763.2	2775.6	2785.0
T, DEG F	4132.9	4204.2	4244.8	4273.1	4312.3	4339.5	4376.9	4422.5	4457.3	4481.3	4514.0	4536.4	4553.3
RHO, G/CC	6.6910-5	1.3218-4	1.9690-4	2.6127-4	3.8934-4	5.1678-4	7.7039-4	1.2744-3	1.9009-3	2.5248-3	3.7674-3	5.0054-3	6.2400-3
M, MOL WT	28.017	28.103	28.152	28.186	28.233	28.265	28.310	28.365	28.406	28.435	28.474	28.500	28.520
CP, CAL/(G)(K)	0.8495	0.7927	0.7620	0.7413	0.7134	0.6947	0.6695	0.6399	0.6179	0.6032	0.5835	0.5702	0.5603
GAMMA (S)	1.1421	1.1471	1.1502	1.1524	1.1555	1.1577	1.1609	1.1650	1.1682	1.1706	1.1738	1.1762	1.1780
SON VEL./M/SEC	929.9	937.7	942.3	945.4	949.8	952.9	957.2	962.4	966.5	969.3	973.2	975.9	978.0

MOLE FRACTIONS

AR	0.00844	0.00847	0.00848	0.00849	0.00851	0.00852	0.00853	0.00855	0.00856	0.00857	0.00858	0.00859	0.00859
CO	0.04274	0.03995	0.03826	0.03735	0.03532	0.03409	0.03234	0.03014	0.02841	0.02719	0.02550	0.02432	0.02342
CO2	0.08599	0.08918	0.09109	0.09245	0.09440	0.09578	0.09773	0.10018	0.10211	0.10346	0.10533	0.10663	0.10762
H	0.00405	0.00321	0.00279	0.00251	0.00216	0.00194	0.00165	0.00134	0.00113	0.00100	0.00084	0.00074	0.00067
H2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00843	0.00762	0.00716	0.00683	0.00639	0.00608	0.00566	0.00516	0.00478	0.00452	0.00417	0.00393	0.00375
H2O	0.10627	0.10826	0.10939	0.11107	0.11124	0.11198	0.11299	0.11420	0.11512	0.11575	0.11660	0.11717	0.11760
NO	0.00734	0.00750	0.00756	0.00760	0.00762	0.00763	0.00761	0.00756	0.00749	0.00743	0.00732	0.00722	0.00714
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001
N2	0.70344	0.70552	0.70672	0.70756	0.70873	0.70955	0.71069	0.71209	0.71317	0.71393	0.71496	0.71568	0.71623
O	0.00353	0.00287	0.00253	0.00230	0.00200	0.00181	0.00156	0.00129	0.00110	0.00097	0.00082	0.00073	0.00066
OH	0.01147	0.01070	0.01022	0.00988	0.00938	0.00903	0.00852	0.00789	0.00739	0.00704	0.00655	0.00621	0.00595
O2	0.01829	0.01672	0.01580	0.01515	0.01423	0.01359	0.01269	0.01158	0.01073	0.01014	0.00932	0.00877	0.00835

CASE=	1	0/F=	13.9562	F/A=	0.07165	PERCENT FUEL=	6.6862	PHI=	1.0500										
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8					
T, DEG K		2253.3	2271.3	2280.8	2287.0	2295.0	2300.2	2306.8	2313.9	2318.6	2321.5	2325.0	2327.2	2328.6					
T, DEG F		3596.3	3628.7	3645.7	3656.9	3671.3	3680.7	3692.5	3705.3	3713.8	3719.1	3725.4	3729.2	3731.8					
RHO, G/CC		7.7129-5	1.5324-4	2.2907-4	3.0473-4	4.5576-4	6.0654-4	9.0764-4	1.5089-3	2.2594-3	3.0094-3	4.5084-3	6.0066-3	7.5044-3					
M, MOL WT		28.522	28.560	28.580	28.593	28.610	28.621	28.634	28.649	28.658	28.664	28.671	28.676	28.679					
CP, CAL/(G*IK)		0.5476	0.5109	0.4910	0.4777	0.4599	0.4481	0.4327	0.4154	0.4034	0.3959	0.3866	0.3810	0.3771					
GAMMA (S)		1.1759	1.1846	1.1898	1.1936	1.1991	1.2030	1.2084	1.2151	1.2201	1.2234	1.2277	1.2305	1.2325					
SON VEL, M/SEC		878.9	885.0	888.5	890.9	894.3	896.6	899.7	903.3	905.9	907.6	909.8	911.2	912.2					

MOLE FRACTIONS

AR	0.00857	0.00858	0.00858	0.00859	0.00859	0.00860	0.00860	0.00860	0.00861	0.00861	0.00861	0.00861	0.00861	0.00861					
CO	0.02399	0.02239	0.02154	0.02098	0.02025	0.01978	0.01918	0.01854	0.01812	0.01786	0.01786	0.01756	0.01737	0.01725					
CO2	0.11316	0.11494	0.11589	0.11651	0.11733	0.11785	0.11851	0.11922	0.11969	0.11997	0.12031	0.12051	0.12065	0.12065					
H	0.00074	0.00055	0.00046	0.00041	0.00034	0.00030	0.00025	0.00019	0.00016	0.00014	0.00011	0.00010	0.00009	0.00009					
H2	0.00486	0.00445	0.00424	0.00410	0.00392	0.00381	0.00367	0.00353	0.00343	0.00337	0.00330	0.00326	0.00324	0.00324					
H2O	0.12381	0.12471	0.12519	0.12550	0.12591	0.12617	0.12650	0.12686	0.12710	0.12725	0.12733	0.12754	0.12762	0.12762					
N0	0.00177	0.00159	0.00148	0.00139	0.00127	0.00118	0.00106	0.00090	0.00079	0.00071	0.00061	0.00054	0.00050	0.00050					
N2	0.71667	0.71772	0.71827	0.71864	0.71913	0.71944	0.71985	0.72029	0.72059	0.72078	0.72101	0.72114	0.72124	0.72124					
O	0.00030	0.00020	0.00016	0.00013	0.00010	0.00008	0.00006	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001					
OH	0.00291	0.00245	0.00219	0.00202	0.00178	0.00162	0.00141	0.00117	0.00100	0.00089	0.00075	0.00067	0.00061	0.00061					
O2	0.00322	0.00241	0.00199	0.00172	0.00139	0.00117	0.00091	0.00065	0.00048	0.00039	0.00028	0.00022	0.00018	0.00018					

CASE=	1	0/F=	13.3218	F/A=	0.07506	PERCENT FUEL=	6.9824	PHI=	1.1000										
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8					
T, DEG K		2245.5	2258.6	2264.9	2268.7	2273.5	2276.4	2278.8	2283.2	2285.4	2286.7	2288.2	2289.1	2289.7					
T, DEG F		3582.2	3605.7	3617.0	3624.0	3632.6	3637.7	3643.9	3650.1	3654.0	3656.4	3659.1	3661.8	3661.8					
RHO, G/CC		7.6872-5	1.5300-4	2.2897-4	3.0485-4	4.5648-4	6.0800-4	9.1084-4	1.5161-3	2.2724-3	3.0285-3	4.5402-3	6.0516-3	7.5628-3					
M, MOL WT		28.328	28.356	28.369	28.376	28.386	28.392	28.399	28.406	28.410	28.413	28.416	28.418	28.419					
CP, CAL/(G*IK)		0.4847	0.4488	0.4303	0.4191	0.4054	0.3971	0.3872	0.3774	0.3713	0.3677	0.3635	0.3611	0.3595					
GAMMA (S)		1.1932	1.2048	1.2113	1.2157	1.2214	1.2251	1.2298	1.2348	1.2380	1.2400	1.2423	1.2437	1.2447					
SON VEL, M/SEC		886.8	893.2	896.7	899.0	901.9	903.7	906.0	908.4	910.0	910.9	912.0	912.7	913.1					

MOLE FRACTIONS

AR	0.00848	0.00849	0.00849	0.00850	0.00850	0.00850	0.00850	0.00850	0.00851	0.00851	0.00851	0.00851	0.00851	0.00851					
CO	0.03490	0.03395	0.03351	0.03323	0.03291	0.03271	0.03249	0.03226	0.03213	0.03205	0.03196	0.03191	0.03187	0.03187					
CO2	0.10734	0.10842	0.10893	0.10925	0.10962	0.10985	0.11011	0.11037	0.11052	0.11061	0.11072	0.11078	0.11082	0.11082					
H	0.00089	0.00066	0.00055	0.00049	0.00040	0.00035	0.00029	0.00023	0.00019	0.00017	0.00014	0.00012	0.00011	0.00011					
H2	0.00762	0.00733	0.00719	0.00711	0.00702	0.00696	0.00689	0.00683	0.00679	0.00676	0.00674	0.00672	0.00671	0.00671					
H2O	0.12616	0.12692	0.12730	0.12753	0.12782	0.12799	0.12821	0.12842	0.12856	0.12865	0.12875	0.12884	0.12889	0.12894					
N0	0.00107	0.00088	0.00077	0.00070	0.00060	0.00054	0.00046	0.00037	0.00031	0.00027	0.00023	0.00020	0.00018	0.00018					
N2	0.70988	0.71066	0.71104	0.71127	0.71157	0.71174	0.71196	0.71218	0.71232	0.71240	0.71250	0.71256	0.71260	0.71260					
O	0.00019	0.00011	0.00008	0.00006	0.00005	0.00004	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001					
OH	0.00225	0.00178	0.00154	0.00138	0.00117	0.00104	0.00087	0.00070	0.00058	0.00051	0.00042	0.00037	0.00033	0.00033					
O2	0.00124	0.00079	0.00059	0.00048	0.00035	0.00028	0.00020	0.00012	0.00009	0.00007	0.00005	0.00003	0.00003	0.00003					

CASE=	4	0/F=	13.9562	F/A=	0.07165	PERCENT FUEL=	6.6862	PHI=	1.0500										
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8					
T, DEG K		2452.1	2484.3	2502.4	2514.9	2531.9	2543.5	2559.3	2578.1	2592.1	2601.6	2614.1	2622.5	2628.6					
T, DEG F		3954.1	4012.1	4044.6	4067.1	4097.7	4118.6	4147.1	4180.9	4206.1	4223.1	4245.7	4260.7	4271.8					
RHO, G/CC		7.0004-5	1.3853-4	2.0658-4	2.7433-4	4.0925-4	5.4364-4	8.1139-4	1.3443-3	2.0077-3	2.6690-3	3.9880-3	5.3036-3	6.6170-3					
M, MOL WT		28.171	28.240	28.279	28.305	28.342	28.366	28.400	28.439	28.469	28.489	28.515	28.532	28.545					
CP, CAL/(G)(K)		0.7413	0.6916	0.6645	0.6462	0.6216	0.6049	0.5825	0.5559	0.5361	0.5227	0.5048	0.4927	0.4837					
GAMMA (S)		1.1499	1.1558	1.1594	1.1620	1.1658	1.1685	1.1724	1.1774	1.1815	1.1844	1.1886	1.1917	1.1940					
SON VEL,/M/SEC		912.2	919.5	923.6	926.5	930.5	933.3	937.2	942.0	945.7	948.3	951.8	954.3	956.1					

MOLE FRACTIONS

AR	0.00846	0.00848	0.00849	0.00850	0.00851	0.00852	0.00853	0.00854	0.00855	0.00856	0.00856	0.00857	0.00857	0.00857					
CO	0.03902	0.03652	0.03507	0.03404	0.03260	0.03160	0.03022	0.02854	0.02726	0.02640	0.02524	0.02446	0.02388						
CO2	0.09644	0.09927	0.10092	0.10207	0.10368	0.10480	0.10634	0.10822	0.10963	0.11059	0.11188	0.11274	0.11338						
H	0.00252	0.00197	0.00169	0.00151	0.00129	0.00115	0.00098	0.00079	0.00066	0.00058	0.00049	0.00043	0.00039						
H2	0.00783	0.00712	0.00672	0.00645	0.00606	0.00583	0.00549	0.00510	0.00481	0.00462	0.00436	0.00419	0.00407						
H2O	0.11604	0.11771	0.11864	0.11927	0.12013	0.12071	0.12150	0.12243	0.12312	0.12358	0.12418	0.12459	0.12488						
NO	0.00449	0.00441	0.00434	0.00428	0.00417	0.00408	0.00393	0.00372	0.00353	0.00339	0.00318	0.00302	0.00290						
N2	0.70648	0.70825	0.70926	0.70996	0.71093	0.71159	0.71251	0.71361	0.71445	0.71502	0.71578	0.71630	0.71668						
O	0.00157	0.00121	0.00103	0.00091	0.00077	0.00067	0.00056	0.00043	0.00035	0.00030	0.00024	0.00020	0.00017						
OH	0.00749	0.00677	0.00634	0.00604	0.00561	0.00531	0.00485	0.00437	0.00398	0.00370	0.00333	0.00308	0.00289						
O2	0.00964	0.00828	0.00750	0.00696	0.00623	0.00573	0.00505	0.00425	0.00366	0.00326	0.00275	0.00242	0.00218						

CASE=	4	0/F=	13.3218	F/A=	0.07506	PERCENT FUEL=	6.9824	PHI=	1.1000										
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8					
T, DEG K		2457.9	2489.1	2506.4	2518.2	2534.1	2544.8	2559.0	2575.4	2587.2	2594.9	2604.7	2610.9	2615.4					
T, DEG F		3964.5	4020.7	4051.9	4073.1	4101.6	4120.9	4146.5	4176.0	4197.2	4211.0	4228.7	4240.0	4248.0					
RHO, G/CC		6.9449-5	1.3748-4	2.0506-4	2.7238-4	4.0649-4	5.4013-4	8.0655-4	1.3373-3	1.9985-3	2.6583-3	3.9752-3	5.2900-3	6.6033-3					
M, MOL WT		28.014	28.080	28.117	28.141	28.175	28.197	28.227	28.261	28.285	28.301	28.321	28.334	28.343					
CP, CAL/(G)(K)		0.7318	0.6672	0.6373	0.6169	0.5893	0.5706	0.5454	0.5158	0.4940	0.4796	0.4607	0.4485	0.4397					
GAMMA (S)		1.1528	1.1599	1.1642	1.1674	1.1721	1.1756	1.1806	1.1873	1.1927	1.1966	1.2021	1.2060	1.2089					
SON VEL,/M/SEC		917.1	924.6	928.9	932.0	936.2	939.2	943.4	948.5	952.4	955.1	958.8	961.2	963.1					

MOLE FRACTIONS

AR	0.00829	0.00841	0.00842	0.00843	0.00844	0.00844	0.00845	0.00846	0.00847	0.00847	0.00848	0.00848	0.00849						
CO	0.04755	0.04536	0.04410	0.04323	0.04203	0.04121	0.04011	0.03882	0.03789	0.03728	0.03650	0.03600	0.03565						
CO2	0.09311	0.09563	0.09707	0.09807	0.09944	0.10037	0.10162	0.10308	0.10414	0.10483	0.10571	0.10627	0.10667						
H	0.00294	0.00231	0.00199	0.00179	0.00153	0.00137	0.00116	0.00094	0.00079	0.00070	0.00059	0.00052	0.00047						
H2	0.01009	0.00938	0.00898	0.00872	0.00836	0.00813	0.00781	0.00746	0.00721	0.00705	0.00685	0.00672	0.00663						
H2O	0.11879	0.12052	0.12148	0.12213	0.12300	0.12359	0.12437	0.12527	0.12591	0.12633	0.12687	0.12722	0.12747						
NO	0.00370	0.00353	0.00340	0.00330	0.00313	0.00301	0.00281	0.00255	0.00233	0.00217	0.00195	0.00179	0.00167						
N2	0.70368	0.70243	0.70341	0.70408	0.70500	0.70562	0.70647	0.70745	0.70817	0.70865	0.70926	0.70966	0.70995						
O	0.00132	0.00099	0.00082	0.00072	0.00058	0.00050	0.00040	0.00029	0.00023	0.00019	0.00014	0.00011	0.00010						
OH	0.00698	0.00621	0.00574	0.00542	0.00496	0.00463	0.00419	0.00365	0.00324	0.00296	0.00259	0.00234	0.00216						
O2	0.00645	0.00524	0.00458	0.00413	0.00353	0.00313	0.00261	0.00203	0.00163	0.00138	0.00107	0.00089	0.00076						

CASE= 6 O/F= 48.8467 F/A= 0.02047 PERCENT FUEL= 2.0062 PHI= 0.3000

P. ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P. PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T. DEG K	1753.9	1754.2	1754.4	1754.5	1754.7	1754.8	1754.9	1755.0	1755.1	1755.1	1755.2	1755.2	1755.3
T. DEG F	2697.2	2697.9	2698.2	2698.4	2698.7	2698.9	2699.1	2699.3	2699.4	2699.5	2699.7	2699.7	2699.8
RHO. G/CC	1.0064-4	2.0123-4	3.0182-4	4.0241-4	6.0357-4	8.0472-4	1.2070-3	2.0116-3	3.0172-3	4.0229-3	6.0341-3	8.0454-3	1.0057-2
M. MOL HT	28.966	28.967	28.967	28.967	28.968	28.968	28.968	28.968	28.969	28.969	28.969	28.969	28.969
CP. CAL/(G)(K)	0.3193	0.3184	0.3180	0.3177	0.3174	0.3172	0.3169	0.3166	0.3164	0.3163	0.3162	0.3161	0.3160
GAMMA (S)	1.2747	1.2754	1.2758	1.2760	1.2763	1.2765	1.2767	1.2770	1.2771	1.2772	1.2773	1.2774	1.2775
SON VEL./M/SEC	801.1	801.4	801.5	801.6	801.7	801.8	801.9	802.0	802.1	802.1	802.2	802.2	802.2

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.04198	0.04199	0.04199	0.04199	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200	0.04200
H2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.03958	0.03961	0.03962	0.03963	0.03965	0.03965	0.03967	0.03968	0.03969	0.03969	0.03970	0.03970	0.03971
NO	0.00307	0.00307	0.00307	0.00307	0.00308	0.00308	0.00308	0.00308	0.00308	0.00308	0.00308	0.00308	0.00308
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004	0.00005
N2	0.76374	0.76375	0.76375	0.76376	0.76377	0.76377	0.76378	0.76378	0.76379	0.76379	0.76379	0.76379	0.76379
O	0.00004	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000
OH	0.00036	0.00030	0.00027	0.00026	0.00023	0.00022	0.00019	0.00017	0.00015	0.00014	0.00013	0.00012	0.00011
O2	0.14207	0.14209	0.14209	0.14210	0.14210	0.14211	0.14211	0.14211	0.14211	0.14211	0.14211	0.14211	0.14210

CASE= 6 O/F= 36.6350 F/A= 0.02730 PERCENT FUEL= 2.6571 PHI= 0.4000

P. ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P. PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T. DEG K	1940.7	1942.3	1943.0	1943.5	1944.1	1944.4	1944.9	1945.4	1945.7	1945.9	1946.2	1946.3	1946.5
T. DEG F	3033.6	3036.4	3037.7	3038.6	3039.6	3040.3	3041.1	3042.0	3042.6	3043.0	3043.4	3043.7	3043.9
RHO. G/CC	9.0916-5	1.8171-4	2.7247-4	3.6322-4	5.4469-4	7.2613-4	1.0890-3	1.8146-3	2.7215-3	3.6283-3	5.4418-3	7.2552-3	9.0685-3
M. MOL HT	28.957	28.960	28.961	28.962	28.963	28.964	28.965	28.966	28.967	28.967	28.968	28.968	28.969
CP. CAL/(G)(K)	0.34113	0.3378	0.3362	0.3352	0.3339	0.3331	0.3322	0.3312	0.3305	0.3300	0.3295	0.3292	0.3289
GAMMA (S)	1.2555	1.2579	1.2590	1.2598	1.2606	1.2612	1.2619	1.2626	1.2631	1.2634	1.2638	1.2641	1.2642
SON VEL./M/SEC	836.4	837.5	838.0	838.4	838.8	839.0	839.3	839.7	839.9	840.0	840.2	840.3	840.4

MOLE FRACTIONS

AR	0.00907	0.00907	0.00907	0.00907	0.00907	0.00907	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908
CO	0.00018	0.00013	0.00010	0.00009	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002
CO2	0.05534	0.05539	0.05542	0.05543	0.05545	0.05546	0.05548	0.05549	0.05550	0.05551	0.05551	0.05552	0.05552
H	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001
H2	0.00004	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000
H2O	0.05203	0.05213	0.05219	0.05222	0.05226	0.05229	0.05233	0.05237	0.05240	0.05242	0.05245	0.05246	0.05247
NO	0.00509	0.00511	0.00513	0.00513	0.00514	0.00515	0.00515	0.00516	0.00517	0.00517	0.00517	0.00518	0.00518
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004	0.00005
N2	0.75740	0.75746	0.75750	0.75752	0.75754	0.75756	0.75758	0.75760	0.75761	0.75762	0.75763	0.75764	0.75764
O	0.00020	0.00015	0.00012	0.00010	0.00009	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002
OH	0.00115	0.00098	0.00089	0.00083	0.00075	0.00070	0.00064	0.00056	0.00051	0.00047	0.00043	0.00040	0.00038
O2	0.11949	0.11953	0.11955	0.11956	0.11958	0.11959	0.11960	0.11962	0.11962	0.11963	0.11963	0.11963	0.11963

CASE= 7 O/F= 13.9562 F/A= 0.07165 PERCENT FUEL= 6.6862 PHI= 1.0500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2562.7	2603.0	2625.9	2641.9	2664.0	2679.3	2700.4	2726.0	2745.6	2758.9	2777.1	2789.5	2798.9
T, DEG F	4153.2	4225.6	4267.0	4295.8	4335.5	4363.3	4401.0	4447.1	4482.3	4506.4	4539.1	4561.5	4578.3
RHO, G/CC	6.6278-5	1.3091-4	1.9499-4	2.5873-4	3.8553-4	5.1169-4	7.6276-4	1.2618-3	1.8819-3	2.4996-3	3.7299-3	4.9556-3	6.1781-3
M, MOL WT	27.875	27.961	28.010	28.045	28.092	28.125	28.170	28.224	28.266	28.294	28.332	28.359	28.378
CP, CAL/(G)(K)	0.8617	0.8026	0.7705	0.7488	0.7197	0.7000	0.6735	0.6422	0.6189	0.6031	0.5820	0.5677	0.5570
GAMMA (S)	1.1418	1.1469	1.1501	1.1523	1.1555	1.1578	1.1611	1.1654	1.1689	1.1713	1.1749	1.1774	1.1794
SON VEL, M/SEC	934.2	942.2	946.8	950.0	954.5	957.7	962.0	967.4	971.6	974.5	978.5	981.3	983.4

MOLE FRACTIONS

AR	0.00837	0.00840	0.00841	0.00842	0.00844	0.00845	0.00846	0.00848	0.00849	0.00850	0.00851	0.00852	0.00852
CO	0.05007	0.04743	0.04583	0.04467	0.04303	0.04155	0.04019	0.03810	0.03646	0.03532	0.03373	0.03262	0.03179
CO2	0.08396	0.08703	0.08886	0.09018	0.09205	0.09339	0.09526	0.09761	0.09945	0.10074	0.10251	0.10374	0.10467
H	0.00471	0.00376	0.00328	0.00297	0.00257	0.00231	0.00199	0.00163	0.00139	0.00124	0.00104	0.00092	0.00084
H2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2O	0.01035	0.00949	0.00899	0.00865	0.00818	0.00785	0.00740	0.00686	0.00646	0.00618	0.00581	0.00556	0.00537
N	0.10918	0.11131	0.11252	0.11336	0.11451	0.11530	0.11638	0.11769	0.11867	0.11934	0.12024	0.12085	0.12131
N2	0.00657	0.00663	0.00664	0.00663	0.00659	0.00654	0.00645	0.00630	0.00614	0.00601	0.00581	0.00565	0.00551
O	0.69798	0.70012	0.70136	0.70223	0.70344	0.70429	0.70546	0.70691	0.70803	0.70881	0.70988	0.71061	0.71117
OH	0.00329	0.00264	0.00231	0.00209	0.00180	0.00162	0.00138	0.00112	0.00094	0.00082	0.00068	0.00059	0.00053
O2	0.01129	0.01048	0.00998	0.00962	0.00910	0.00872	0.00819	0.00752	0.00698	0.00661	0.00609	0.00573	0.00545
	0.01423	0.01270	0.01180	0.01117	0.01029	0.00967	0.00882	0.00778	0.00698	0.00643	0.00569	0.00519	0.00482

CASE= 7 O/F= 13.3218 F/A= 0.07506 PERCENT FUEL= 6.9824 PHI= 1.1000

P, ATM	0.5000	1.0000	1.5030	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	233.9	440.9	587.8	734.8
T, DEG K	2569.7	2609.9	2632.7	2648.6	2670.4	2685.4	2705.9	2730.7	2749.2	2761.9	2778.7	2790.1	2798.5
T, DEG F	4165.8	4238.2	4279.2	4307.8	4347.0	4374.0	4411.0	4455.5	4488.9	4511.6	4542.0	4562.4	4577.5
RHO, G/CC	6.5742-5	1.2986-4	1.9344-4	2.5668-4	3.8252-4	5.0775-4	7.5701-4	1.2526-3	1.8688-3	2.4826-3	3.7059-3	4.9253-3	6.1419-3
M, MOL WT	27.725	27.811	27.860	27.893	27.939	27.971	28.015	28.066	28.105	28.132	28.167	28.190	28.207
CP, CAL/(G)(K)	0.8573	0.7948	0.7607	0.7375	0.7063	0.6850	0.6563	0.6221	0.5965	0.5790	0.5556	0.5397	0.5278
GAMMA (S)	1.1428	1.1484	1.1518	1.1542	1.1578	1.1604	1.1642	1.1692	1.1733	1.1763	1.1807	1.1839	1.1864
SON VEL, M/SEC	938.4	946.6	951.3	954.6	959.2	962.4	966.9	972.5	976.9	979.9	984.1	987.0	989.3

MOLE FRACTIONS

AR	0.00830	0.00833	0.00834	0.00835	0.00836	0.00837	0.00839	0.00840	0.00841	0.00842	0.00843	0.00844	0.00845
CO	0.05779	0.05537	0.05392	0.05287	0.05139	0.05033	0.04886	0.04702	0.04560	0.04462	0.04329	0.04238	0.04170
CO2	0.08142	0.08427	0.08597	0.08718	0.08890	0.09011	0.09181	0.09391	0.09552	0.09663	0.09814	0.09917	0.09993
H	0.00534	0.00429	0.00376	0.00341	0.00296	0.00267	0.00231	0.00190	0.00162	0.00145	0.00123	0.00109	0.00100
H2	0.01257	0.01168	0.01118	0.01083	0.01034	0.01001	0.00956	0.00902	0.00861	0.00834	0.00798	0.00774	0.00757
H2O	0.11178	0.11403	0.11530	0.11618	0.11738	0.11821	0.11934	0.12069	0.12170	0.12238	0.12329	0.12390	0.12435
N	0.00576	0.00573	0.00568	0.00562	0.00552	0.00542	0.00527	0.00502	0.00480	0.00462	0.00435	0.00415	0.00399
N2	0.69241	0.69458	0.69582	0.69669	0.69790	0.69875	0.69991	0.70134	0.70242	0.70317	0.70419	0.70488	0.70539
OH	0.00296	0.00234	0.00202	0.00181	0.00154	0.00137	0.00115	0.00091	0.00074	0.00064	0.00051	0.00044	0.00038
O	0.01088	0.01002	0.00949	0.00911	0.00855	0.00815	0.00759	0.00687	0.00631	0.00591	0.00537	0.00499	0.00470
O2	0.01078	0.00935	0.00852	0.00794	0.00714	0.00658	0.00583	0.00492	0.00425	0.00380	0.00321	0.00282	0.00254

CASE=	1	O/F=	12.7426	F/A=	J.07848	PERCENT FUEL=				7.2766	PHI=				1.1500
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000		
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8		
T, DEG K	2221.2	2229.5	2233.2	2235.5	2238.2	2239.7	2241.6	2243.5	2244.7	2245.4	2246.2	2246.7	2247.1		
T, DEG F	3538.5	3553.3	3560.1	3564.1	3569.0	3571.8	3575.3	3578.6	3580.8	3582.0	3583.5	3584.4	3585.0		
RHO, G/CC	7.7096-5	1.5371-4	2.3025-4	3.0674-4	4.5964-4	6.1249-4	9.1809-4	1.5291-3	2.2926-3	3.0560-3	4.5826-3	6.1090-3	7.6353-3		
M, MOL WT	28.104	28.121	28.129	28.133	28.139	28.142	28.146	28.150	28.152	28.153	28.155	28.156	28.157		
CP, CAL/(G)(K)	0.4292	0.4044	0.3933	0.3867	0.3790	0.3745	0.3692	0.3641	0.3609	0.3590	0.3568	0.3556	0.3547		
GAMMA (S)	1.2138	1.2242	1.2293	1.2325	1.2364	1.2388	1.2417	1.2446	1.2465	1.2476	1.2489	1.2497	1.2502		
SON VEL, M/SEC	893.1	898.3	900.8	902.4	904.3	905.4	906.8	908.2	909.0	909.6	910.2	910.5	910.8		

MOLE FRACTIONS

AR	0.00839	0.00839	0.00839	0.00840	0.00340	0.00840	0.00840	0.00840	0.00840	0.00840	0.00840	0.00840	0.00840	0.00840
CO	0.04708	0.04667	0.04650	0.04639	0.04627	0.04621	0.04613	0.04605	0.04601	0.04598	0.04595	0.04593	0.04592	
CO2	0.09997	0.10046	0.10068	0.10061	0.10096	0.10104	0.10114	0.10123	0.10129	0.10133	0.10136	0.10139	0.10140	
H	0.00095	0.00070	0.00058	0.00051	0.00042	0.00037	0.00030	0.00024	0.00019	0.00017	0.00014	0.00012	0.00011	
H2	0.01131	0.01115	0.01108	0.01104	0.01093	0.01097	0.01094	0.01091	0.01089	0.01088	0.01087	0.01086	0.01086	
H2O	0.12736	0.12792	0.12818	0.12834	0.12853	0.12864	0.12878	0.12892	0.12901	0.12906	0.12912	0.12916	0.12918	
NO	0.00059	0.00046	0.00039	0.00035	0.00029	0.00026	0.00021	0.00017	0.00014	0.00012	0.00010	0.00009	0.00008	
N2	0.70226	0.70276	0.70299	0.70312	0.70329	0.70338	0.70350	0.70362	0.70369	0.70374	0.70379	0.70382	0.70384	
O	0.00009	0.00005	0.00004	0.00003	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	
OH	0.00157	0.00119	0.00100	0.00089	0.00074	0.00065	0.00054	0.00042	0.00035	0.00030	0.00025	0.00022	0.00019	
O2	0.00043	0.00024	0.00017	0.00014	0.00009	0.00007	0.00005	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	

CASE=	1	O/F=	12.2117	F/A=	0.08189	PERCENT FUEL=				7.5691	PHI=				1.2000
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000		
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8		
T, DEG K	2188.0	2193.2	2195.6	2197.0	2198.6	2199.6	2200.8	2202.0	2202.7	2203.2	2203.7	2204.0	2204.2		
T, DEG F	3478.6	3488.1	3492.3	3494.8	3497.8	3499.6	3501.7	3503.8	3505.2	3506.9	3507.9	3507.9	3507.9		
RHO, G/CC	7.7604-5	1.5490-4	2.3214-4	3.0935-4	4.6373-4	6.1808-4	9.2670-4	1.5438-3	2.3151-3	3.0862-3	4.6284-3	6.1705-3	7.7125-3		
M, MOL WT	27.866	27.877	27.881	27.884	27.888	27.890	27.892	27.895	27.896	27.897	27.898	27.899	27.899		
CP, CAL/(G)(K)	0.3981	0.3828	0.3762	0.3723	0.3677	0.3651	0.3619	0.3588	0.3569	0.3558	0.3544	0.3536	0.3531		
GAMMA (S)	1.2294	1.2369	1.2404	1.2426	1.2451	1.2467	1.2485	1.2503	1.2515	1.2522	1.2530	1.2535	1.2539		
SON VEL, M/SEC	895.9	899.5	901.2	902.2	903.4	904.1	905.0	905.9	906.4	906.8	907.2	907.4	907.5		

MOLE FRACTIONS

AR	0.00829	0.00829	0.00829	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830	0.00830
CO	0.05942	0.05928	0.05922	0.05919	0.05915	0.05913	0.05911	0.05908	0.05907	0.05906	0.05905	0.05905	0.05904	
CO2	0.09223	0.09243	0.09251	0.09256	0.09262	0.09265	0.09269	0.09272	0.09274	0.09276	0.09277	0.09278	0.09279	
H	0.00093	0.00068	0.00056	0.00049	0.00040	0.00035	0.00029	0.00022	0.00018	0.00016	0.00013	0.00011	0.00010	
H2	0.01581	0.01573	0.01570	0.01569	0.01567	0.01565	0.01564	0.01563	0.01562	0.01562	0.01561	0.01561	0.01561	
H2O	0.12752	0.12792	0.12810	0.12820	0.12833	0.12841	0.12850	0.12860	0.12866	0.12869	0.12873	0.12876	0.12877	
NO	0.00032	0.00024	0.00020	0.00017	0.00015	0.00013	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00004	
N2	0.69425	0.69456	0.69470	0.69478	0.69488	0.69494	0.69502	0.69509	0.69513	0.69516	0.69519	0.69521	0.69522	
O	0.00004	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
OH	0.00105	0.00078	0.00065	0.00057	0.00047	0.00041	0.00034	0.00026	0.00022	0.00019	0.00015	0.00013	0.00012	
O2	0.00014	0.00008	0.00005	0.00004	0.00003	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	

CASE=	3	O/F=	29.3080	F/A=	0.03412	PERCENT FUEL=			3.2995	PHI=			0.5000	
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K		1738.4	1738.8	1739.0	1739.1	1739.3	1739.4	1739.5	1739.6	1739.7	1739.8	1739.9	1739.9	1739.9
T, DEG F		2669.4	2670.1	2670.5	2670.7	2671.0	2671.2	2671.4	2671.6	2671.8	2671.9	2672.0	2672.1	2672.1
RHO, G/CC		1.0154-4	2.0304-4	3.0453-4	4.0602-4	6.0898-4	8.1193-4	1.2178-3	2.0296-3	3.0442-3	4.0589-3	6.0881-3	8.1173-3	1.0146-2
M, MOL WT		28.969	28.970	28.970	28.971	28.971	28.971	28.971	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G)(K)		0.3254	0.3245	0.3240	0.3237	0.3233	0.3231	0.3228	0.3225	0.3223	0.3221	0.3220	0.3218	0.3218
GAMMA (S)		1.2682	1.2690	1.2694	1.2696	1.2699	1.2701	1.2703	1.2706	1.2707	1.2709	1.2710	1.2711	1.2711
SON VEL,M/SEC		795.5	795.8	795.9	796.0	796.2	796.2	796.3	796.4	796.5	796.6	796.6	796.7	796.7

MOLE FRACTIONS

AR	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902
CO	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
CO2	0.06886	0.06887	0.06888	0.06888	0.06888	0.06888	0.06889	0.06889	0.06889	0.06889	0.06889	0.06890	0.06890	0.06890
H2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.06520	0.06524	0.06525	0.06526	0.06528	0.06529	0.06530	0.06531	0.06532	0.06533	0.06534	0.06534	0.06534	0.06535
NO	0.00242	0.00242	0.00242	0.00243	0.00243	0.00243	0.00243	0.00243	0.00243	0.00243	0.00243	0.00243	0.00243	0.00243
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00003
N2	0.75404	0.75406	0.75407	0.75407	0.75408	0.75408	0.75409	0.75410	0.75410	0.75410	0.75411	0.75411	0.75411	0.75411
O	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00038	0.00032	0.00029	0.00027	0.00025	0.00023	0.00021	0.00018	0.00017	0.00015	0.00014	0.00013	0.00012	0.00012
O2	0.10000	0.10001	0.10002	0.10002	0.10003	0.10003	0.10004	0.10004	0.10004	0.10004	0.10004	0.10004	0.10004	0.10004

CASE=	3	O/F=	24.4233	F/A=	0.04094	PERCENT FUEL=			3.9334	PHI=			0.6000	
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K		1920.0	1921.6	1922.4	1922.9	1923.5	1923.8	1924.3	1924.8	1925.2	1925.4	1925.7	1925.8	1925.9
T, DEG F		2996.3	2999.2	3000.6	3001.5	3002.5	3003.2	3004.1	3005.0	3005.6	3006.0	3006.5	3006.8	3007.0
RHO, G/CC		9.1907-5	1.8368-4	2.7542-4	3.6715-4	5.5058-4	7.3398-4	1.1007-3	1.8341-3	2.7508-3	3.6674-3	5.5004-3	7.3333-3	9.1661-3
M, MOL WT		28.960	28.963	28.964	28.965	28.967	28.967	28.968	28.969	28.970	28.970	28.971	28.971	28.972
CP, CAL/(G)(K)		0.3476	0.3437	0.3419	0.3408	0.3394	0.3386	0.3375	0.3364	0.3357	0.3352	0.3346	0.3343	0.3340
GAMMA (S)		1.2500	1.2525	1.2537	1.2545	1.2554	1.2560	1.2567	1.2575	1.2580	1.2584	1.2588	1.2590	1.2592
SON VEL,M/SEC		830.1	831.2	831.8	832.1	832.5	832.8	833.1	833.5	833.7	833.9	834.1	834.2	834.3

MOLE FRACTIONS

AR	0.00895	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896
CO	0.00027	0.00019	0.00016	0.00014	0.00011	0.00010	0.00010	0.00006	0.00006	0.00004	0.00004	0.00003	0.00003	0.00003
CO2	0.08178	0.08186	0.08190	0.08192	0.08195	0.08197	0.08199	0.08201	0.08202	0.08203	0.08204	0.08205	0.08205	0.08205
H	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00006	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2O	0.07731	0.07742	0.07748	0.07752	0.07756	0.07759	0.07763	0.07768	0.07771	0.07773	0.07775	0.07777	0.07777	0.07778
NO	0.00386	0.00388	0.00388	0.00389	0.00390	0.00390	0.00391	0.00391	0.00392	0.00392	0.00392	0.00393	0.00393	0.00393
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00003
N2	0.74812	0.74820	0.74823	0.74825	0.74828	0.74830	0.74832	0.74834	0.74835	0.74836	0.74838	0.74838	0.74839	0.74839
O	0.00014	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001
OH	0.00114	0.00096	0.00087	0.00082	0.00074	0.00069	0.00063	0.00055	0.00050	0.00047	0.00042	0.00039	0.00037	0.00037
O2	0.07837	0.07838	0.07839	0.07839	0.07840	0.07841	0.07842	0.07842	0.07843	0.07843	0.07843	0.07844	0.07844	0.07844

CASE= 4		O/F= 12.7426	F/A= 0.07848	PERCENT FUEL= 7.2766				PHI= 1.1500					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2456.2	2485.1	2500.6	2511.0	2524.6	2533.6	2545.2	2558.0	2566.7	2572.2	2579.0	2583.2	2586.2
T, DEG F	3961.5	4013.4	4041.4	4060.1	4084.6	4100.8	4121.6	4144.6	4160.4	4170.3	4182.6	4190.1	4195.4
RHO, G/CC	6.9073-5	1.3684-4	2.0422-4	2.7138-4	4.0528-4	5.3882-4	8.0523-4	1.3366-3	1.9993-3	2.6611-3	3.9830-3	5.3037-3	6.6235-3
M, MOL WT	27.843	27.904	27.936	27.958	27.986	28.005	28.029	28.055	28.073	28.084	28.097	28.106	28.112
CP, CAL/(G*IK)	0.6784	0.6198	0.5880	0.5666	0.5382	0.5194	0.4949	0.4674	0.4484	0.4365	0.4217	0.4125	0.4062
GAMMA (S)	1.1592	1.1680	1.1735	1.1776	1.1835	1.1878	1.1940	1.2019	1.2079	1.2120	1.2174	1.2210	1.2236
SDN VEL./M/SEC	922.1	930.0	934.5	937.7	942.2	945.3	949.5	954.5	958.2	960.7	963.9	966.0	967.4

MOLE FRACTIONS

AR	0.00831	0.00833	0.00834	0.00834	0.00835	0.00836	0.00837	0.00837	0.00838	0.00838	0.00839	0.00839	0.00839
CO	0.05673	0.05499	0.05402	0.05336	0.05249	0.05152	0.05117	0.05035	0.04979	0.04944	0.04901	0.04875	0.04857
CO2	0.08896	0.09102	0.09215	0.09292	0.09394	0.09461	0.09548	0.09644	0.09710	0.09751	0.09801	0.09831	0.09852
H	0.00329	0.00258	0.00223	0.00200	0.00171	0.00152	0.00129	0.00104	0.00088	0.00077	0.00064	0.00057	0.00051
H2	0.01285	0.01219	0.01183	0.01160	0.01123	0.01110	0.01084	0.01057	0.01039	0.01028	0.01014	0.01006	0.01001
H2O	0.12102	0.12275	0.12368	0.12431	0.12514	0.12568	0.12639	0.12717	0.12772	0.12806	0.12849	0.12875	0.12894
NO	0.00291	0.00268	0.00252	0.00240	0.00221	0.00207	0.00188	0.00163	0.00144	0.00130	0.00113	0.00102	0.00093
N2	0.69459	0.69622	0.69711	0.69771	0.69851	0.69904	0.69974	0.70052	0.70106	0.70140	0.70183	0.70210	0.70229
O	0.00104	0.00074	0.00060	0.00051	0.00040	0.00034	0.00026	0.00018	0.00013	0.00011	0.00008	0.00006	0.00005
OH	0.00625	0.00542	0.00453	0.00459	0.00412	0.00380	0.00336	0.00284	0.00246	0.00221	0.00189	0.00168	0.00153
O2	0.00406	0.00309	0.00259	0.00225	0.00183	0.00156	0.00123	0.00089	0.00067	0.00054	0.00040	0.00032	0.00026

CASE= 4		O/F= 12.2117	F/A= 0.08189	PERCENT FUEL= 7.5691				PHI= 1.2000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2447.1	2472.3	2485.4	2494.0	2504.9	2511.9	2520.7	2530.1	2536.3	2540.1	2544.7	2547.5	2549.4
T, DEG F	3945.0	3990.5	4014.1	4029.5	4049.2	4061.8	4077.6	4094.4	4105.6	4112.4	4120.7	4125.8	4129.2
RHO, G/CC	6.8875-5	1.3660-4	2.0402-4	2.7127-4	4.0545-4	5.3938-4	8.0677-4	1.3406-3	2.0068-3	2.6725-3	4.0028-3	5.3323-3	6.6612-3
M, MOL WT	27.660	27.713	27.740	27.758	27.780	27.794	27.812	27.831	27.844	27.851	27.861	27.866	27.870
CP, CAL/(G*IK)	0.6211	0.5633	0.5331	0.5134	0.4882	0.4721	0.4520	0.4306	0.4081	0.4081	0.3979	0.3918	0.3876
GAMMA (S)	1.1688	1.1795	1.1861	1.1908	1.1975	1.2022	1.2086	1.2161	1.2215	1.2250	1.2295	1.2323	1.2342
SDN VEL./M/SEC	927.2	935.4	940.0	943.2	947.5	950.5	954.3	958.7	961.8	963.8	966.3	967.8	968.9

MOLE FRACTIONS

AR	0.00823	0.00824	0.00825	0.00826	0.00826	0.00827	0.00827	0.00828	0.00828	0.00829	0.00829	0.00829	0.00829
CO	0.06642	0.06519	0.06454	0.06411	0.06357	0.06322	0.06279	0.06234	0.06205	0.06187	0.06166	0.06153	0.06145
CO2	0.08411	0.08563	0.08643	0.08695	0.08761	0.08804	0.08857	0.08912	0.08948	0.08970	0.08996	0.09012	0.09022
H	0.00355	0.00276	0.00237	0.00212	0.00180	0.00160	0.00135	0.00108	0.00090	0.00079	0.00066	0.00058	0.00052
H2	0.01619	0.01563	0.01535	0.01517	0.01494	0.01480	0.01462	0.01444	0.01432	0.01425	0.01417	0.01412	0.01409
H2O	0.12262	0.12426	0.12512	0.12568	0.12641	0.12688	0.12747	0.12811	0.12854	0.12880	0.12912	0.12932	0.12946
NO	0.00219	0.00193	0.00177	0.00165	0.00148	0.00136	0.00119	0.00100	0.00086	0.00077	0.00065	0.00058	0.00052
N2	0.68819	0.68963	0.69039	0.69089	0.69153	0.69195	0.69248	0.69305	0.69343	0.69367	0.69396	0.69413	0.69425
O	0.00075	0.00052	0.00040	0.00033	0.00025	0.00021	0.00015	0.00010	0.00007	0.00006	0.00004	0.00003	0.00003
OH	0.00535	0.00451	0.00403	0.00370	0.00325	0.00295	0.00256	0.00211	0.00179	0.00159	0.00134	0.00118	0.00107
O2	0.00239	0.00170	0.00136	0.00114	0.00088	0.00073	0.00055	0.00037	0.00027	0.00021	0.00015	0.00012	0.00010

CASE= 6 O/F= 29.3080 F/A= 0.03412 PERCENT FUEL= 3.2995 PHI= 0.5000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2108.0	2112.8	2115.2	2116.6	2118.4	2119.6	2121.0	2122.5	2123.6	2124.2	2125.0	2125.5	2125.9
T, DEG F	3334.7	3343.4	3347.6	3350.2	3353.5	3355.5	3358.1	3360.9	3362.7	3363.9	3365.3	3366.2	3366.9
RHO, G/CC	8.3614-5	1.6691-4	2.5012-4	3.3330-4	4.9959-4	6.6582-4	9.9816-4	1.6626-3	2.4928-3	3.3229-3	4.9828-3	6.6424-3	8.3019-3
M, MOL WT	28.927	28.937	28.942	28.945	28.948	28.951	28.954	28.957	28.959	28.960	28.962	28.963	28.964
CP, CAL/(G*IK)	0.3794	0.3692	0.3644	0.3614	0.3577	0.3554	0.3526	0.3496	0.3476	0.3464	0.3449	0.3439	0.3433
GAMMA (S)	1.2314	1.2367	1.2393	1.2410	1.2431	1.2445	1.2461	1.2479	1.2492	1.2499	1.2509	1.2514	1.2519
SON VEL,M/SEC	863.8	866.5	867.8	868.6	869.7	870.4	871.2	872.1	872.7	873.1	873.5	873.8	874.0

MOLE FRACTIONS

AR	0.00900	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00902
CO	0.00095	0.00070	0.00058	0.00051	0.00042	0.00037	0.00030	0.00024	0.00020	0.00017	0.00014	0.00012	0.00011
CO2	0.06785	0.06812	0.06825	0.06833	0.06842	0.06848	0.06855	0.06863	0.06867	0.06870	0.06874	0.06876	0.06877
H	0.00006	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H02	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00018	0.00013	0.00011	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002
H2O	0.06375	0.06402	0.06415	0.06424	0.06436	0.06443	0.06453	0.06464	0.06471	0.06476	0.06483	0.06487	0.06490
NO	0.00713	0.00722	0.00726	0.00728	0.00732	0.00734	0.00737	0.00739	0.00741	0.00742	0.00744	0.00745	0.00746
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004	0.00005
N2	0.75057	0.75079	0.75050	0.75096	0.75104	0.75109	0.75116	0.75122	0.75127	0.75130	0.75133	0.75135	0.75137
O	0.00064	0.00047	0.00039	0.00034	0.00028	0.00025	0.00020	0.00016	0.00013	0.00011	0.00009	0.00008	0.00007
OH	0.00270	0.00232	0.00212	0.00199	0.00181	0.00170	0.00154	0.00137	0.00124	0.00116	0.00105	0.00098	0.00093
O2	0.09717	0.09718	0.09719	0.09720	0.09722	0.09723	0.09724	0.09726	0.09727	0.09728	0.09729	0.09730	0.09730

CASE= 6 O/F= 24.4233 F/A= 0.04094 PERCENT FUEL= 3.9334 PHI= 0.6000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2249.3	2260.6	2266.2	2269.8	2274.4	2277.3	2280.9	2284.8	2287.5	2289.1	2291.2	2292.5	2293.4
T, DEG F	3589.1	3609.3	3619.5	3625.9	3634.2	3639.4	3645.9	3653.0	3657.7	3660.8	3664.5	3666.8	3668.5
RHO, G/CC	7.8171-5	1.5569-4	2.3306-4	3.1034-4	4.6473-4	6.1898-4	9.2724-4	1.5432-3	2.3126-3	3.0815-3	4.6188-3	6.1556-3	7.6919-3
M, MOL WT	28.856	28.881	28.893	28.900	28.910	28.916	28.924	28.933	28.938	28.942	28.946	28.949	28.951
CP, CAL/(G*IK)	0.4459	0.4234	0.4123	0.4053	0.3966	0.3911	0.3842	0.3770	0.3721	0.3691	0.3654	0.3631	0.3615
GAMMA (S)	1.2033	1.2113	1.2156	1.2185	1.2222	1.2246	1.2278	1.2313	1.2337	1.2352	1.2372	1.2384	1.2392
SON VEL,M/SEC	883.1	887.9	890.4	892.0	894.1	895.5	897.2	899.1	900.5	901.3	902.3	903.0	903.5

MOLE FRACTIONS

AR	0.00892	0.00893	0.00893	0.00894	0.00894	0.00894	0.00894	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895
CO	0.00334	0.00257	0.00219	0.00175	0.00164	0.00145	0.00122	0.00097	0.00081	0.00071	0.00059	0.00051	0.00046
CO2	0.07842	0.07925	0.07967	0.07993	0.08026	0.08047	0.08072	0.08100	0.08118	0.08129	0.08142	0.08150	0.08156
H	0.00025	0.00017	0.00013	0.00011	0.00008	0.00007	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
H2	0.00059	0.00045	0.00038	0.00034	0.00028	0.00025	0.00021	0.00017	0.00014	0.00012	0.00010	0.00009	0.00008
H2O	0.07450	0.07504	0.07532	0.07550	0.07575	0.07590	0.07611	0.07634	0.07650	0.07661	0.07675	0.07683	0.07690
NO	0.00867	0.00888	0.00898	0.00905	0.00913	0.00918	0.00925	0.00933	0.00938	0.00941	0.00945	0.00948	0.00950
NO2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004
N2	0.74304	0.74357	0.74383	0.74399	0.74420	0.74434	0.74450	0.74468	0.74480	0.74487	0.74497	0.74502	0.74507
O	0.00142	0.00108	0.00091	0.00080	0.00067	0.00059	0.00049	0.00039	0.00033	0.00028	0.00024	0.00021	0.00018
OH	0.00491	0.00432	0.00399	0.00377	0.00347	0.00327	0.00300	0.00268	0.00245	0.00230	0.00209	0.00196	0.00186
O2	0.07594	0.07575	0.07566	0.07561	0.07555	0.07551	0.07547	0.07543	0.07541	0.07540	0.07539	0.07538	0.07538

CASE= 7 O/F= 12.7426 F/A= 0.07848 PERCENT FUEL= 7.2766 PHI= 1.1500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2572.5	2611.8	2634.0	2649.2	2670.0	2684.2	2703.4	2726.1	2742.7	2753.8	2768.3	2777.8	2784.7
T, DEG F	4170.8	4241.6	4281.4	4308.9	4346.3	4371.9	4406.4	4447.2	4477.2	4497.2	4523.3	4540.4	4552.8
RHO, G/CC	6.5303-5	1.2303-4	1.9224-4	2.5514-4	3.8032-4	5.0495-4	7.5313-4	1.2469-3	1.8612-3	2.4737-3	3.6950-3	4.9132-3	6.1294-3
M, MOL WT	27.569	27.653	27.639	27.731	27.775	27.805	27.845	27.892	27.926	27.949	27.979	27.998	28.012
CP, CAL/(G*IK)	0.8360	0.7695	0.7331	0.7082	0.6747	0.6518	0.6210	0.5845	0.5573	0.5391	0.5150	0.4991	0.4874
GAMMA (S)	1.1452	1.1516	1.1555	1.1584	1.1626	1.1657	1.1704	1.1765	1.1815	1.1853	1.1906	1.1945	1.1975
SON VEL./M/SEC	942.6	951.0	955.8	959.2	964.0	967.3	972.0	977.8	982.3	985.4	989.7	992.7	994.9

MOLE FRACTIONS

AR	0.00823	0.00825	0.00827	0.00828	0.00829	0.00830	0.00831	0.00832	0.00833	0.00834	0.00835	0.00836	0.00837
CO	0.06583	0.06373	0.06247	0.06158	0.06032	0.05944	0.05822	0.05674	0.05563	0.05488	0.05389	0.05324	0.05277
CO2	0.07842	0.08096	0.08246	0.08352	0.08501	0.08604	0.08747	0.08920	0.09049	0.09136	0.09250	0.09325	0.09380
H	0.00593	0.00478	0.00419	0.00381	0.00331	0.00299	0.00258	0.00213	0.00182	0.00162	0.00138	0.00122	0.00111
H2	0.01515	0.01427	0.01377	0.01343	0.01256	0.01264	0.01221	0.01170	0.01133	0.01109	0.01078	0.01058	0.01043
H2O	0.11402	0.11635	0.11766	0.11856	0.11979	0.12063	0.12176	0.12310	0.12408	0.12474	0.12559	0.12616	0.12657
NO	0.00494	0.00482	0.00472	0.00462	0.00447	0.00434	0.00413	0.00383	0.00357	0.00338	0.00309	0.00289	0.00273
N2	0.68673	0.68887	0.69009	0.69093	0.69210	0.69291	0.69402	0.69534	0.69633	0.69700	0.69788	0.69847	0.69890
O	0.00257	0.00199	0.00169	0.00150	0.00125	0.00110	0.00090	0.00069	0.00055	0.00046	0.00036	0.00030	0.00025
OH	0.01026	0.00934	0.00878	0.00837	0.00778	0.00736	0.00677	0.00602	0.00544	0.00504	0.00449	0.00411	0.00383
O2	0.00792	0.00663	0.00590	0.00540	0.00472	0.00426	0.00364	0.00293	0.00242	0.00210	0.00168	0.00143	0.00125

CASE= 7 O/F= 12.2117 F/A= 0.08189 PERCENT FUEL= 7.5691 PHI= 1.2000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2570.9	2608.5	2629.4	2643.6	2662.8	2675.7	2692.9	2712.7	2726.8	2736.0	2747.7	2755.2	2760.5
T, DEG F	4167.8	4235.6	4273.2	4298.9	4333.4	4356.6	4387.5	4423.1	4448.6	4465.1	4486.2	4499.7	4509.3
RHO, G/CC	6.4959-5	1.2841-4	1.9139-4	2.5409-4	3.7893-4	5.0329-4	7.5108-4	1.2445-3	1.8590-3	2.4720-3	3.6953-3	4.9164-3	6.1360-3
M, MOL WT	27.407	27.486	27.530	27.559	27.599	27.626	27.661	27.702	27.731	27.749	27.773	27.788	27.799
CP, CAL/(G*IK)	0.7994	0.7295	0.6913	0.6654	0.6306	0.6072	0.5760	0.5399	0.5139	0.4969	0.4752	0.4613	0.4514
GAMMA (S)	1.1493	1.1567	1.1613	1.1648	1.1699	1.1737	1.1792	1.1865	1.1924	1.1966	1.2025	1.2066	1.2097
SON VEL./M/SEC	946.8	955.3	960.3	963.8	968.7	972.2	977.0	982.8	987.3	990.4	994.6	997.3	999.4

MOLE FRACTIONS

AR	0.00815	0.00818	0.00819	0.00820	0.00821	0.00822	0.00823	0.00824	0.00825	0.00826	0.00826	0.00827	0.00827
CO	0.07416	0.07242	0.07141	0.07070	0.06971	0.06903	0.06811	0.06703	0.06625	0.06574	0.06509	0.06467	0.06438
CO2	0.07500	0.07716	0.07841	0.07929	0.08049	0.08131	0.08243	0.08373	0.08466	0.08528	0.08606	0.08656	0.08691
H	0.00645	0.00520	0.00455	0.00423	0.00359	0.00324	0.00279	0.00229	0.00195	0.00174	0.00147	0.00130	0.00118
H2	0.01815	0.01731	0.01685	0.01653	0.01610	0.01581	0.01543	0.01500	0.01469	0.01450	0.01425	0.01410	0.01399
H2O	0.11585	0.11820	0.11952	0.12041	0.12162	0.12244	0.12353	0.12479	0.12570	0.12629	0.12705	0.12754	0.12789
NO	0.00413	0.00394	0.00380	0.00368	0.00348	0.00334	0.00311	0.00280	0.00255	0.00236	0.00211	0.00193	0.00179
N2	0.68091	0.68297	0.68413	0.68493	0.68602	0.68676	0.68776	0.68892	0.68977	0.69033	0.69105	0.69151	0.69184
O	0.00214	0.00162	0.00135	0.00118	0.00096	0.00083	0.00066	0.00049	0.00037	0.00031	0.00023	0.00019	0.00016
OH	0.00944	0.00847	0.00788	0.00745	0.00685	0.00641	0.00581	0.00506	0.00450	0.00411	0.00359	0.00325	0.00300
O2	0.00562	0.00452	0.00391	0.00350	0.00296	0.00261	0.00215	0.00164	0.00130	0.00109	0.00084	0.00069	0.00058

CASE=	1	0/F=	10.4671	F/A=	0.09554	PERCENT FUEL=	8.7206	PHI=	1.4000										
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8					
T, DEG K		2034.7	2036.1	2036.8	2037.1	2037.6	2037.9	2038.2	2038.5	2038.7	2038.9	2039.0	2039.1	2039.2					
T, DEG F		3202.8	3205.3	3206.5	3207.2	3208.0	3208.5	3209.0	3209.6	3210.0	3210.2	3210.5	3210.7	3210.8					
RHO, G/CC		8.0604-5	1.6111-4	2.4161-4	3.2209-4	4.8305-4	6.4399-4	9.6586-4	1.6096-3	2.4141-3	3.2187-3	4.8277-3	6.4367-3	8.0457-3					
M, MOL WT		26.915	26.918	26.920	26.921	26.922	26.922	26.923	26.924	26.924	26.924	26.925	26.925	26.925					
CP, CAL/(G)(K)		0.3654	0.3617	0.3600	0.3591	0.3579	0.3572	0.3563	0.3555	0.3550	0.3547	0.3543	0.3541	0.3539					
GAMMA (S)		1.2566	1.2589	1.2599	1.2606	1.2613	1.2617	1.2623	1.2628	1.2632	1.2634	1.2636	1.2637	1.2638					
SON VEL, M/SEC		888.7	889.8	890.3	890.6	890.9	891.1	891.4	891.6	891.8	891.9	892.0	892.0	892.1					

MOLE FRACTIONS

AR	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791					
CO	0.10230	0.10234	0.10235	0.10237	0.10238	0.10239	0.10239	0.10240	0.10241	0.10241	0.10241	0.10242	0.10242	0.10242					
CO2	0.06642	0.06640	0.06639	0.06639	0.06638	0.06638	0.06637	0.06637	0.06636	0.06636	0.06636	0.06636	0.06636	0.06636					
H	0.00057	0.00041	0.00034	0.00029	0.00024	0.00021	0.00017	0.00013	0.00011	0.00009	0.00008	0.00007	0.00007	0.00006					
H2	0.03970	0.03972	0.03973	0.03973	0.03974	0.03974	0.03975	0.03975	0.03976	0.03976	0.03976	0.03976	0.03976	0.03976					
H2O	0.12052	0.12063	0.12068	0.12071	0.12074	0.12076	0.12079	0.12081	0.12083	0.12084	0.12085	0.12085	0.12085	0.12086					
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001					
NO	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000					
N2	0.66235	0.66243	0.66247	0.66249	0.66252	0.66253	0.66255	0.66257	0.66258	0.66259	0.66259	0.66260	0.66260	0.66261					
OH	0.00019	0.00014	0.00011	0.00010	0.00008	0.00007	0.00006	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002					

CASE=	1	0/F=	9.1588	F/A=	0.10919	PERCENT FUEL=	9.8437	PHI=	1.6000										
P, ATM		0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000					
P, PSIA		7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8					
T, DEG K		1884.3	1884.9	1885.1	1885.2	1885.4	1885.5	1885.6	1885.7	1885.8	1885.8	1885.9	1885.9	1886.0					
T, DEG F		2932.1	2933.0	2933.4	2933.7	2934.0	2934.2	2934.4	2934.6	2934.7	2934.8	2934.9	2935.0	2935.0					
RHO, G/CC		8.4183-5	1.6833-4	2.5247-4	3.3660-4	5.0486-4	6.7312-4	1.0096-3	1.6826-3	2.5239-3	3.3651-3	5.0475-3	6.7299-3	8.4123-3					
M, MOL WT		26.033	26.034	26.035	26.035	26.036	26.036	26.036	26.036	26.036	26.037	26.037	26.037	26.037					
CP, CAL/(G)(K)		0.3614	0.3599	0.3593	0.3589	0.3584	0.3581	0.3578	0.3575	0.3573	0.3572	0.3570	0.3569	0.3569					
GAMMA (S)		1.2692	1.2702	1.2706	1.2708	1.2712	1.2713	1.2716	1.2718	1.2719	1.2720	1.2721	1.2722	1.2722					
SON VEL, M/SEC		874.0	874.4	874.6	874.7	874.8	874.9	875.0	875.1	875.2	875.2	875.3	875.3	875.3					

MOLE FRACTIONS

AR	0.00755	0.00755	0.00755	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756	0.00756					
CO	0.13424	0.13436	0.13437	0.13437	0.13438	0.13439	0.13439	0.13440	0.13440	0.13440	0.13440	0.13440	0.13440	0.13440					
CO2	0.04984	0.04982	0.04982	0.04981	0.04981	0.04980	0.04980	0.04980	0.04980	0.04980	0.04980	0.04980	0.04980	0.04980					
H	0.00026	0.00019	0.00015	0.00013	0.00011	0.00009	0.00008	0.00006	0.00005	0.00004	0.00003	0.00003	0.00003	0.00003					
H2	0.06925	0.06927	0.06928	0.06929	0.06929	0.06929	0.06930	0.06930	0.06930	0.06930	0.06930	0.06930	0.06930	0.06930					
H2O	0.10595	0.10598	0.10599	0.10600	0.10601	0.10602	0.10602	0.10603	0.10603	0.10604	0.10604	0.10604	0.10604	0.10604					
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002					
N2	0.63278	0.63280	0.63282	0.63282	0.63283	0.63284	0.63284	0.63284	0.63285	0.63285	0.63286	0.63286	0.63286	0.63286					
OH	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000					

CASE= 3 O/F= 20.9343 F/A= 0.04777 PERCENT FUEL= 4.5591 PHI= 0.7000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2082.2	2087.4	2089.9	2091.4	2093.4	2094.6	2096.1	2097.8	2098.8	2099.5	2100.4	2100.9	2101.3
T, DEG F	3288.3	3297.6	3302.1	3304.9	3308.4	3310.6	3313.4	3316.3	3318.2	3319.4	3321.0	3321.9	3322.6
RHO, G/CC	8.4651-5	1.6395-4	2.5316-4	3.3734-4	5.0560-4	6.7380-4	1.0101-3	1.6824-3	2.5224-3	3.3623-3	5.0418-3	6.7210-3	8.3999-3
M, MOL WT	28.927	28.938	28.943	28.946	28.950	28.953	28.956	28.960	28.962	28.963	28.965	28.966	28.967
CP, CAL/(G)(K)	0.3893	0.3775	0.3719	0.3685	0.3642	0.3616	0.3583	0.3549	0.3527	0.3513	0.3496	0.3485	0.3478
GAMMA (S)	1.2254	1.2312	1.2341	1.2359	1.2383	1.2398	1.2416	1.2436	1.2449	1.2458	1.2468	1.2475	1.2479
SON VEL,M/SEC	856.4	859.3	860.7	861.7	862.8	863.6	864.5	865.4	866.1	866.5	867.0	867.3	867.6

MOLE FRACTIONS

AR	0.00889	0.00889	0.00889	0.00889	0.00889	0.00889	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890
CO	0.00139	0.00103	0.00086	0.00075	0.00063	0.00055	0.00045	0.00036	0.00029	0.00026	0.00021	0.00018	0.00016
CO2	0.09355	0.09395	0.09413	0.09425	0.09439	0.09448	0.09458	0.09469	0.09476	0.09480	0.09486	0.09489	0.09491
H	0.00006	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H02	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00027	0.00020	0.00017	0.00015	0.00012	0.00011	0.00009	0.00007	0.00006	0.00005	0.00004	0.00004	0.00003
H2O	0.08869	0.08898	0.08913	0.08922	0.08934	0.08942	0.08952	0.08963	0.08971	0.08976	0.08983	0.08987	0.08990
NO	0.00511	0.00517	0.00520	0.00522	0.00525	0.00526	0.00528	0.00530	0.00532	0.00533	0.00534	0.00534	0.00535
NO2	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003
N2	0.74177	0.74202	0.74214	0.74221	0.74230	0.74236	0.74243	0.74251	0.74256	0.74259	0.74263	0.74265	0.74267
O	0.00041	0.00030	0.00025	0.00022	0.00018	0.00016	0.00013	0.00010	0.00008	0.00007	0.00006	0.00005	0.00005
OH	0.00249	0.00214	0.00196	0.00184	0.00167	0.00157	0.00143	0.00127	0.00115	0.00107	0.00097	0.00091	0.00086
O2	0.05737	0.05727	0.05723	0.05721	0.05719	0.05717	0.05716	0.05715	0.05714	0.05714	0.05714	0.05714	0.05714

CASE= 3 O/F= 18.3175 F/A= 0.05459 PERCENT FUEL= 5.1767 PHI= 0.8000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2215.9	2228.3	2234.6	2238.6	2243.7	2247.0	2251.1	2255.6	2258.6	2260.5	2262.8	2264.3	2265.3
T, DEG F	3529.0	3551.3	3562.6	3569.8	3579.0	3584.9	3592.3	3600.3	3605.8	3609.2	3613.4	3616.0	3617.9
RHO, G/CC	7.9319-5	1.5790-4	2.3630-4	3.1460-4	4.7100-4	6.2724-4	9.3943-4	1.5631-3	2.3421-3	3.1206-3	4.6769-3	6.2325-3	7.7876-3
M, MOL WT	28.846	28.873	28.886	28.895	28.906	28.913	28.922	28.931	28.938	28.942	28.947	28.950	28.952
CP, CAL/(G)(K)	0.4676	0.4417	0.4288	0.4205	0.4100	0.4034	0.3951	0.3862	0.3802	0.3762	0.3720	0.3691	0.3671
GAMMA (S)	1.1953	1.2037	1.2083	1.2115	1.2156	1.2184	1.2219	1.2260	1.2288	1.2306	1.2329	1.2344	1.2354
SON VEL,M/SEC	873.8	878.9	881.6	883.4	885.7	887.3	889.3	891.5	893.0	894.0	895.2	895.9	896.5

MOLE FRACTIONS

AR	0.00880	0.00881	0.00882	0.00882	0.00882	0.00882	0.00883	0.00883	0.00883	0.00883	0.00883	0.00884	0.00884
CO	0.00492	0.00385	0.00330	0.00276	0.00251	0.00223	0.00189	0.00151	0.00126	0.00111	0.00092	0.00081	0.00073
CO2	0.10254	0.10371	0.10430	0.10469	0.10517	0.10547	0.10586	0.10627	0.10654	0.10671	0.10691	0.10704	0.10713
H	0.00026	0.00017	0.00013	0.00011	0.00009	0.00007	0.00006	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001
H02	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00090	0.00069	0.00055	0.00053	0.00045	0.00040	0.00033	0.00027	0.00022	0.00019	0.00016	0.00014	0.00013
H2O	0.09905	0.09964	0.09995	0.10015	0.10041	0.10058	0.10079	0.10104	0.10121	0.10132	0.10146	0.10155	0.10161
NO	0.00569	0.00581	0.00588	0.00592	0.00597	0.00600	0.00605	0.00609	0.00613	0.00615	0.00617	0.00619	0.00620
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
N2	0.73459	0.73522	0.73553	0.73573	0.73599	0.73615	0.73635	0.73657	0.73672	0.73682	0.73693	0.73700	0.73705
O	0.00082	0.00062	0.00053	0.00047	0.00039	0.00035	0.00029	0.00023	0.00019	0.00017	0.00014	0.00012	0.00011
OH	0.00418	0.00369	0.00342	0.00323	0.00298	0.00281	0.00258	0.00231	0.00211	0.00198	0.00181	0.00169	0.00160
O2	0.03823	0.03777	0.03754	0.03740	0.03722	0.03710	0.03697	0.03683	0.03674	0.03669	0.03662	0.03659	0.03656

CASE= 6 O/F= 20.9343 F/A= 0.04777 PERCENT FUEL= 4.5591 PHI= 0.7000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2360.2	2380.1	2390.6	2397.5	2406.5	2412.4	2419.9	2428.3	2434.1	2437.8	2442.4	2445.4	2447.5
T, DEG F	3788.6	3824.6	3843.4	3855.9	3872.0	3882.6	3896.1	3911.2	3921.6	3928.3	3936.6	3941.9	3945.7
RHO, G/CC	7.4176-5	1.4733-4	2.2020-4	2.9291-4	4.3803-4	5.8288-4	8.7209-4	1.4494-3	2.1699-3	2.8896-3	4.3276-3	5.7645-3	7.2006-3
M, MOL WT	28.731	28.775	28.798	28.813	28.833	28.845	28.862	28.880	28.893	28.901	28.911	28.917	28.922
CP, CAL/(G)(K)	0.5439	0.5069	0.4878	0.4753	0.4592	0.4488	0.4355	0.4209	0.4110	0.4046	0.3967	0.3918	0.3883
GAMMA (S)	1.1775	1.1860	1.1909	1.1944	1.1991	1.2023	1.2056	1.2119	1.2156	1.2181	1.2214	1.2235	1.2250
SON VEL, M/SEC	896.8	903.1	906.6	909.0	912.2	914.3	917.2	920.4	922.8	924.3	926.2	927.5	928.4

MOLE FRACTIONS

AR	0.00883	0.00884	0.00885	0.00885	0.00886	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.00844	0.00689	0.00606	0.00551	0.00479	0.00432	0.00371	0.00305	0.00259	0.00230	0.00194	0.00171	0.00155
CO2	0.08586	0.08755	0.08846	0.08906	0.08984	0.09035	0.09101	0.09174	0.09224	0.09256	0.09295	0.09320	0.09337
H	0.00070	0.00049	0.00039	0.00033	0.00026	0.00022	0.00017	0.00013	0.00010	0.00008	0.00006	0.00005	0.00004
H2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
H2	0.00144	0.00116	0.00101	0.00091	0.00078	0.00070	0.00060	0.00049	0.00041	0.00037	0.00031	0.00027	0.00025
H2O	0.08418	0.08507	0.08554	0.08586	0.08628	0.08655	0.08692	0.08734	0.08764	0.08784	0.08809	0.08826	0.08838
NO	0.00937	0.00969	0.00986	0.00998	0.01012	0.01022	0.01035	0.01049	0.01059	0.01065	0.01073	0.01078	0.01082
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00003
N2	0.73460	0.73557	0.73667	0.73640	0.73683	0.73711	0.73747	0.73787	0.73814	0.73832	0.73854	0.73867	0.73877
O	0.00234	0.00184	0.00158	0.00142	0.00121	0.00108	0.00092	0.00074	0.00062	0.00055	0.00046	0.00040	0.00036
OH	0.00730	0.00659	0.00618	0.00590	0.00550	0.00522	0.00484	0.00439	0.00405	0.00382	0.00350	0.00329	0.00314
O2	0.05693	0.05631	0.05599	0.05577	0.05550	0.05533	0.05511	0.05487	0.05471	0.05461	0.05450	0.05443	0.05438

CASE= 6 O/F= 18.3175 F/A= 0.05459 PERCENT FUEL= 5.1767 PHI= 0.8000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2441.9	2470.3	2485.9	2496.5	2510.6	2520.1	2532.7	2547.2	2557.7	2564.6	2573.5	2579.3	2583.4
T, DEG F	3935.8	3986.9	4014.9	4033.9	4059.4	4076.5	4099.2	4125.3	4144.2	4156.6	4172.6	4183.0	4190.5
RHO, G/CC	7.1243-5	1.4116-4	2.1066-4	2.7992-4	4.1796-4	5.5559-4	8.3004-4	1.3770-3	2.0587-3	2.7391-3	4.0972-3	5.4531-3	6.8075-3
M, MOL WT	28.551	28.613	28.648	28.671	28.702	28.723	28.751	28.783	28.806	28.821	28.840	28.853	28.862
CP, CAL/(G)(K)	0.6589	0.6113	0.5857	0.5685	0.5458	0.5306	0.5106	0.4877	0.4712	0.4605	0.4467	0.4377	0.4313
GAMMA (S)	1.1590	1.1662	1.1705	1.1736	1.1781	1.1813	1.1858	1.1915	1.1959	1.1990	1.2032	1.2060	1.2082
SON VEL, M/SEC	907.8	914.9	919.0	921.8	925.6	928.3	932.0	936.3	939.6	941.8	944.8	946.8	948.2

MOLE FRACTIONS

AR	0.00871	0.00873	0.00874	0.00875	0.00876	0.00877	0.00877	0.00878	0.00879	0.00880	0.00880	0.00881	0.00881
CO	0.01667	0.01436	0.01305	0.01215	0.01092	0.01009	0.00896	0.00765	0.00670	0.00607	0.00525	0.00472	0.00431
CO2	0.08969	0.09223	0.09367	0.09466	0.09600	0.09691	0.09814	0.09957	0.10061	0.10130	0.10219	0.10276	0.10311
H	0.00146	0.00108	0.00089	0.00078	0.00064	0.00055	0.00044	0.00034	0.00027	0.00023	0.00018	0.00015	0.00011
H2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00002
H2	0.00289	0.00242	0.00217	0.00200	0.00177	0.00162	0.00142	0.00120	0.00104	0.00094	0.00080	0.00072	0.00066
H2O	0.09285	0.09410	0.09479	0.09525	0.09588	0.09630	0.09687	0.09753	0.09801	0.09833	0.09875	0.09903	0.09923
NO	0.00920	0.00956	0.00976	0.00989	0.01006	0.01018	0.01033	0.01051	0.01064	0.01072	0.01083	0.01090	0.01095
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
N2	0.72530	0.72671	0.72749	0.72802	0.72873	0.72920	0.72983	0.73056	0.73108	0.73143	0.73187	0.73216	0.73237
O	0.00307	0.00248	0.00217	0.00197	0.00171	0.00154	0.00133	0.00110	0.00093	0.00083	0.00071	0.00063	0.00057
OH	0.00930	0.00857	0.00814	0.00782	0.00738	0.00707	0.00664	0.00610	0.00569	0.00540	0.00501	0.00474	0.00454
O2	0.04084	0.03974	0.03912	0.03870	0.03813	0.03775	0.03723	0.03664	0.03621	0.03594	0.03558	0.03535	0.03519

CASE= 7 O/F= 10.4671 F/A= 0.09554 PERCENT FUEL= 8.7206 PHI= 1.4000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2519.1	2544.1	2556.8	2565.0	2575.4	2581.9	2590.1	2598.8	2604.5	2608.0	2612.3	2614.9	2616.7
T, DEG F	4074.8	4119.7	4142.6	4157.3	4176.0	4187.8	4202.5	4218.1	4228.4	4234.8	4242.5	4247.2	4250.4
RHO, G/CC	6.4569-5	1.2812-4	1.9140-4	2.5455-4	3.8059-4	5.0642-4	7.5770-4	1.2594-3	1.8858-3	2.5117-3	3.7626-3	5.0128-3	6.2625-3
M, MOL WT	26.694	26.746	26.772	26.789	26.810	26.823	26.840	26.857	26.869	26.876	26.885	26.890	26.894
CP, CAL/(G*IK)	0.5944	0.5381	0.5102	0.4927	0.4708	0.4572	0.4405	0.4232	0.4120	0.4052	0.3970	0.3921	0.3888
GAMMA (S)	1.1808	1.1927	1.1996	1.2044	1.2109	1.2153	1.2211	1.2277	1.2323	1.2352	1.2389	1.2412	1.2428
SON VEL, M/SEC	962.6	971.2	976.0	979.2	983.4	986.2	989.8	993.8	996.6	998.3	1000.4	1001.8	1002.7

MOLE FRACTIONS

AR	0.00784	0.00786	0.00787	0.00787	0.00788	0.00788	0.00789	0.00789	0.00789	0.00790	0.00790	0.00790	0.00790
CO	0.10872	0.10847	0.10835	0.10827	0.10817	0.10811	0.10804	0.10797	0.10792	0.10790	0.10787	0.10785	0.10784
CO2	0.05861	0.05918	0.05947	0.05966	0.05989	0.06003	0.06021	0.06039	0.06050	0.06057	0.06066	0.06071	0.06074
H	0.00722	0.00567	0.00487	0.00436	0.00371	0.00330	0.00279	0.00223	0.00187	0.00164	0.00136	0.00119	0.00107
H2	0.03535	0.03509	0.03496	0.03489	0.03473	0.03474	0.03467	0.03461	0.03457	0.03455	0.03453	0.03452	0.03451
H2O	0.11772	0.11952	0.12045	0.12106	0.12183	0.12232	0.12293	0.12359	0.12402	0.12429	0.12462	0.12482	0.12496
NO	0.00152	0.00129	0.00116	0.00106	0.00094	0.00085	0.00073	0.00060	0.00051	0.00046	0.00038	0.00034	0.00031
N2	0.65617	0.65755	0.65826	0.65872	0.65930	0.65967	0.66014	0.66064	0.66097	0.66118	0.66143	0.66158	0.66168
O	0.00069	0.00045	0.00034	0.00028	0.00020	0.00016	0.00012	0.00008	0.00005	0.00004	0.00003	0.00002	0.00002
OH	0.00521	0.00430	0.00379	0.00345	0.00300	0.00270	0.00231	0.00189	0.00159	0.00141	0.00118	0.00104	0.00094
O2	0.00094	0.00062	0.00048	0.00039	0.00029	0.00024	0.00017	0.00011	0.00008	0.00006	0.00004	0.00003	0.00003

CASE= 7 O/F= 9.1588 F/A= 0.10919 PERCENT FUEL= 9.8437 PHI= 1.6000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2411.1	2424.6	2431.2	2435.2	2440.2	2443.3	2447.1	2451.0	2453.6	2455.1	2456.9	2458.1	2458.8
T, DEG F	3880.2	3904.6	3916.4	3923.7	3932.7	3938.3	3945.1	3952.1	3956.7	3959.5	3962.8	3964.8	3966.2
RHO, G/CC	6.5518-5	1.3044-4	1.9524-4	2.5997-4	3.8931-4	5.1855-4	7.7686-4	1.2931-3	1.9380-3	2.5827-3	3.8718-3	5.1605-3	6.4490-3
M, MOL WT	25.925	25.953	25.966	25.975	25.985	25.991	25.999	26.007	26.012	26.016	26.019	26.022	26.023
CP, CAL/(G*IK)	0.4725	0.4440	0.4306	0.4223	0.4123	0.4062	0.3989	0.3913	0.3865	0.3836	0.3801	0.3780	0.3765
GAMMA (S)	1.2175	1.2276	1.2328	1.2362	1.2405	1.2433	1.2468	1.2505	1.2529	1.2544	1.2563	1.2574	1.2582
SON VEL, M/SEC	970.3	976.5	979.6	981.7	984.2	985.8	987.8	989.9	991.3	992.1	993.1	993.8	994.2

MOLE FRACTIONS

AR	0.00752	0.00753	0.00753	0.00754	0.00754	0.00754	0.00754	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755
CO	0.14053	0.14077	0.14088	0.14096	0.14105	0.14110	0.14117	0.14125	0.14129	0.14132	0.14136	0.14138	0.14139
CO2	0.04288	0.04283	0.04281	0.04280	0.04278	0.04277	0.04276	0.04274	0.04273	0.04273	0.04272	0.04271	0.04271
H	0.00583	0.00440	0.00371	0.00337	0.00274	0.00241	0.00200	0.00158	0.00130	0.00114	0.00094	0.00082	0.00073
H2	0.06110	0.06135	0.06148	0.06156	0.06166	0.06172	0.06180	0.06189	0.06194	0.06197	0.06201	0.06204	0.06205
H2O	0.10961	0.11048	0.11091	0.11118	0.11150	0.11171	0.11195	0.11221	0.11238	0.11248	0.11260	0.11267	0.11272
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001
NO	0.00039	0.00030	0.00026	0.00023	0.00020	0.00017	0.00014	0.00012	0.00010	0.00008	0.00007	0.00006	0.00005
N2	0.62994	0.63067	0.63102	0.63124	0.63150	0.63167	0.63187	0.63209	0.63222	0.63231	0.63241	0.63247	0.63251
O	0.00012	0.00007	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
OH	0.00199	0.00153	0.00131	0.00116	0.00098	0.00086	0.00072	0.00057	0.00047	0.00042	0.00034	0.00030	0.00027
O2	0.00009	0.00006	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	3	O/F=	17.2400	F/A=	0.05800	PERCENT FUEL=	5.4825	PHI=	0.8500										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2269.3	2286.2	2295.1	2300.8	2308.4	2313.2	2319.5	2326.4	2331.1	2334.1	2337.9	2340.3	2342.0						
T, DEG F	3625.1	3655.5	3671.4	3681.8	3695.3	3704.1	3715.4	3727.8	3736.3	3741.7	3748.5	3752.8	3755.9						
RHO, G/CC	7.7276-5	1.5360-4	2.2967-4	3.0559-4	4.5716-4	6.0848-4	9.1069-4	1.5141-3	2.2673-3	3.0199-3	4.5238-3	6.0267-3	7.5288-3						
M, MOL WT	28.779	28.816	28.835	28.848	28.864	28.875	28.888	28.903	28.914	28.920	28.928	28.934	28.937						
CP, CAL/(G)(K)	0.5217	0.4887	0.4715	0.4603	0.4459	0.4365	0.4245	0.4114	0.4024	0.3967	0.3896	0.3851	0.3820						
GAMMA (S)	1.1811	1.1895	1.1944	1.1977	1.2024	1.2056	1.2099	1.2149	1.2186	1.2210	1.2242	1.2262	1.2276						
SON VEL./M/SEC	880.0	885.8	889.0	891.2	894.1	896.1	898.7	901.7	903.8	905.2	907.0	908.1	908.9						

MOLE FRACTIONS

AR	0.00876	0.00877	0.00877	0.00878	0.00878	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880						
CO	0.00814	0.00660	0.00579	0.00525	0.00455	0.00409	0.00351	0.00287	0.00243	0.00216	0.00181	0.00160	0.00145						
CO2	0.10539	0.10707	0.10796	0.10655	0.10931	0.10981	0.11045	0.11115	0.11163	0.11193	0.11230	0.11254	0.11270						
H	0.00044	0.00031	0.00024	0.00021	0.00016	0.00014	0.00011	0.00008	0.00006	0.00005	0.00004	0.00003	0.00003						
HO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
H2	0.00147	0.00117	0.00102	0.00092	0.00079	0.00071	0.00060	0.00049	0.00041	0.00036	0.00030	0.00027	0.00024						
H2O	0.10379	0.10456	0.10497	0.10524	0.10559	0.10582	0.10612	0.10646	0.10671	0.10696	0.10706	0.10719	0.10728						
N	0.00563	0.00576	0.00583	0.00588	0.00593	0.00597	0.00602	0.00608	0.00611	0.00614	0.00617	0.00619	0.00620						
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.73055	0.73142	0.73158	0.73218	0.73256	0.73281	0.73313	0.73349	0.73373	0.73388	0.73407	0.73419	0.73428						
O	0.00101	0.00078	0.00066	0.00059	0.00050	0.00045	0.00038	0.00030	0.00025	0.00022	0.00018	0.00016	0.00015						
OH	0.00495	0.00442	0.00413	0.00392	0.00364	0.00344	0.00318	0.00287	0.00253	0.00248	0.00227	0.00213	0.00202						
O2	0.02987	0.02913	0.02875	0.02849	0.02817	0.02796	0.02770	0.02742	0.02723	0.02711	0.02697	0.02688	0.02682						

CASE=	3	O/F=	16.2822	F/A=	0.06142	PERCENT FUEL=	5.7863	PHI=	0.9000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2312.9	2334.2	2345.7	2353.4	2363.6	2370.3	2375.1	2389.1	2396.2	2400.8	2406.7	2410.4	2413.1						
T, DEG F	3703.6	3741.9	3762.6	3776.4	3794.7	3806.8	3822.2	3840.8	3853.5	3861.8	3872.3	3879.0	3883.9						
RHO, G/CC	7.5592-5	1.5005-4	2.2415-4	2.9808-4	4.4554-4	5.9267-4	8.8629-4	1.4721-3	2.2028-3	2.9324-3	4.3898-3	5.8457-3	7.3004-3						
M, MOL WT	28.693	28.740	28.765	28.782	28.804	28.818	28.838	28.859	28.875	28.885	28.895	28.906	28.911						
CP, CAL/(G)(K)	0.5803	0.5423	0.5221	0.5086	0.4907	0.4789	0.4635	0.4459	0.4335	0.4254	0.4151	0.4085	0.4038						
GAMMA (S)	1.1693	1.1769	1.1815	1.1847	1.1893	1.1925	1.1970	1.2026	1.2068	1.2096	1.2135	1.2161	1.2180						
SON VEL./M/SEC	885.2	891.5	895.0	897.5	900.8	903.1	906.2	909.8	912.5	914.3	916.7	918.2	919.4						

MOLE FRACTIONS

A	0.00870	0.00872	0.00872	0.00873	0.00873	0.00874	0.00874	0.00875	0.00876	0.00876	0.00876	0.00877	0.00877						
CO	0.01254	0.01055	0.00946	0.00872	0.00773	0.00707	0.00620	0.00520	0.00450	0.00404	0.00346	0.00308	0.00282						
CO2	0.10691	0.10908	0.11028	0.11109	0.11217	0.11289	0.11385	0.11493	0.11570	0.11620	0.11684	0.11724	0.11754						
H	0.00069	0.00050	0.00040	0.00035	0.00028	0.00024	0.00019	0.00014	0.00011	0.00009	0.00007	0.00006	0.00005						
HO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
H2	0.00227	0.00187	0.00165	0.00151	0.00133	0.00120	0.00105	0.00087	0.00075	0.00067	0.00057	0.00050	0.00046						
H2O	0.10822	0.10917	0.10969	0.11003	0.11049	0.11080	0.11120	0.11165	0.11198	0.11220	0.11247	0.11265	0.11278						
N	0.00533	0.00544	0.00550	0.00554	0.00558	0.00561	0.00565	0.00569	0.00571	0.00573	0.00575	0.00577	0.00578						
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.72616	0.72728	0.72789	0.72830	0.72883	0.72919	0.72966	0.73019	0.73057	0.73081	0.73113	0.73132	0.73147						
O	0.00113	0.00088	0.00076	0.00068	0.00058	0.00052	0.00044	0.00035	0.00030	0.00026	0.00022	0.00019	0.00017						
OH	0.00554	0.00500	0.00468	0.00447	0.00417	0.00396	0.00367	0.00333	0.00308	0.00290	0.00267	0.00251	0.00239						
O2	0.02251	0.02150	0.02096	0.02059	0.02010	0.01977	0.01935	0.01887	0.01854	0.01832	0.01805	0.01788	0.01776						

CASE= 4		O/F= 8.1411	F/A= 0.12283	PERCENT FUEL= 10.9396				PHI= 1.8000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2071.3	2073.4	2074.4	2075.0	2075.7	2076.2	2076.7	2077.2	2077.5	2077.7	2077.9	2078.1	2078.2
T, DEG F	3268.6	3272.5	3274.3	3275.3	3276.6	3277.4	3278.3	3279.2	3279.8	3280.2	3280.6	3280.9	3281.0
RHO, G/CC	7.4159-5	1.4819-4	2.2220-4	2.9619-4	4.4416-4	5.9212-4	8.8799-4	1.4797-3	2.2192-3	2.9588-3	4.4377-3	5.9167-3	7.3956-3
M, MOL WT	25.208	25.213	25.215	25.216	25.218	25.219	25.220	25.221	25.222	25.222	25.223	25.223	25.223
CP, CAL/(G)(K)	0.3834	0.3782	0.3758	0.3744	0.3726	0.3716	0.3704	0.3692	0.3684	0.3679	0.3674	0.3671	0.3668
GAMMA (S)	1.2640	1.2671	1.2658	1.2694	1.2704	1.2711	1.2718	1.2726	1.2731	1.2734	1.2737	1.2739	1.2741
SON VEL, M/SEC	929.2	930.8	931.5	931.9	932.4	932.8	933.1	933.5	933.7	933.9	934.1	934.2	934.2

MOLE FRACTIONS

AR	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723
CO	0.16449	0.16457	0.16460	0.16462	0.16465	0.16466	0.16468	0.16469	0.16471	0.16471	0.16472	0.16472	0.16473
CO2	0.03367	0.03363	0.03361	0.03360	0.03359	0.03358	0.03357	0.03356	0.03356	0.03356	0.03355	0.03355	0.03355
H	0.00113	0.00081	0.00066	0.00058	0.00047	0.00041	0.00034	0.00026	0.00021	0.00019	0.00015	0.00013	0.00012
H2	0.09483	0.09493	0.09498	0.09501	0.09505	0.09507	0.09509	0.09512	0.09513	0.09514	0.09514	0.09515	0.09515
H2O	0.09324	0.09335	0.09339	0.09342	0.09345	0.09347	0.09350	0.09352	0.09354	0.09354	0.09355	0.09356	0.09356
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00002	0.00002
NO	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.60528	0.60539	0.60544	0.60547	0.60550	0.60552	0.60555	0.60558	0.60559	0.60560	0.60561	0.60562	0.60563
OH	0.00013	0.00009	0.00008	0.00007	0.00005	0.00005	0.00004	0.00003	0.00002	0.00002	0.00002	0.00002	0.00001

CASE= 4		O/F= 7.3270	F/A= 0.13648	PERCENT FUEL= 12.0091				PHI= 2.0000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1934.0	1934.9	1935.3	1935.6	1935.9	1936.1	1936.3	1936.5	1936.7	1936.7	1936.9	1936.9	1937.0
T, DEG F	3021.5	3023.2	3023.9	3024.4	3024.9	3025.2	3025.6	3026.0	3026.3	3026.4	3026.6	3026.8	3026.9
RHO, G/CC	7.7104-5	1.5415-4	2.3118-4	3.0820-4	4.6224-4	6.1627-4	9.2432-4	1.5404-3	2.3105-3	3.0805-3	4.6206-3	6.1606-3	7.7006-3
M, MOL WT	24.472	24.474	24.475	24.476	24.476	24.477	24.477	24.478	24.478	24.478	24.479	24.479	24.479
CP, CAL/(G)(K)	0.3769	0.3743	0.3732	0.3725	0.3717	0.3712	0.3706	0.3697	0.3692	0.3695	0.3692	0.3691	0.3690
GAMMA (S)	1.2771	1.2788	1.2795	1.2800	1.2805	1.2809	1.2813	1.2817	1.2819	1.2820	1.2822	1.2823	1.2824
SON VEL, M/SEC	916.0	916.8	917.2	917.4	917.7	917.8	918.0	918.2	918.3	918.4	918.4	918.5	918.5

MOLE FRACTIONS

AR	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693
CO	0.18548	0.18551	0.18552	0.18553	0.18554	0.18555	0.18556	0.18557	0.18557	0.18557	0.18558	0.18558	0.18558
CO2	0.02568	0.02567	0.02566	0.02565	0.02565	0.02564	0.02564	0.02564	0.02564	0.02564	0.02564	0.02564	0.02564
H	0.00051	0.00036	0.00030	0.00026	0.00021	0.00018	0.00015	0.00012	0.00009	0.00008	0.00007	0.00006	0.00005
H2	0.12577	0.12583	0.12585	0.12537	0.12589	0.12590	0.12591	0.12592	0.12592	0.12592	0.12592	0.12591	0.12590
H2O	0.07506	0.07509	0.07511	0.07512	0.07513	0.07513	0.07514	0.07515	0.07515	0.07515	0.07516	0.07516	0.07516
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00002	0.00002	0.00003	0.00004
N2	0.58055	0.58059	0.58061	0.58062	0.58064	0.58065	0.58066	0.58067	0.58068	0.58068	0.58069	0.58069	0.58069
OH	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000

CASE= 6 O/F= 17.2400 F/A= 0.05800 PERCENT FUEL= 5.4825 PHI= 0.8500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2473.3	2505.2	2523.0	2535.2	2551.7	2563.0	2578.1	2595.8	2608.9	2617.6	2629.1	2636.6	2642.2
T, DEG F	3992.3	4049.7	4081.7	4103.7	4133.4	4153.6	4180.8	4212.8	4236.3	4252.0	4272.6	4286.2	4296.2
RHO, G/CC	7.0073-5	1.3370-4	2.0687-4	2.7476-4	4.0999-4	5.4472-4	8.1324-4	1.3479-3	2.0138-3	2.6779-3	4.0029-3	5.3249-3	6.6450-3
M, MOL WT	28.443	28.513	28.552	28.579	28.615	28.640	28.673	28.712	28.741	28.760	28.785	28.802	28.814
CP, CAL/(G)(K)	0.7149	0.6642	0.6367	0.6181	0.5933	0.5766	0.5543	0.5282	0.5092	0.4966	0.4800	0.4690	0.4610
GAMMA (S)	1.1525	1.1590	1.1629	1.1657	1.1698	1.1727	1.1769	1.1823	1.1866	1.1896	1.1939	1.1968	1.1991
SON VEL./M/SEC	912.8	920.1	924.3	927.3	931.3	934.1	938.0	942.7	946.3	948.8	952.2	954.4	956.1

MOLE FRACTIONS

AR	0.00865	0.00867	0.00869	0.00869	0.00871	0.00871	0.00872	0.00873	0.00874	0.00875	0.00876	0.00876	0.00877
CO	0.02187	0.01929	0.01780	0.01775	0.01531	0.01430	0.01293	0.01128	0.01005	0.00922	0.00812	0.00739	0.00686
CO2	0.09033	0.09318	0.09483	0.09598	0.09757	0.09868	0.10018	0.10198	0.10333	0.10423	0.10543	0.10622	0.10681
H	0.00195	0.00147	0.00124	0.00109	0.00090	0.00079	0.00065	0.00050	0.00040	0.00035	0.00028	0.00023	0.00021
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
H2	0.00387	0.00331	0.00300	0.00279	0.00251	0.00232	0.00207	0.00177	0.00156	0.00142	0.00124	0.00112	0.00103
H20	0.09683	0.09826	0.09905	0.09959	0.10032	0.10082	0.10149	0.10229	0.10287	0.10326	0.10378	0.10413	0.10438
NO	0.00884	0.00918	0.00936	0.00949	0.00965	0.00975	0.00989	0.01005	0.01017	0.01024	0.01033	0.01040	0.01044
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
N2	0.72037	0.72199	0.72269	0.72351	0.72436	0.72493	0.72571	0.72662	0.72729	0.72774	0.72834	0.72873	0.72951
O	0.00329	0.00267	0.00235	0.00214	0.00187	0.00169	0.00147	0.00122	0.00104	0.00093	0.00080	0.00071	0.00065
OH	0.01004	0.00931	0.00887	0.00856	0.00811	0.00779	0.00734	0.00679	0.00635	0.00605	0.00564	0.00535	0.00513
O2	0.03395	0.03265	0.03191	0.03139	0.03068	0.03019	0.02953	0.02874	0.02816	0.02777	0.02726	0.02693	0.02668

CASE= 6 O/F= 16.2822 F/A= 0.06142 PERCENT FUEL= 5.7863 PHI= 0.9000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2499.2	2534.0	2553.6	2567.2	2585.7	2598.4	2615.7	2636.4	2652.0	2662.4	2676.4	2685.8	2692.8
T, DEG F	4038.8	4101.5	4136.8	4161.2	4194.5	4217.4	4248.6	4285.9	4313.8	4332.7	4357.9	4374.8	4387.3
RHO, G/CC	6.9060-5	1.3659-4	2.0362-4	2.7034-4	4.0317-4	5.3546-4	7.9892-4	1.3232-3	1.9755-3	2.6257-3	3.9221-3	5.2150-3	6.5053-3
M, MOL WT	28.325	28.401	28.444	28.474	28.514	28.542	28.580	28.625	28.659	28.682	28.713	28.733	28.748
CP, CAL/(G)(K)	0.7649	0.7123	0.6838	0.6645	0.6385	0.6210	0.5974	0.5696	0.5491	0.5353	0.5169	0.5046	0.4955
GAMMA (S)	1.1478	1.1536	1.1572	1.1597	1.1633	1.1660	1.1698	1.1746	1.1785	1.1813	1.1853	1.1881	1.1903
SON VEL./M/SEC	917.6	925.1	929.4	932.4	936.5	939.4	943.5	948.4	952.2	954.9	958.5	960.9	962.8

MOLE FRACTIONS

AR	0.00859	0.00861	0.00863	0.00863	0.00865	0.00866	0.00867	0.00868	0.00869	0.00870	0.00871	0.00871	0.00872
CO	0.02772	0.02497	0.02334	0.02219	0.02058	0.01945	0.01788	0.01595	0.01447	0.01346	0.01209	0.01116	0.01046
CO2	0.09019	0.09326	0.09506	0.09634	0.09812	0.09937	0.10110	0.10321	0.10483	0.10594	0.10744	0.10846	0.10921
H	0.00250	0.00192	0.00163	0.00145	0.00122	0.00108	0.00090	0.00070	0.00058	0.00050	0.00041	0.00035	0.00031
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
H2	0.00505	0.00440	0.00404	0.00379	0.00345	0.00322	0.00291	0.00255	0.00228	0.00210	0.00186	0.00170	0.00158
H20	0.10057	0.10217	0.10307	0.10368	0.10452	0.10510	0.10587	0.10680	0.10749	0.10795	0.10857	0.10899	0.10930
NO	0.00835	0.00864	0.00879	0.00889	0.00901	0.00910	0.00920	0.00931	0.00938	0.00943	0.00948	0.00951	0.00953
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71529	0.71708	0.71810	0.71880	0.71977	0.72043	0.72134	0.72244	0.72326	0.72382	0.72457	0.72507	0.72545
O	0.00338	0.00276	0.00243	0.00222	0.00194	0.00176	0.00153	0.00127	0.00109	0.00098	0.00084	0.00075	0.00068
OH	0.01056	0.00983	0.00939	0.00907	0.00862	0.00829	0.00784	0.00727	0.00682	0.00651	0.00608	0.00578	0.00556
O2	0.02780	0.02636	0.02552	0.02493	0.02411	0.02354	0.02276	0.02180	0.02108	0.02059	0.01994	0.01949	0.01916

CASE=	7	O/F=	8.1411	F/A=	0.12283	PERCENT FUEL=	10.9396	PHI=	1.8000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2282.0	2289.3	2292.7	2294.8	2297.4	2298.9	2300.8	2302.7	2304.0	2304.7	2305.6	2306.1	2306.5						
T, DEG F	3647.9	3661.0	3667.2	3671.0	3675.6	3678.4	3681.7	3685.2	3687.4	3688.8	3690.4	3691.3	3692.0						
RHO, G/CC	6.7203-5	1.3406-4	2.0084-4	2.6759-4	4.0102-4	5.3440-4	8.0106-4	1.3342-3	2.0004-3	2.6666-3	3.9986-3	5.3305-3	6.6622-3						
M, MOL WT	25.168	25.183	25.190	25.194	25.199	25.203	25.206	25.210	25.213	25.214	25.216	25.218	25.218						
CP, CAL/(G/IK)	0.4250	0.4096	0.4024	0.3981	0.3928	0.3897	0.3858	0.3819	0.3794	0.3780	0.3762	0.3751	0.3744						
GAMMA (S)	1.2428	1.2499	1.2534	1.2556	1.2583	1.2600	1.2621	1.2642	1.2656	1.2665	1.2675	1.2681	1.2686						
SON VEL, M/SEC	967.9	972.0	973.9	975.1	976.6	977.6	978.7	979.8	980.6	981.1	981.6	981.9	982.2						

MOLE FRACTIONS

AR	0.00721	0.00722	0.00722	0.00722	0.00722	0.00722	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723						
CO	0.16647	0.16667	0.16677	0.16693	0.16690	0.16694	0.16699	0.16704	0.16708	0.16710	0.16712	0.16714	0.16715						
CO2	0.03137	0.03129	0.03125	0.03122	0.03119	0.03118	0.03115	0.03113	0.03112	0.03111	0.03110	0.03110	0.03109						
H	0.00375	0.00276	0.00229	0.00201	0.00166	0.00145	0.00120	0.00094	0.00077	0.00067	0.00055	0.00048	0.00043						
H2	0.09147	0.09180	0.09195	0.09205	0.09216	0.09224	0.09232	0.09241	0.09246	0.09250	0.09253	0.09255	0.09257						
H2O	0.09474	0.09509	0.09526	0.09536	0.09549	0.09556	0.09565	0.09575	0.09581	0.09584	0.09589	0.09591	0.09593						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001						
NO	0.00008	0.00006	0.00005	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001						
N2	0.60426	0.60463	0.60481	0.60491	0.60504	0.60512	0.60522	0.60532	0.60538	0.60542	0.60546	0.60549	0.60551						
O	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00062	0.00046	0.00039	0.00034	0.00028	0.00025	0.00020	0.00016	0.00013	0.00012	0.00009	0.00008	0.00007						
O2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						

CASE=	7	O/F=	7.3270	F/A=	0.13648	PERCENT FUEL=	12.0091	PHI=	2.0000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2149.3	2153.1	2154.8	2155.9	2157.2	2157.9	2158.9	2159.8	2160.4	2160.8	2161.2	2161.5	2161.6						
T, DEG F	3409.0	3415.9	3419.0	3420.9	3423.2	3424.6	3426.3	3428.0	3429.7	3429.7	3430.5	3430.9	3431.3						
RHO, G/CC	6.9320-5	1.3844-4	2.0752-4	2.7658-4	4.1467-4	5.5273-4	8.2880-4	1.3808-3	2.0708-3	2.7607-3	4.1404-3	5.5200-3	6.8995-3						
M, MOL WT	24.451	24.459	24.462	24.464	24.467	24.469	24.470	24.472	24.474	24.474	24.475	24.476	24.477						
CP, CAL/(G/IK)	0.4027	0.3940	0.3901	0.3877	0.3848	0.3831	0.3810	0.3789	0.3776	0.3768	0.3759	0.3753	0.3749						
GAMMA (S)	1.2614	1.2661	1.2684	1.2697	1.2714	1.2724	1.2737	1.2749	1.2758	1.2763	1.2768	1.2772	1.2774						
SON VEL, M/SEC	960.1	962.6	963.8	964.5	965.4	965.9	966.6	967.2	967.7	967.9	968.2	968.4	968.5						

MOLE FRACTIONS

AR	0.00692	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693						
CO	0.18730	0.18779	0.18784	0.18787	0.18791	0.18793	0.18796	0.18799	0.18800	0.18802	0.18803	0.18804	0.18804						
CO2	0.02330	0.02326	0.02323	0.02322	0.02320	0.02319	0.02318	0.02317	0.02316	0.02316	0.02316	0.02315	0.02315						
H	0.00207	0.00150	0.00124	0.00108	0.00089	0.00077	0.00063	0.00049	0.00040	0.00035	0.00029	0.00025	0.00022						
H2	0.12261	0.12285	0.12296	0.12303	0.12311	0.12315	0.12321	0.12327	0.12330	0.12332	0.12334	0.12335	0.12335						
H2O	0.07719	0.07732	0.07738	0.07742	0.07746	0.07749	0.07752	0.07755	0.07758	0.07759	0.07760	0.07761	0.07762						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00002	0.00003						
NO	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
N2	0.58004	0.58022	0.58031	0.58036	0.58042	0.58046	0.58050	0.58055	0.58057	0.58059	0.58061	0.58063	0.58064						
OH	0.00017	0.00013	0.00010	0.00009	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002						

CASE= 3		Q/F= 15.4253	F/A= 0.06483	PERCENT FUEL= 6.0882			PHI= 0.9500						
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2346.6	2371.6	2385.3	2394.7	2407.3	2415.8	2427.2	2440.5	2450.2	2456.7	2465.1	2470.7	2474.7
T, DEG F	3764.3	3809.1	3833.9	3850.7	3873.4	3888.7	3909.2	3933.2	3950.7	3962.3	3977.5	3987.5	3994.8
RHO, G/CC	7.4231-5	1.4718-4	2.1973-4	2.9203-4	4.3617-4	5.7988-4	8.6648-4	1.4377-3	2.1496-3	2.8599-3	4.2779-3	5.6934-3	7.1072-3
M, MOL WT	28.588	28.642	28.671	28.692	28.719	28.738	28.762	28.791	28.812	28.826	28.844	28.856	28.865
CP, CAL/(G*IK)	0.6339	0.5938	0.5722	0.5577	0.5383	0.5253	0.5080	0.4878	0.4731	0.4633	0.4504	0.4420	0.4357
GAMMA (S)	1.1608	1.1675	1.1715	1.1743	1.1784	1.1813	1.1854	1.1905	1.1946	1.1974	1.2014	1.2041	1.2062
SON VEL,M/SEC	890.1	896.5	900.2	902.7	906.2	908.6	912.0	916.0	919.0	921.1	923.9	925.9	927.3

MOLE FRACTIONS

AR	0.00864	0.00866	0.00867	0.00867	0.00868	0.00869	0.00869	0.00870	0.00871	0.00872	0.00872	0.00872	0.00873
CO	0.01816	0.01586	0.01455	0.01265	0.01241	0.01156	0.01041	0.00905	0.00805	0.00738	0.00649	0.00590	0.00548
CO2	0.10703	0.10958	0.11101	0.11261	0.11336	0.11429	0.11555	0.11703	0.11813	0.11886	0.11983	0.12047	0.12094
H	0.00100	0.00074	0.00061	0.00053	0.00044	0.00038	0.00031	0.00024	0.00019	0.00016	0.00013	0.00011	0.00009
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001
H2	0.00335	0.00285	0.00258	0.00239	0.00215	0.00198	0.00176	0.00151	0.00133	0.00121	0.00106	0.00096	0.00088
H2O	0.11231	0.11344	0.11406	0.11448	0.11505	0.11543	0.11593	0.11652	0.11695	0.11723	0.11760	0.11784	0.11802
NO	0.00483	0.00488	0.00490	0.00491	0.00492	0.00491	0.00491	0.00489	0.00487	0.00486	0.00484	0.00482	0.00480
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001
N2	0.72139	0.72274	0.72348	0.72399	0.72468	0.72515	0.72578	0.72651	0.72705	0.72741	0.72789	0.72820	0.72843
O	0.00116	0.00091	0.00078	0.00070	0.00060	0.00053	0.00045	0.00036	0.00030	0.00027	0.00022	0.00020	0.00018
OH	0.00587	0.00531	0.00499	0.00476	0.00445	0.00423	0.00394	0.00358	0.00331	0.00312	0.00288	0.00271	0.00258
O2	0.01625	0.01504	0.01436	0.01390	0.01327	0.01284	0.01227	0.01159	0.01110	0.01077	0.01034	0.01006	0.00986

CASE= 3		Q/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3881			PHI= 1.0000						
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2370.5	2397.6	2412.7	2423.1	2437.2	2446.8	2459.8	2475.3	2486.8	2494.6	2505.0	2512.0	2517.1
T, DEG F	3807.1	3855.9	3883.1	3901.8	3927.2	3944.5	3967.9	3995.8	4016.5	4030.5	4049.3	4061.8	4071.2
RHO, G/CC	7.3162-5	1.4497-4	2.1633-4	2.8744-4	4.2911-4	5.7031-4	8.5177-4	1.4124-3	2.1105-3	2.8069-3	4.1961-3	5.5821-3	6.9659-3
M, MOL WT	28.462	28.520	28.553	28.575	28.605	28.626	28.654	28.687	28.712	28.728	28.750	28.765	28.776
CP, CAL/(G*IK)	0.6688	0.6276	0.6055	0.5906	0.5708	0.5575	0.5398	0.5192	0.5041	0.4941	0.4808	0.4721	0.4656
GAMMA (S)	1.1565	1.1625	1.1662	1.1687	1.1724	1.1750	1.1787	1.1833	1.1869	1.1894	1.1929	1.1954	1.1973
SON VEL,M/SEC	894.9	901.4	905.2	907.7	911.3	913.8	917.2	921.4	924.5	926.7	929.6	931.6	933.1

MOLE FRACTIONS

AR	0.00858	0.00859	0.00860	0.00861	0.00862	0.00863	0.00863	0.00864	0.00865	0.00866	0.00866	0.00867	0.00867
CO	0.02502	0.02260	0.02121	0.02023	0.01889	0.01796	0.01668	0.01513	0.01396	0.01316	0.01208	0.01135	0.01080
CO2	0.10576	0.10844	0.10998	0.11105	0.11254	0.11357	0.11498	0.11668	0.11797	0.11884	0.12002	0.12082	0.12141
H	0.00134	0.00101	0.00085	0.00075	0.00063	0.00055	0.00046	0.00036	0.00030	0.00026	0.00021	0.00018	0.00016
H2	0.00476	0.00419	0.00387	0.00365	0.00336	0.00316	0.00290	0.00259	0.00236	0.00221	0.00200	0.00187	0.00177
H2O	0.11603	0.11732	0.11803	0.11851	0.11916	0.11960	0.12020	0.12089	0.12141	0.12175	0.12220	0.12251	0.12273
NO	0.00417	0.00413	0.00409	0.00406	0.00400	0.00395	0.00387	0.00375	0.00364	0.00357	0.00345	0.00336	0.00329
N2	0.71624	0.71773	0.71857	0.71915	0.71995	0.72049	0.72124	0.72213	0.72280	0.72326	0.72388	0.72430	0.72461
O	0.00110	0.00084	0.00072	0.00064	0.00054	0.00048	0.00040	0.00031	0.00026	0.00022	0.00018	0.00016	0.00014
OH	0.00590	0.00531	0.00497	0.00473	0.00440	0.00417	0.00385	0.00347	0.00318	0.00298	0.00271	0.00254	0.00240
O2	0.01111	0.00983	0.00910	0.00860	0.00791	0.00744	0.00680	0.00605	0.00548	0.00510	0.00459	0.00426	0.00401

C	1	0.00000	H	1	906699	0	0.000000	0	0.000000	0	0.000000	100	0.00000000	-5059.80	L	298.150	F	0	0.80700
AR	1	0.00000			0.000000	0	0.000000	00	0.000000	0	0.000000	0	0.01285800	0.00	G	1000.000	0	0	0.00000
C	1	0.00000	O	2	0.000000	0	0.000000	00	0.000000	00	0.000000	0	0.00045600	0.00	G	1000.000	0	0	0.00000
N	2	0.00000			0.000000	0	0.000000	00	0.000000	00	0.000000	0	0.75525296	0.00	G	1000.000	0	0	0.00000
O	2	0.00000			0.000000	0	0.000000	00	0.000000	00	0.000000	0	0.23143297	0.00	G	1000.000	0	0	0.00000

CASE=	5	O/F=146.5400	F/A=0.00682	PERCENT FUEL=	0.6778	PHI=	0.1000													
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000							
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8							
T, DEG K	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9	1238.9							
T, DEG F	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3	1770.3							
RHO, G/CC	1.4247-4	2.8494-4	4.2740-4	5.6987-4	8.5481-4	1.1397-3	1.7096-3	2.8494-3	4.2741-3	5.6988-3	8.5482-3	1.1398-2	1.4247-2							
M, MOL WT	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966	28.966							
CP, CAL/(GIIK)	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865	0.2865							
GAMMA (S)	1.3149	1.3149	1.3149	1.3149	1.3149	1.3149	1.3149	1.3149	1.3149	1.3149	1.3149	1.3148	1.3148							
SON VEL,M/SEC	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8							

MOLE FRACTIONS

AR	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926	0.00926							
CO2	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439	0.01439							
H2O	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343	0.01343							
NO	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027							
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001							
N2	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551	0.77551							
O2	0.18713	0.18713	0.18713	0.18713	0.18713	0.18713	0.18713	0.18713	0.18712	0.18712	0.18712	0.18712	0.18711							

CASE=	5	O/F=73.2700	F/A=0.01365	PERCENT FUEL=	1.3464	PHI=	0.2000													
P, ATM	0.5000	1.0000	1.5030	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000							
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8							
T, DEG K	1461.4	1461.4	1461.4	1461.4	1461.4	1461.4	1461.4	1461.4	1461.5	1461.5	1461.5	1461.5	1461.5							
T, DEG F	2170.8	2170.8	2170.8	2170.8	2170.9	2170.9	2170.9	2170.9	2170.9	2170.9	2170.9	2170.9	2170.9							
RHO, G/CC	1.2078-4	2.4156-4	3.6234-4	4.8312-4	7.2468-4	9.6624-4	1.4493-3	2.4156-3	3.6234-3	4.8311-3	7.2467-3	9.6623-3	1.2078-2							
M, MOL WT	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968	28.968							
CP, CAL/(GIIK)	0.2997	0.2997	0.2997	0.2995	0.2995	0.2995	0.2995	0.2994	0.2994	0.2994	0.2994	0.2994	0.2994							
GAMMA (S)	1.2970	1.2970	1.2971	1.2971	1.2971	1.2971	1.2972	1.2972	1.2972	1.2972	1.2972	1.2972	1.2972							
SON VEL,M/SEC	737.6	737.6	737.6	737.6	737.6	737.6	737.6	737.7	737.7	737.7	737.7	737.7	737.7							

MOLE FRACTIONS

AR	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920	0.00920							
CO2	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829	0.02829							
H2O	0.02668	0.02667	0.02668	0.02668	0.02668	0.02668	0.02668	0.02668	0.02668	0.02668	0.02668	0.02668	0.02668							
NO	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096							
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001							
N2	0.76998	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999	0.76999							
O2	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001							
O2	0.16485	0.16486	0.16486	0.16486	0.16486	0.16486	0.16486	0.16485	0.16485	0.16485	0.16485	0.16485	0.16484							

CASE= 6 O/F= 15.4253 F/A= 0.06483 PERCENT FUEL= 6.0882 PHI= 0.9500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2520.0	2557.0	2578.0	2592.6	2612.7	2626.5	2645.6	2668.6	2686.1	2698.0	2714.2	2725.1	2733.4
T, DEG F	4076.3	4142.9	4180.7	4206.9	4243.1	4268.1	4302.3	4343.8	4375.2	4396.7	4425.8	4445.6	4460.4
RHO, G/CC	6.8183-5	1.3478-4	2.0084-4	2.6658-4	3.9741-4	5.2764-4	7.8691-4	1.3025-3	1.9436-3	2.5823-3	3.8551-3	5.1237-3	6.3894-3
M, MOL WT	28.198	28.278	28.324	28.356	28.400	28.430	28.471	28.521	28.559	28.585	28.620	28.644	28.662
CP, CAL/(G)(K)	0.8054	0.7516	0.7224	0.7026	0.6761	0.6582	0.6342	0.6059	0.5848	0.5707	0.5517	0.5390	0.5295
GAMMA (S)	1.1447	1.1500	1.1533	1.1556	1.1589	1.1613	1.1647	1.1691	1.1726	1.1751	1.1786	1.1812	1.1831
SON VEL, M/SEC	922.2	929.8	934.2	937.3	941.5	944.5	948.6	953.7	957.6	960.3	964.0	966.6	968.6

MOLE FRACTIONS

AR	0.00852	0.00855	0.00856	0.00857	0.00858	0.00859	0.00861	0.00862	0.00863	0.00864	0.00865	0.00866	0.00866
CO	0.03414	0.03132	0.02964	0.02943	0.02673	0.02552	0.02383	0.02172	0.02007	0.01893	0.01735	0.01627	0.01544
CO2	0.08935	0.09252	0.09441	0.09575	0.09764	0.09898	0.10086	0.10319	0.10500	0.10626	0.10799	0.10918	0.11008
H	0.00309	0.00241	0.00207	0.00185	0.00158	0.00140	0.00118	0.00095	0.00079	0.00069	0.00057	0.00049	0.00044
H02	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00643	0.00571	0.00530	0.00501	0.00463	0.00436	0.00400	0.00356	0.00324	0.00302	0.00273	0.00253	0.00238
H20	0.10406	0.10583	0.10683	0.10752	0.10846	0.10910	0.10998	0.11103	0.11182	0.11236	0.11308	0.11357	0.11393
NO	0.00773	0.00795	0.00806	0.00813	0.00820	0.00825	0.00829	0.00833	0.00833	0.00833	0.00831	0.00829	0.00826
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71008	0.71201	0.71311	0.71388	0.71495	0.71569	0.71672	0.71796	0.71892	0.71958	0.72047	0.72109	0.72155
O	0.00336	0.00274	0.00241	0.00220	0.00192	0.00174	0.00151	0.00125	0.00107	0.00096	0.00082	0.00073	0.00066
OH	0.01085	0.01011	0.00966	0.00933	0.00887	0.00854	0.00807	0.00748	0.00702	0.00670	0.00626	0.00595	0.00572
O2	0.02238	0.02084	0.01995	0.01931	0.01843	0.01781	0.01695	0.01589	0.01508	0.01452	0.01376	0.01324	0.01285

CASE= 6 O/F= 14.6540 F/A= 0.06824 PERCENT FUEL= 6.3881 PHI= 1.0000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2536.0	2574.5	2596.4	2611.7	2632.7	2647.3	2667.4	2691.8	2710.5	2723.3	2740.7	2752.7	2761.6
T, DEG F	4105.2	4174.4	4213.8	4241.3	4279.2	4305.5	4341.6	4385.6	4419.2	4442.2	4473.6	4495.1	4511.2
RHO, G/CC	6.7426-5	1.3323-4	1.9850-4	2.6342-4	3.9260-4	5.2116-4	7.7704-4	1.2857-3	1.9180-3	2.5477-3	3.8023-3	5.0523-3	6.2990-3
M, MOL WT	28.063	28.146	28.193	28.226	28.272	28.303	28.347	28.399	28.439	28.467	28.504	28.529	28.549
CP, CAL/(G)(K)	0.8330	0.7776	0.7477	0.7275	0.7003	0.6821	0.6575	0.6287	0.6073	0.5930	0.5738	0.5609	0.5514
GAMMA (S)	1.1430	1.1481	1.1512	1.1534	1.1566	1.1589	1.1621	1.1662	1.1695	1.1719	1.1752	1.1775	1.1793
SON VEL, M/SEC	926.7	934.4	938.9	942.0	946.3	949.3	953.5	958.7	962.7	965.5	969.3	971.9	973.9

MOLE FRACTIONS

AR	0.00846	0.00848	0.00849	0.00850	0.00852	0.00853	0.00854	0.00856	0.00857	0.00858	0.00859	0.00860	0.00860
CO	0.04108	0.03830	0.03662	0.03512	0.03371	0.03250	0.03070	0.02862	0.02693	0.02574	0.02410	0.02295	0.02208
CO2	0.08786	0.09102	0.09292	0.09427	0.09619	0.09755	0.09947	0.10186	0.10374	0.10505	0.10687	0.10813	0.10909
H	0.00371	0.00293	0.00253	0.00228	0.00196	0.00175	0.00149	0.00121	0.00102	0.00090	0.00075	0.00066	0.00060
H02	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00806	0.00727	0.00682	0.00650	0.00607	0.00578	0.00537	0.00488	0.00452	0.00427	0.00393	0.00370	0.00353
H20	0.10729	0.10922	0.11031	0.11107	0.11210	0.11281	0.11378	0.11494	0.11582	0.11642	0.11722	0.11777	0.11818
NO	0.00703	0.00717	0.00722	0.00724	0.00726	0.00725	0.00723	0.00716	0.00709	0.00702	0.00690	0.00681	0.00673
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001
N2	0.70474	0.70677	0.70794	0.70876	0.70999	0.71069	0.71180	0.71316	0.71420	0.71493	0.71593	0.71662	0.71715
O	0.00322	0.00261	0.00229	0.00208	0.00181	0.00163	0.00140	0.00115	0.00098	0.00087	0.00073	0.00064	0.00058
OH	0.01090	0.01014	0.00967	0.00933	0.00885	0.00851	0.00802	0.00740	0.00692	0.00658	0.00612	0.00579	0.00554
O2	0.01764	0.01609	0.01518	0.01453	0.01363	0.01300	0.01212	0.01104	0.01020	0.00963	0.00884	0.00831	0.00790

CASE= 2 O/F= 48.8467 F/A= 0.02047 PERCENT FUEL= 2.0062 PHI= 0.3000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3	1167.3
T, DEG F	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5	1641.5
RHO, G/CC	1.5122-4	3.0244-4	4.5366-4	6.0488-4	9.0732-4	1.2098-3	1.8146-3	3.0244-3	4.5366-3	6.0488-3	9.0732-3	1.2098-2	1.5122-2
M, MOL WT	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970
CP, CAL/(G)(K)	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898	0.2898
GAMMA (S)	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100	1.3100
SOUND VEL, M/SEC	662.5	662.5	662.5	662.5	662.5	662.5	662.5	662.5	662.5	662.5	662.5	662.5	662.5

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201	0.04201
H2O	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977	0.03977
NO	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014	0.00014
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
N2	0.76530	0.76530	0.76530	0.76530	0.76530	0.76530	0.76530	0.76529	0.76529	0.76529	0.76529	0.76529	0.76529
O2	0.14365	0.14365	0.14365	0.14365	0.14365	0.14365	0.14365	0.14365	0.14365	0.14365	0.14365	0.14364	0.14364

CASE= 2 O/F= 36.6350 F/A= 0.02730 PERCENT FUEL= 2.6571 PHI= 0.4000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7	1385.7
T, DEG F	2034.5	2034.5	2034.5	2034.5	2034.6	2034.6	2034.6	2034.6	2034.6	2034.6	2034.6	2034.6	2034.6
RHO, G/CC	1.2740-4	2.5479-4	3.8219-4	5.0958-4	7.6437-4	1.0192-3	1.5287-3	2.5479-3	3.8218-3	5.0958-3	7.6436-3	1.0192-2	1.2739-2
M, MOL WT	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971	28.971
CP, CAL/(G)(K)	0.3030	0.3029	0.3029	0.3029	0.3028	0.3028	0.3028	0.3028	0.3028	0.3028	0.3028	0.3028	0.3028
GAMMA (S)	1.2927	1.2928	1.2928	1.2928	1.2928	1.2929	1.2929	1.2929	1.2929	1.2929	1.2929	1.2929	1.2929
SOUND VEL, M/SEC	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.1	717.1	717.1	717.1

MOLE FRACTIONS

AR	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908	0.00908
CO2	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554	0.05554
H2O	0.05266	0.05266	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267	0.05267
NO	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
N2	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005	0.76005
OH	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
O2	0.12210	0.12210	0.12210	0.12210	0.12210	0.12210	0.12210	0.12210	0.12210	0.12209	0.12209	0.12209	0.12209

CASE=	3	O/F=	13.9562	F/A=	0.07165	PERCENT FUEL=				6.6862	PHI=					1.0500
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000			
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8			
T, DEG K	2384.2	2411.6	2426.7	2437.0	2451.0	2460.4	2473.0	2487.7	2498.4	2505.4	2514.6	2520.5	2524.8			
T, DEG F	3831.9	3881.1	3908.4	3927.0	3952.0	3969.0	3991.7	4018.1	4037.4	4050.1	4066.6	4077.3	4085.0			
RHO, G/CC	7.2368-5	1.4339-4	2.1359-4	2.8432-4	4.2450-4	5.6423-4	8.4282-4	1.3979-3	2.0895-3	2.7796-3	4.1570-3	5.5319-3	6.9053-3			
M, MOL WT	28.316	28.375	28.407	28.429	28.458	28.478	28.505	28.536	28.558	28.573	28.592	28.604	28.613			
CP, CAL/(G*IK)	0.6717	0.6269	0.6026	0.5861	0.5638	0.5488	0.5285	0.5046	0.4869	0.4749	0.4590	0.4484	0.4406			
GAMMA (S)	1.1568	1.1634	1.1675	1.1704	1.1746	1.1777	1.1821	1.1877	1.1924	1.1957	1.2004	1.2037	1.2063			
SON VEL, M/SEC	899.9	906.7	910.6	913.3	917.1	919.7	923.4	927.9	931.3	933.7	936.9	939.1	940.8			

MOLE FRACTIONS

AR	0.00850	0.00852	0.00853	0.00854	0.00855	0.00855	0.00856	0.00857	0.00858	0.00858	0.00859	0.00859	0.00859		
CO	0.03306	0.03079	0.02949	0.02859	0.02736	0.02652	0.02537	0.02402	0.02303	0.02238	0.02152	0.02097	0.02057		
CO2	0.10310	0.10565	0.10710	0.10611	0.10948	0.11042	0.11169	0.11319	0.11429	0.11502	0.11596	0.11658	0.11702		
H	0.00168	0.00129	0.00110	0.00098	0.00083	0.00073	0.00062	0.00049	0.00041	0.00036	0.00030	0.00026	0.00024		
H2	0.00659	0.00598	0.00565	0.00542	0.00512	0.00491	0.00465	0.00434	0.00412	0.00397	0.00379	0.00367	0.00358		
H2O	0.11931	0.12070	0.12147	0.12198	0.12268	0.12315	0.12377	0.12449	0.12501	0.12535	0.12580	0.12609	0.12629		
NO	0.00341	0.00328	0.00317	0.00309	0.00296	0.00286	0.00271	0.00249	0.00231	0.00218	0.00199	0.00185	0.00175		
N2	0.71067	0.71221	0.71307	0.71366	0.71447	0.71502	0.71577	0.71665	0.71730	0.71773	0.71830	0.71868	0.71896		
O	0.00094	0.00070	0.00059	0.00051	0.00042	0.00036	0.00029	0.00022	0.00017	0.00014	0.00011	0.00009	0.00008		
OH	0.00561	0.00497	0.00460	0.00434	0.00397	0.00372	0.00337	0.00296	0.00264	0.00243	0.00214	0.00195	0.00181		
O2	0.00711	0.00590	0.00523	0.00477	0.00416	0.00375	0.00320	0.00258	0.00214	0.00185	0.00149	0.00127	0.00111		

CASE=	3	O/F=	13.3218	F/A=	0.07506	PERCENT FUEL=				6.9824	PHI=					1.1000
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000			
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8			
T, DEG K	2387.6	2413.0	2426.6	2435.7	2447.6	2455.5	2465.6	2476.7	2484.3	2491.1	2495.0	2498.6	2501.0			
T, DEG F	3838.0	3883.6	3908.2	3924.6	3946.0	3961.1	3978.3	3998.4	4012.1	4020.7	4031.2	4037.7	4042.2			
RHO, G/CC	7.1844-5	1.4245-4	2.1269-4	2.8271-4	4.2237-4	5.6169-4	8.3970-4	1.3943-3	2.0862-3	2.7773-3	4.1578-3	5.5372-3	6.9158-3			
M, MOL WT	28.151	28.205	28.233	28.252	28.277	28.293	28.314	28.337	28.353	28.362	28.374	28.381	28.386			
CP, CAL/(G*IK)	0.6384	0.5880	0.5605	0.5419	0.5172	0.5006	0.4789	0.4543	0.4372	0.4263	0.4128	0.4044	0.3986			
GAMMA (S)	1.1625	1.1710	1.1764	1.1803	1.1860	1.1901	1.1961	1.2036	1.2094	1.2133	1.2186	1.2220	1.2245			
SON VEL, M/SEC	905.4	912.7	916.9	919.8	923.9	926.7	930.6	935.2	938.6	940.9	943.9	945.8	947.1			

MOLE FRACTIONS

AR	0.00843	0.00844	0.00845	0.00846	0.00847	0.00848	0.00848	0.00849	0.00849	0.00850	0.00850	0.00850	0.00850		
CO	0.04221	0.04034	0.03932	0.03862	0.03771	0.03710	0.03632	0.03546	0.03488	0.03451	0.03407	0.03381	0.03362		
CO2	0.09914	0.10127	0.10245	0.10323	0.10427	0.10496	0.10585	0.10682	0.10748	0.10790	0.10840	0.10870	0.10891		
H	0.00199	0.00154	0.00131	0.00117	0.00099	0.00088	0.00074	0.00059	0.00050	0.00044	0.00036	0.00032	0.00029		
H2	0.00894	0.00836	0.00805	0.00784	0.00758	0.00741	0.00719	0.00695	0.00680	0.00670	0.00659	0.00652	0.00647		
H2O	0.12204	0.12346	0.12422	0.12472	0.12539	0.12582	0.12639	0.12701	0.12744	0.12772	0.12805	0.12826	0.12841		
NO	0.00263	0.00241	0.00227	0.00215	0.00199	0.00187	0.00169	0.00147	0.00129	0.00118	0.00102	0.00092	0.00084		
N2	0.70466	0.70611	0.70690	0.70743	0.70814	0.70861	0.70922	0.70990	0.71038	0.71068	0.71105	0.71129	0.71145		
O	0.00074	0.00052	0.00042	0.00036	0.00028	0.00023	0.00018	0.00012	0.00009	0.00007	0.00005	0.00004	0.00003		
OH	0.00503	0.00434	0.00394	0.00366	0.00327	0.00301	0.00266	0.00224	0.00194	0.00174	0.00148	0.00132	0.00120		
O2	0.00419	0.00321	0.00269	0.00235	0.00191	0.00164	0.00129	0.00094	0.00071	0.00058	0.00042	0.00034	0.00028		

CASE= 6 O/F= 13.9562 F/A= 0.07165 PERCENT FUEL= 6.6862 PHI= 1.0500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2547.5	2586.7	2609.0	2624.5	2645.8	2660.7	2681.0	2705.7	2724.4	2737.3	2754.7	2766.5	2775.4
T, DEG F	4125.8	4196.3	4236.4	4264.3	4302.8	4329.5	4366.1	4410.5	4444.3	4467.4	4498.7	4520.0	4536.0
RHO, G/CC	6.6781-5	1.3194-4	1.9655-4	2.6082-4	3.8871-4	5.1597-4	7.6927-4	1.2728-3	1.8987-3	2.5221-3	3.7642-3	5.0018-3	6.2363-3
M, MOL WT	27.920	28.004	28.052	28.085	28.131	28.162	28.206	28.258	28.298	28.325	28.362	28.387	28.405
CP, CAL/(G)K	0.8447	0.7870	0.7556	0.7344	0.7060	0.6867	0.6608	0.6302	0.6074	0.5920	0.5713	0.5573	0.5469
GAMMA (S)	1.1427	1.1479	1.1511	1.1534	1.1567	1.1590	1.1624	1.1668	1.1703	1.1728	1.1764	1.1790	1.1810
SON VEL./M/SEC	931.1	938.9	943.5	946.6	951.1	954.2	958.5	963.8	967.9	970.7	974.7	977.4	979.5

MOLE FRACTIONS

AR	0.00839	0.00841	0.00843	0.00844	0.00845	0.00846	0.00847	0.00849	0.00850	0.00851	0.00852	0.00853	0.00853
CO	0.00488	0.00484	0.00425	0.04711	0.04148	0.04032	0.03869	0.03665	0.03505	0.03393	0.03239	0.03133	0.03053
CO2	0.08577	0.08882	0.09064	0.09194	0.09379	0.09510	0.09694	0.09923	0.10102	0.10227	0.10399	0.10517	0.10606
H	0.00433	0.00345	0.00300	0.00271	0.00234	0.00211	0.00181	0.00148	0.00126	0.00112	0.00094	0.00083	0.00076
H02	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00997	0.00912	0.00864	0.00831	0.00785	0.00753	0.00710	0.00658	0.00619	0.00593	0.00557	0.00533	0.00516
H2O	0.11024	0.11231	0.11348	0.11429	0.11540	0.11616	0.11720	0.11845	0.11939	0.12003	0.12089	0.12147	0.12190
NO	0.00626	0.00631	0.00630	0.00628	0.00622	0.00617	0.00607	0.00590	0.00574	0.00561	0.00540	0.00524	0.00510
N2	0.69927	0.70136	0.70257	0.70342	0.70460	0.70542	0.70656	0.70796	0.70904	0.70979	0.71082	0.71153	0.71206
O	0.00299	0.00239	0.00268	0.00188	0.00162	0.00145	0.00123	0.00099	0.00083	0.00072	0.00059	0.00052	0.00046
OH	0.01071	0.00991	0.00942	0.00907	0.00856	0.00819	0.00767	0.00702	0.00651	0.00615	0.00565	0.00530	0.00504
O2	0.01358	0.01206	0.01118	0.01056	0.00970	0.00909	0.00826	0.00724	0.00647	0.00594	0.00523	0.00475	0.00440

CASE= 6 O/F= 13.3218 F/A= 0.07506 PERCENT FUEL= 6.9824 PHI= 1.1000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2554.5	2593.5	2615.6	2630.9	2651.9	2666.3	2686.0	2709.7	2727.3	2739.3	2755.2	2765.8	2773.7
T, DEG F	4138.4	4208.6	4248.4	4275.9	4313.7	4339.7	4375.2	4417.7	4449.5	4471.0	4499.7	4518.8	4532.9
RHO, G/CC	6.6240-5	1.3088-4	1.9499-4	2.5877-4	3.8570-4	5.1203-4	7.6355-4	1.2637-3	1.8858-3	2.5056-3	3.7411-3	4.9728-3	6.2019-3
M, MOL WT	27.770	27.853	27.900	27.932	27.977	28.007	28.049	28.098	28.135	28.160	28.193	28.215	28.231
CP, CAL/(G)K	0.8387	0.7774	0.7439	0.7212	0.6905	0.6696	0.6414	0.6077	0.5825	0.5654	0.5423	0.5268	0.5151
GAMMA (S)	1.1439	1.1496	1.1531	1.1556	1.1593	1.1620	1.1659	1.1711	1.1754	1.1785	1.1830	1.1863	1.1890
SON VEL./M/SEC	935.3	943.4	948.0	951.3	955.9	959.1	963.5	969.0	973.3	976.3	980.4	983.3	985.5

MOLE FRACTIONS

AR	0.00831	0.00834	0.00835	0.00836	0.00838	0.00839	0.00840	0.00841	0.00842	0.00843	0.00844	0.00845	0.00845
CO	0.05630	0.05390	0.05246	0.05142	0.04997	0.04894	0.04749	0.04572	0.04435	0.04341	0.04215	0.04129	0.04066
CO2	0.08313	0.08596	0.08763	0.08833	0.09051	0.09169	0.09334	0.09537	0.09692	0.09798	0.09941	0.10038	0.10109
H	0.00493	0.00395	0.00345	0.00313	0.00271	0.00245	0.00211	0.00173	0.00148	0.00132	0.00112	0.00099	0.00090
H2	0.01219	0.01132	0.01083	0.01049	0.01002	0.00970	0.00927	0.00875	0.00837	0.00811	0.00777	0.00755	0.00739
H2O	0.11287	0.11505	0.11628	0.11713	0.11908	0.12016	0.12145	0.12241	0.12305	0.12391	0.12448	0.12490	0.12518
NO	0.00546	0.00541	0.00534	0.00527	0.00516	0.00506	0.00489	0.00464	0.00441	0.00423	0.00396	0.00376	0.00360
N2	0.69369	0.69579	0.69700	0.69785	0.69902	0.69983	0.70096	0.70233	0.70337	0.70408	0.70504	0.70569	0.70618
O	0.00267	0.00210	0.00181	0.00161	0.00137	0.00121	0.00101	0.00079	0.00064	0.00055	0.00044	0.00037	0.00032
OH	0.01030	0.00944	0.00892	0.00854	0.00800	0.00761	0.00706	0.00636	0.00582	0.00544	0.00491	0.00455	0.00428
O2	0.01016	0.00874	0.00793	0.00737	0.00659	0.00605	0.00532	0.00445	0.00382	0.00339	0.00284	0.00248	0.00222

CASE=	2	O/F=	29.3080	F/A=	0.03412	PERCENT FUEL=	3.2995	PHI=	0.5000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1589.8	1589.9	1590.0	1590.0	1590.1	1590.1	1590.1	1590.2	1590.2	1590.2	1590.3	1590.3	1590.3						
T, DEG F	2402.0	2402.2	2402.3	2402.4	2402.4	2402.5	2402.6	2402.6	2402.7	2402.7	2402.8	2402.8	2402.8						
RHO, G/CC	1.1104-4	2.2207-4	3.3309-4	4.4411-4	6.6615-4	8.8818-4	1.3322-3	2.2204-3	3.3305-3	4.4406-3	6.6609-3	8.8811-3	1.1101-2						
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.973	28.973	28.973	28.973	28.973	28.973						
CP, CAL/(G*IK)	0.3162	0.3159	0.3158	0.3157	0.3155	0.3155	0.3154	0.3152	0.3152	0.3151	0.3151	0.3150	0.3150						
GAMMA (S)	1.2773	1.2776	1.2778	1.2778	1.2780	1.2780	1.2781	1.2782	1.2783	1.2783	1.2784	1.2784	1.2784						
SON VEL, M/SEC	763.4	763.5	763.6	763.6	763.6	763.7	763.7	763.7	763.8	763.8	763.8	763.8	763.8						

MOLE FRACTIONS

AR	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902	0.00902						
CO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
CO2	0.06889	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890	0.06890						
H2O	0.06534	0.06535	0.06536	0.06536	0.06537	0.06537	0.06537	0.06538	0.06538	0.06538	0.06538	0.06539	0.06539						
NO	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135	0.00135						
NO2	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002						
N2	0.75465	0.75465	0.75465	0.75465	0.75466	0.75466	0.75466	0.75466	0.75466	0.75466	0.75466	0.75466	0.75466						
O	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00013	0.00011	0.00010	0.00009	0.00009	0.00008	0.00007	0.00006	0.00006	0.00005	0.00005	0.00005	0.00005						
O2	0.10060	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061	0.10061						

CASE=	2	O/F=	24.4233	F/A=	0.04094	PERCENT FUEL=	3.9334	PHI=	0.6000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	1780.5	1781.1	1781.3	1781.5	1781.7	1781.9	1782.1	1782.3	1782.4	1782.5	1782.6	1782.6	1782.7						
T, DEG F	2745.2	2746.2	2746.7	2747.0	2747.4	2747.7	2748.0	2748.4	2748.6	2748.7	2748.9	2749.0	2749.1						
RHO, G/CC	9.9141-5	1.9822-4	2.9730-4	3.9636-4	5.9447-4	7.9258-4	1.1888-3	1.9811-3	2.9714-3	3.9618-3	5.9424-3	7.9229-3	9.9034-3						
M, MOL WT	28.969	28.970	28.971	28.971	28.972	28.972	28.972	28.973	28.973	28.973	28.973	28.974	28.974						
CP, CAL/(G*IK)	0.3322	0.3307	0.3300	0.3296	0.3290	0.3287	0.3283	0.3278	0.3275	0.3273	0.3271	0.3269	0.3268						
GAMMA (S)	1.2618	1.2629	1.2635	1.2638	1.2642	1.2645	1.2648	1.2652	1.2654	1.2655	1.2657	1.2659	1.2659						
SON VEL, M/SEC	803.0	803.5	803.7	803.8	804.0	804.1	804.3	804.4	804.5	804.6	804.7	804.7	804.7						

MOLE FRACTIONS

AR	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896	0.00896						
CO	0.00007	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001						
CO2	0.08200	0.08203	0.08204	0.08204	0.08205	0.08206	0.08206	0.08207	0.08207	0.08207	0.08207	0.08208	0.08208						
H2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2O	0.07769	0.07774	0.07777	0.07778	0.07780	0.07781	0.07783	0.07785	0.07786	0.07787	0.07787	0.07789	0.07790						
NO	0.00249	0.00249	0.00249	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00251	0.00251	0.00251						
NO2	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002						
N2	0.74905	0.74908	0.74909	0.74910	0.74911	0.74912	0.74913	0.74914	0.74914	0.74914	0.74914	0.74915	0.74915						
O	0.00004	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000						
OH	0.00051	0.00043	0.00039	0.00037	0.00032	0.00031	0.00028	0.00025	0.00022	0.00021	0.00019	0.00017	0.00016						
O2	0.07916	0.07917	0.07918	0.07918	0.07919	0.07919	0.07920	0.07920	0.07920	0.07920	0.07920	0.07920	0.07920						

CASE= 3		O/F= 12.7426	F/A= 0.07848	PERCENT FUEL= 7.2766				PHI= 1.1500					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2380.5	2402.0	2413.1	2420.2	2429.2	2434.9	2442.0	2449.4	2454.3	2457.2	2460.7	2462.8	2464.3
T, DEG F	3825.1	3863.9	3883.8	3896.6	3912.9	3923.1	3935.9	3949.2	3958.0	3963.3	3969.6	3973.4	3976.0
RHO, G/C	7.158E-5	1.421E-4	2.123E-4	2.824E-4	4.224E-4	5.621E-4	8.412E-4	1.398E-3	2.094E-3	2.789E-3	4.179E-3	5.569E-3	6.957E-3
M, MOL WT	27.366	28.011	28.034	28.049	28.067	28.079	28.094	28.109	28.118	28.124	28.131	28.136	28.138
CP, CAL/(G)(K)	0.5808	0.5295	0.5029	0.4856	0.4635	0.4495	0.4321	0.4139	0.4021	0.3949	0.3865	0.3781	0.3711
GAMMA (S)	1.1736	1.1845	1.1911	1.1958	1.2025	1.2070	1.2132	1.2203	1.2253	1.2285	1.2325	1.2349	1.2366
SON VEL, M/SEC	911.3	919.0	923.3	926.2	930.2	932.9	936.4	940.3	943.0	944.7	946.8	948.0	948.9

MOLE FRACTIONS

AR	0.00835	0.00836	0.00837	0.00837	0.00838	0.00838	0.00838	0.00839	0.00839	0.00839	0.00840	0.00840	0.00840
CO	0.05230	0.05099	0.05031	0.04987	0.04932	0.04898	0.04856	0.04812	0.04784	0.04768	0.04748	0.04737	0.04729
CO2	0.09403	0.09558	0.09637	0.09669	0.09753	0.09794	0.09844	0.09895	0.09928	0.09948	0.09971	0.09985	0.09994
H	0.00222	0.00171	0.00145	0.00129	0.00109	0.00096	0.00081	0.00064	0.00053	0.00047	0.00039	0.00034	0.00030
H2	0.01192	0.01143	0.01119	0.01103	0.01084	0.01072	0.01058	0.01043	0.01034	0.01028	0.01022	0.01018	0.01016
H2O	0.12409	0.12542	0.12611	0.12655	0.12712	0.12748	0.12793	0.12841	0.12873	0.12892	0.12916	0.12930	0.12940
N	0.00189	0.00165	0.00150	0.00139	0.00123	0.00113	0.00098	0.00082	0.00070	0.00062	0.00052	0.00046	0.00042
N2	0.69817	0.69942	0.70007	0.70049	0.70103	0.70137	0.70181	0.70227	0.70257	0.70276	0.70298	0.70312	0.70321
O	0.00052	0.00035	0.00027	0.00022	0.00016	0.00013	0.00010	0.00006	0.00005	0.00004	0.00002	0.00002	0.00002
OH	0.00424	0.00353	0.00313	0.00286	0.00249	0.00225	0.00193	0.00158	0.00134	0.00118	0.00099	0.00087	0.00079
O2	0.00226	0.00158	0.00125	0.00104	0.00080	0.00065	0.00048	0.00032	0.00023	0.00018	0.00013	0.00010	0.00008

CASE= 3		O/F= 12.2117	F/A= 0.08189	PERCENT FUEL= 7.5691				PHI= 1.2000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2363.6	2380.5	2388.8	2394.0	2400.4	2404.3	2409.1	2414.0	2417.2	2419.0	2421.3	2422.5	2423.5
T, DEG F	3794.7	3825.3	3840.2	3849.5	3861.0	3868.1	3876.7	3885.5	3891.2	3894.6	3898.6	3901.0	3902.7
RHO, G/C	7.157E-5	1.423E-4	2.128E-4	2.833E-4	4.240E-4	5.646E-4	8.455E-4	1.406E-3	2.108E-3	2.808E-3	4.210E-3	5.611E-3	7.011E-3
M, MOL WT	27.765	27.800	27.817	27.829	27.841	27.849	27.858	27.868	27.875	27.878	27.883	27.886	27.887
CP, CAL/(G)(K)	0.5203	0.4761	0.4547	0.4413	0.4251	0.4151	0.4033	0.3913	0.3837	0.3792	0.3740	0.3709	0.3688
GAMMA (S)	1.1882	1.2004	1.2072	1.2118	1.2180	1.2220	1.2274	1.2326	1.2362	1.2385	1.2412	1.2429	1.2440
SON VEL, M/SEC	917.1	924.5	928.4	931.0	934.4	936.6	939.3	942.2	944.1	945.3	946.7	947.5	948.1

MOLE FRACTIONS

AR	0.00826	0.00827	0.00828	0.00828	0.00828	0.00829	0.00829	0.00829	0.00829	0.00829	0.00830	0.00830	0.00830
CO	0.06301	0.06224	0.06187	0.06164	0.06137	0.06120	0.06101	0.06081	0.06069	0.06062	0.06054	0.06049	0.06046
CO2	0.08809	0.08905	0.08951	0.08980	0.09015	0.09035	0.09060	0.09085	0.09101	0.09110	0.09120	0.09127	0.09131
H	0.00234	0.00178	0.00150	0.00133	0.00112	0.00098	0.00082	0.00065	0.00053	0.00047	0.00038	0.00034	0.00030
H2	0.01561	0.01526	0.01510	0.01500	0.01488	0.01481	0.01473	0.01465	0.01460	0.01457	0.01453	0.01451	0.01450
H2O	0.12533	0.12647	0.12704	0.12740	0.12785	0.12813	0.12847	0.12882	0.12905	0.12919	0.12935	0.12945	0.12952
N	0.00128	0.00106	0.00093	0.00085	0.00073	0.00066	0.00056	0.00045	0.00038	0.00034	0.00028	0.00024	0.00022
N2	0.69125	0.69223	0.69272	0.69303	0.69342	0.69365	0.69394	0.69424	0.69444	0.69456	0.69470	0.69478	0.69484
O	0.00033	0.00021	0.00015	0.00012	0.00009	0.00007	0.00005	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001
OH	0.00337	0.00270	0.00234	0.00211	0.00180	0.00161	0.00136	0.00109	0.00091	0.00080	0.00066	0.00058	0.00052
O2	0.00112	0.00072	0.00054	0.00043	0.00032	0.00025	0.00018	0.00011	0.00008	0.00006	0.00004	0.00003	0.00003

CASE= 5 O/F= 29.3080 F/A= 0.03412 PERCENT FUEL= 3.2995 PHI= 0.5000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2036.3	2039.4	2041.0	2041.9	2043.1	2043.8	2044.7	2045.7	2046.4	2046.8	2047.3	2047.7	2047.9
T, DEG F	3205.6	3211.3	3214.0	3215.7	3217.8	3219.2	3220.8	3222.6	3223.8	3224.5	3225.5	3226.1	3226.5
RHO, G/CC	8.6609-5	1.7299-4	2.5932-4	3.4562-4	5.1818-4	6.9069-4	1.0356-3	1.7253-3	2.5873-3	3.4491-3	5.1726-3	6.8959-3	8.6190-3
M, MOL WT	28.943	28.950	28.953	28.955	28.957	28.959	28.961	28.963	28.964	28.965	28.966	28.967	28.967
CP, CAL/(G*IK)	0.3623	0.3554	0.3522	0.3502	0.3477	0.3462	0.3443	0.3423	0.3410	0.3402	0.3392	0.3385	0.3381
GAMMA (S)	1.2409	1.2449	1.2469	1.2482	1.2497	1.2507	1.2519	1.2532	1.2541	1.2546	1.2553	1.2557	1.2560
SON VEL, M/SEC	852.0	853.9	854.9	855.5	856.2	856.7	857.3	857.9	858.3	858.6	858.9	859.1	859.2

MOLE FRACTIONS

AR	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00901	0.00902	0.00902	0.00902	0.00902
CO	0.00054	0.00039	0.00033	0.00029	0.00024	0.00020	0.00017	0.00013	0.00011	0.00009	0.00008	0.00007	0.00006
CO2	0.06829	0.06845	0.06853	0.06857	0.06863	0.06866	0.06870	0.06875	0.06877	0.06879	0.06881	0.06882	0.06883
H	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00011	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001
H2O	0.06424	0.06443	0.06453	0.06459	0.06467	0.06473	0.06479	0.06487	0.06492	0.06496	0.06500	0.06503	0.06505
N0	0.00597	0.00602	0.00605	0.00606	0.00608	0.00609	0.00611	0.00612	0.00614	0.00614	0.00615	0.00616	0.00616
N2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004
N2	0.75159	0.75173	0.75160	0.75184	0.75189	0.75192	0.75196	0.75201	0.75204	0.75205	0.75208	0.75209	0.75210
O	0.00039	0.00028	0.00023	0.00020	0.00017	0.00014	0.00012	0.00009	0.00008	0.00007	0.00005	0.00005	0.00004
OH	0.00196	0.00167	0.00152	0.00142	0.00130	0.00121	0.00110	0.00097	0.00098	0.00082	0.00075	0.00069	0.00066
O2	0.09787	0.09790	0.09792	0.09793	0.09794	0.09795	0.09797	0.09799	0.09800	0.09800	0.09801	0.09802	0.09802

CASE= 5 O/F= 24.4233 F/A= 0.04094 PERCENT FUEL= 3.9334 PHI= 0.6000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2188.1	2196.4	2200.5	2203.1	2206.3	2208.4	2210.9	2213.7	2215.5	2216.7	2218.1	2219.0	2219.7
T, DEG F	3478.8	3493.8	3501.1	3505.8	3511.7	3515.3	3520.0	3524.9	3528.2	3530.3	3532.9	3534.6	3535.7
RHO, G/CC	8.0456-5	1.6040-4	2.4023-4	3.1999-4	4.7939-4	6.3869-4	9.5710-4	1.5935-3	2.3886-3	3.1834-3	4.7725-3	6.3611-3	7.9495-3
M, MOL WT	28.891	28.909	28.918	28.923	28.930	28.934	28.940	28.946	28.950	28.952	28.955	28.957	28.958
CP, CAL/(G*IK)	0.4170	0.3997	0.3914	0.3862	0.3797	0.3756	0.3706	0.3654	0.3619	0.3597	0.3570	0.3554	0.3542
GAMMA (S)	1.2138	1.2209	1.2247	1.2271	1.2302	1.2322	1.2348	1.2376	1.2395	1.2407	1.2422	1.2431	1.2438
SON VEL, M/SEC	874.2	878.2	880.2	881.6	883.2	884.3	885.6	887.1	888.1	888.7	889.5	890.0	890.3

MOLE FRACTIONS

AR	0.00893	0.00894	0.00894	0.00894	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895	0.00895
CO	0.00223	0.00169	0.00142	0.00126	0.00105	0.00093	0.00077	0.00061	0.00050	0.00044	0.00036	0.00032	0.00029
CO2	0.07962	0.08022	0.08051	0.08069	0.08091	0.08105	0.08122	0.08140	0.08151	0.08158	0.08167	0.08172	0.08176
H	0.00015	0.00010	0.00007	0.00006	0.00005	0.00004	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00041	0.00030	0.00026	0.00023	0.00019	0.00017	0.00014	0.00011	0.00009	0.00008	0.00006	0.00006	0.00005
H2O	0.07534	0.07576	0.07598	0.07612	0.07631	0.07643	0.07658	0.07676	0.07688	0.07696	0.07706	0.07713	0.07718
N0	0.00760	0.00775	0.00782	0.00786	0.00792	0.00795	0.00800	0.00805	0.00808	0.00810	0.00813	0.00814	0.00816
N2	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003	0.00003	0.00004	0.00004
N2	0.74448	0.74486	0.74505	0.74517	0.74532	0.74542	0.74553	0.74566	0.74574	0.74579	0.74586	0.74590	0.74592
O	0.00097	0.00073	0.00061	0.00053	0.00045	0.00039	0.00032	0.00026	0.00021	0.00018	0.00015	0.00013	0.00012
OH	0.00387	0.00338	0.00311	0.00292	0.00268	0.00252	0.00230	0.00205	0.00187	0.00175	0.00159	0.00148	0.00141
O2	0.07639	0.07627	0.07623	0.07620	0.07617	0.07615	0.07614	0.07612	0.07612	0.07612	0.07611	0.07611	0.07611

CASE= 6 O/F= 12.7426 F/A= 0.07848 PERCENT FUEL= 7.2766 PHI= 1.1500
 P, ATM 0.5000 1.0000 1.5000 2.0000 3.0000 4.0000 6.0000 10.000 15.000 20.000 30.000 40.000 50.000
 P, PSIA 7.3 14.7 22.0 29.4 44.1 58.8 88.2 147.0 220.4 293.9 440.9 587.8 734.8
 T, DEG K 2556.9 2594.9 2616.2 2630.8 2650.7 2664.2 2682.4 2703.7 2719.3 2729.6 2743.0 2751.7 2758.0
 T, DEG F 4142.7 4211.1 4249.4 4275.7 4311.5 4335.8 4368.6 4407.0 4435.1 4453.6 4477.7 4493.3 4504.6
 RHO, G/CC 6.5803-5 1.3006-4 1.9381-4 2.5726-4 3.8357-4 5.0935-4 7.5988-4 1.2585-3 1.8790-3 2.4978-3 3.7321-3 4.9635-3 6.1930-3
 M, MOL WT 27.612 27.692 27.737 27.768 27.810 27.838 27.876 27.920 27.952 27.973 28.001 28.018 28.031
 CP, CAL/(G)(K) 0.8148 0.7494 0.7135 0.6891 0.6561 0.6336 0.6034 0.5676 0.5412 0.5236 0.5004 0.4852 0.4741
 GAMMA (S) 1.1467 1.1532 1.1573 1.1603 1.1647 1.1680 1.1728 1.1792 1.1845 1.1884 1.1939 1.1979 1.2009
 SON VEL, M/SEC 939.6 947.9 952.7 956.0 960.7 964.1 968.7 974.4 978.8 981.9 986.1 989.0 991.2

MOLE FRACTIONS

AR 0.00824 0.00826 0.00828 0.00829 0.00830 0.00831 0.00832 0.00833 0.00834 0.00835 0.00836 0.00836 0.00837
 CO 0.06448 0.06240 0.06117 0.06030 0.05908 0.05823 0.05706 0.05566 0.05462 0.05392 0.05301 0.05242 0.05199
 CO2 0.07999 0.08249 0.08396 0.08499 0.08643 0.08743 0.08879 0.09043 0.09164 0.09244 0.09350 0.09418 0.09468
 H 0.00549 0.00441 0.00386 0.00350 0.00304 0.00274 0.00236 0.00194 0.00165 0.00147 0.00125 0.00111 0.00101
 H2 0.01478 0.01393 0.01345 0.01312 0.01267 0.01236 0.01195 0.01148 0.01113 0.01091 0.01062 0.01044 0.01031
 H2O 0.11512 0.11737 0.11863 0.11950 0.12067 0.12147 0.12255 0.12381 0.12474 0.12535 0.12614 0.12666 0.12704
 NO 0.00464 0.00450 0.00438 0.00428 0.00412 0.00398 0.00377 0.00347 0.00321 0.00302 0.00275 0.00255 0.00240
 N2 0.68795 0.69002 0.69120 0.69202 0.69315 0.69392 0.69497 0.69623 0.69716 0.69778 0.69860 0.69914 0.69954
 O 0.00230 0.00176 0.00149 0.00132 0.00109 0.00095 0.00077 0.00058 0.00046 0.00039 0.00030 0.00024 0.00021
 OH 0.00966 0.00875 0.00319 0.00779 0.00721 0.00680 0.00623 0.00551 0.00495 0.00456 0.00404 0.00369 0.00343
 O2 0.00735 0.00609 0.00538 0.00490 0.00425 0.00381 0.00323 0.00256 0.00209 0.00180 0.00143 0.00120 0.00104

CASE= 6 O/F= 12.2117 F/A= 0.08189 PERCENT FUEL= 7.5691 PHI= 1.2000
 P, ATM 0.5000 1.0000 1.5000 2.0000 3.0000 4.0000 6.0000 10.000 15.000 20.000 30.000 40.000 50.000
 P, PSIA 7.3 14.7 22.0 29.4 44.1 58.8 88.2 147.0 220.4 293.9 440.9 587.8 734.8
 T, DEG K 2554.6 2590.6 2610.5 2624.0 2642.1 2654.2 2670.2 2688.5 2701.5 2719.8 2720.3 2727.0 2731.8
 T, DEG F 4138.5 4203.5 4239.3 4263.6 4296.1 4317.9 4346.7 4379.6 4402.9 4417.9 4436.9 4478.9 4457.4
 RHO, G/CC 6.5470-5 1.2947-4 1.9302-4 2.5629-4 3.8233-4 5.0791-4 7.5820-4 1.2568-3 1.8779-3 2.4977-3 3.7349-3 4.9700-3 6.2039-3
 M, MOL WT 27.447 27.523 27.565 27.593 27.630 27.655 27.688 27.726 27.752 27.769 27.790 27.804 27.813
 CP, CAL/(G)(K) 0.7751 0.7065 0.6691 0.6438 0.6098 0.5871 0.5569 0.5224 0.4977 0.4818 0.4616 0.4488 0.4398
 GAMMA (S) 1.1512 1.1590 1.1639 1.1675 1.1729 1.1768 1.1826 1.1901 1.1962 1.2004 1.2064 1.2104 1.2134
 SON VEL, M/SEC 943.8 952.4 957.3 960.8 965.7 969.1 973.8 979.5 983.9 986.9 990.9 993.5 995.4

MOLE FRACTIONS

AR 0.00817 0.00819 0.00820 0.00821 0.00822 0.00823 0.00824 0.00825 0.00826 0.00826 0.00827 0.00827 0.00827
 CO 0.07297 0.07128 0.07030 0.06962 0.06868 0.06804 0.06718 0.06619 0.06548 0.06503 0.06445 0.06408 0.06383
 CO2 0.07640 0.07850 0.07971 0.08055 0.08169 0.08246 0.08350 0.08470 0.08555 0.08610 0.08679 0.08723 0.08754
 H 0.00597 0.00479 0.00418 0.00379 0.00328 0.00296 0.00254 0.00208 0.00177 0.00157 0.00133 0.00117 0.00106
 H2 0.01781 0.01701 0.01656 0.01626 0.01586 0.01559 0.01524 0.01484 0.01457 0.01439 0.01417 0.01404 0.01395
 H2O 0.11694 0.11921 0.12046 0.12131 0.12246 0.12323 0.12426 0.12543 0.12627 0.12681 0.12750 0.12794 0.12825
 NO 0.00384 0.00363 0.00348 0.00335 0.00316 0.00301 0.00278 0.00248 0.00224 0.00207 0.00183 0.00166 0.00154
 N2 0.68206 0.68405 0.68517 0.68593 0.68696 0.68766 0.68859 0.68968 0.69046 0.69096 0.69161 0.69203 0.69233
 O 0.00189 0.00141 0.00117 0.00101 0.00082 0.00070 0.00055 0.00040 0.00031 0.00025 0.00019 0.00015 0.00013
 OH 0.00883 0.00787 0.00728 0.00686 0.00627 0.00585 0.00527 0.00456 0.00403 0.00366 0.00319 0.00287 0.00264
 O2 0.00511 0.00405 0.00348 0.00309 0.00259 0.00226 0.00184 0.00138 0.00108 0.00090 0.00068 0.00055 0.00047

	CASE= 2	O/F= 20.9343	F/A= 0.04777	PERCENT FUEL= 4.5591				PHI= 0.7000							
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000		
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8		
T, DEG K	1955.9	1958.2	1955.3	1960.0	1960.8	1961.4	1962.0	1967.7	1963.2	1963.5	1963.9	1964.1	1964.3		
T, DEG F	3061.0	3065.1	3067.1	3068.3	3069.8	3070.8	3071.9	3073.2	3074.1	3074.6	3075.3	3075.7	3076.0		
RHO, G/CC	9.0204-5	1.8323-4	2.7021-4	3.6017-4	5.4006-4	7.1991-4	1.0795-3	1.7987-3	2.6975-3	3.5962-3	5.3934-3	7.1905-3	8.9875-3		
M, MOL WT	28.955	28.960	28.962	28.963	28.965	28.966	28.967	28.969	28.970	28.971	28.971	28.972	28.972		
CP, CAL/(G)(K)	0.3583	0.3527	0.3501	0.3485	0.3465	0.3453	0.3438	0.3423	0.3412	0.3406	0.3398	0.3393	0.3389		
GAMMA (S)	1.2424	1.2458	1.2474	1.2484	1.2497	1.2505	1.2515	1.2525	1.2532	1.2537	1.2542	1.2548	1.2548		
SON VEL, M/SEC	835.3	836.9	837.6	838.1	838.7	839.1	839.5	840.0	840.3	840.5	840.8	840.9	841.0		

MOLE FRACTIONS

AR	0.00889	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890	0.00890
CO	0.00050	0.00036	0.00030	0.00026	0.00021	0.00019	0.00015	0.00012	0.00010	0.00008	0.00007	0.00006	0.00005
CO2	0.09454	0.09469	0.09476	0.09480	0.09485	0.09488	0.09492	0.09496	0.09498	0.09500	0.09502	0.09503	0.09504
H	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00011	0.00008	0.00006	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001
H2O	0.08953	0.08968	0.08975	0.08980	0.08986	0.08990	0.08995	0.09001	0.09005	0.09007	0.09010	0.09012	0.09014
NO	0.00367	0.00369	0.00371	0.00371	0.00372	0.00373	0.00373	0.00374	0.00375	0.00375	0.00375	0.00376	0.00376
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00002
N2	0.74321	0.74332	0.74337	0.74341	0.74345	0.74347	0.74350	0.74353	0.74355	0.74357	0.74358	0.74359	0.74360
O	0.00016	0.00012	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002
OH	0.00137	0.00116	0.00106	0.00099	0.00090	0.00084	0.00076	0.00067	0.00061	0.00057	0.00051	0.00048	0.00045
O2	0.05801	0.05799	0.05799	0.05799	0.05799	0.05799	0.05799	0.05799	0.05800	0.05800	0.05800	0.05800	0.05800

	CASE= 2	O/F= 18.3175	F/A= 0.05459	PERCENT FUEL= 5.1767				PHI= 0.8000							
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000		
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	233.9	440.9	587.8	734.8		
T, DEG K	2109.3	2116.3	2119.8	2121.9	2124.7	2126.4	2128.5	2130.7	2132.2	2133.2	2134.3	2135.1	2135.6		
T, DEG F	3337.0	3349.7	3355.9	3359.8	3364.7	3367.7	3371.6	3375.6	3378.3	3380.0	3382.1	3383.4	3384.3		
RHO, G/CC	8.3515-5	1.6656-4	2.4950-4	3.3237-4	4.9802-4	6.6358-4	9.9454-4	1.6561-3	2.4826-3	3.3090-3	4.9612-3	6.6130-3	8.2646-3		
M, MOL WT	28.905	28.925	28.932	28.937	28.942	28.946	28.950	28.955	28.958	28.960	28.963	28.964	28.965		
CP, CAL/(G)(K)	0.4117	0.3956	0.3878	0.3830	0.3769	0.3732	0.3686	0.3637	0.3605	0.3585	0.3561	0.3546	0.3536		
GAMMA (S)	1.2149	1.2219	1.2255	1.2278	1.2309	1.2328	1.2352	1.2379	1.2396	1.2408	1.2422	1.2430	1.2436		
SON VEL, M/SEC	858.5	862.2	864.0	865.2	866.8	867.7	868.9	870.3	871.2	871.7	872.4	872.8	873.1		

MOLE FRACTIONS

AR	0.00882	0.00883	0.00883	0.00883	0.00883	0.00883	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884
CO	0.00237	0.00178	0.00150	0.00132	0.00111	0.00097	0.00081	0.00064	0.00053	0.00046	0.00038	0.00033	0.00030
CO2	0.10533	0.10597	0.10628	0.10617	0.10671	0.10686	0.10704	0.10723	0.10735	0.10743	0.10752	0.10757	0.10761
H	0.00010	0.00006	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001
H2O	0.00046	0.00034	0.00029	0.00025	0.00021	0.00018	0.00015	0.00012	0.00010	0.00009	0.00007	0.00006	0.00006
H2O	0.10055	0.10091	0.10110	0.10122	0.10137	0.10147	0.10159	0.10173	0.10183	0.10189	0.10197	0.10202	0.10206
NO	0.00443	0.00450	0.00453	0.00455	0.00457	0.00459	0.00461	0.00463	0.00465	0.00466	0.00467	0.00468	0.00468
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
N2	0.73685	0.73720	0.73737	0.73748	0.73761	0.73770	0.73780	0.73791	0.73798	0.73803	0.73809	0.73812	0.73814
O	0.00041	0.00030	0.00025	0.00022	0.00018	0.00016	0.00013	0.00010	0.00009	0.00007	0.00006	0.00005	0.00005
OH	0.00269	0.00234	0.00214	0.00201	0.00184	0.00173	0.00158	0.00140	0.00127	0.00115	0.00108	0.00101	0.00096
O2	0.03800	0.03777	0.03766	0.03759	0.03752	0.03747	0.03742	0.03737	0.03734	0.03732	0.03730	0.03729	0.03728

	CASE= 3	O/F= 10.4671	F/A= 0.09554	PERCENT FUEL= 8.7206				PHI= 1.4000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2239.3	2244.9	2247.5	2249.1	2251.0	2252.1	2253.4	2254.8	2255.7	2256.2	2256.8	2257.2	2257.5
T, DEG F	3571.1	3581.2	3585.8	3588.6	3592.0	3594.0	3595.5	3596.5	3599.0	3601.5	3602.6	3603.3	3603.7
RHO, G/CC	7.3151-5	1.4600-4	2.1879-4	2.9156-4	4.3704-4	5.8247-4	8.7328-4	1.4547-3	2.1814-3	2.9080-3	4.3610-3	5.8139-3	7.2667-3
M, MOL WT	26.883	26.895	26.900	26.904	26.908	26.910	26.913	26.916	26.918	26.919	26.920	26.921	26.922
CP, CAL/(G)(K)	0.4029	0.3893	0.3832	0.3796	0.3752	0.3726	0.3695	0.3664	0.3645	0.3633	0.3619	0.3611	0.3605
GAMMA (S)	1.2362	1.2429	1.2460	1.2480	1.2503	1.2518	1.2535	1.2553	1.2565	1.2572	1.2580	1.2585	1.2589
SON VEL, M/SEC	925.3	928.7	930.4	931.4	932.6	933.3	934.2	935.1	935.7	936.0	936.4	936.7	936.8

MOLE FRACTIONS

AR	0.00790	0.00790	0.00790	0.00790	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791	0.00791
CO	0.10463	0.10469	0.10472	0.10474	0.10477	0.10478	0.10480	0.10482	0.10483	0.10484	0.10485	0.10485	0.10486
CO2	0.06389	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390	0.06390
H	0.00190	0.00139	0.00115	0.00100	0.00083	0.00072	0.00059	0.00046	0.00038	0.00033	0.00027	0.00023	0.00021
H2	0.03719	0.03722	0.03723	0.03724	0.03725	0.03726	0.03727	0.03728	0.03728	0.03729	0.03729	0.03730	0.03730
H2O	0.12180	0.12222	0.12242	0.12254	0.12268	0.12277	0.12287	0.12298	0.12305	0.12309	0.12313	0.12316	0.12318
NO	0.00019	0.00014	0.00012	0.00011	0.00009	0.00008	0.00006	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002
N2	0.66148	0.66180	0.66194	0.66203	0.66214	0.66220	0.66228	0.66236	0.66241	0.66244	0.66249	0.66249	0.66251
O	0.00003	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00094	0.00069	0.00058	0.00051	0.00042	0.00037	0.00030	0.00024	0.00019	0.00017	0.00014	0.00012	0.00011
O2	0.00004	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

	CASE= 3	O/F= 9.1588	F/A= 0.10919	PERCENT FUEL= 9.8437				PHI= 1.6000					
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2093.0	2095.3	2096.3	2097.0	2097.7	2098.2	2098.7	2099.2	2099.6	2099.8	2100.0	2100.2	2100.3
T, DEG F	3307.7	3311.9	3313.7	3314.8	3316.2	3317.0	3317.9	3318.9	3319.5	3319.5	3320.3	3320.6	3320.8
RHO, G/CC	7.5750-5	1.5136-4	2.2695-4	3.0253-4	4.5366-4	6.0478-4	9.0698-4	1.5113-3	2.2667-3	3.0220-3	4.5325-3	6.0430-3	7.5535-3
M, MOL WT	26.020	26.025	26.027	26.028	26.030	26.031	26.032	26.033	26.034	26.034	26.035	26.035	26.036
CP, CAL/(G)(K)	0.3789	0.3734	0.3709	0.3694	0.3676	0.3666	0.3653	0.3640	0.3632	0.3627	0.3622	0.3618	0.3616
GAMMA (S)	1.2577	1.2609	1.2624	1.2633	1.2644	1.2651	1.2658	1.2666	1.2671	1.2674	1.2678	1.2680	1.2682
SON VEL, M/SEC	917.2	918.7	919.5	919.9	920.4	920.8	921.1	921.5	921.8	921.9	922.1	922.2	922.3

MOLE FRACTIONS

AR	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755	0.00755
CO	0.13744	0.13752	0.13755	0.13757	0.13760	0.13761	0.13763	0.13765	0.13766	0.13767	0.13767	0.13768	0.13768
CO2	0.04663	0.04659	0.04657	0.04656	0.04655	0.04654	0.04653	0.04652	0.04652	0.04651	0.04651	0.04651	0.04651
H	0.00108	0.00077	0.00063	0.00055	0.00045	0.00039	0.00032	0.00025	0.00020	0.00018	0.00015	0.00013	0.00011
H2	0.06576	0.06583	0.06586	0.06588	0.06591	0.06592	0.06594	0.06596	0.06597	0.06597	0.06598	0.06598	0.06598
H2O	0.10886	0.10900	0.10906	0.10910	0.10915	0.10917	0.10921	0.10924	0.10926	0.10927	0.10929	0.10929	0.10930
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001
NO	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
N2	0.63244	0.63256	0.63262	0.63265	0.63269	0.63271	0.63274	0.63277	0.63279	0.63280	0.63281	0.63282	0.63283
OH	0.00021	0.00015	0.00013	0.00011	0.00009	0.00008	0.00006	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002

CASE= 5 O/F= 20.9343 F/A= 0.04777 PERCENT FUEL= 4.5591 PHI= 0.7000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2310.2	2326.6	2335.1	2340.6	2347.7	2352.3	2358.1	2364.5	2368.9	2371.7	2375.2	2377.4	2378.9
T, DEG F	3698.6	3728.2	3743.5	3753.4	3766.2	3774.4	3785.0	3796.5	3804.4	3809.4	3815.6	3819.6	3822.4
RHO, G/C	7.5930-5	1.5097-4	2.2578-4	3.0046-4	4.4957-4	5.9846-4	8.9586-4	1.4898-3	2.2313-3	2.9721-3	4.4528-3	5.9326-3	7.4118-3
M, MOL WT	28.787	28.823	28.842	28.854	28.869	28.879	28.892	28.906	28.915	28.921	28.929	28.933	28.937
CP, CAL/(G)(K)	0.5051	0.4733	0.4572	0.4467	0.4334	0.4249	0.4142	0.4026	0.3947	0.3898	0.3836	0.3798	0.3771
GAMMA (S)	1.1860	1.1946	1.1994	1.2028	1.2073	1.2103	1.2144	1.2190	1.2223	1.2245	1.2273	1.2290	1.2303
SON VEL, M/SEC	889.6	895.4	898.6	900.7	903.5	905.4	907.8	910.5	912.5	913.7	915.3	916.3	917.0

MOLE FRACTIONS

AR	0.00884	0.00885	0.00886	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00889	0.00889	0.00889
CO	0.00639	0.00511	0.00444	0.00400	0.00344	0.00308	0.00262	0.00212	0.00179	0.00158	0.00132	0.00116	0.00105
CO2	0.08809	0.08949	0.09022	0.09070	0.09131	0.09171	0.09220	0.09275	0.09311	0.09334	0.09363	0.09380	0.09392
H	0.00048	0.00033	0.00026	0.00022	0.00017	0.00014	0.00011	0.00008	0.00006	0.00005	0.00004	0.00003	0.00003
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
H2	0.00111	0.00087	0.00075	0.00067	0.00058	0.00051	0.00044	0.00035	0.00029	0.00026	0.00022	0.00019	0.00017
H20	0.08538	0.08613	0.08653	0.08679	0.08714	0.08736	0.08766	0.08800	0.08824	0.08840	0.08860	0.08873	0.08882
NO	0.00848	0.00874	0.00887	0.00895	0.00907	0.00914	0.00923	0.00934	0.00941	0.00946	0.00952	0.00955	0.00958
NO2	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002	0.00003	0.00003
N2	0.73649	0.73729	0.73770	0.73796	0.73830	0.73852	0.73880	0.73910	0.73931	0.73944	0.73960	0.73970	0.73977
O	0.00176	0.00137	0.00117	0.00104	0.00088	0.00078	0.00066	0.00053	0.00044	0.00039	0.00032	0.00028	0.00026
OH	0.00614	0.00549	0.00512	0.00487	0.00451	0.00427	0.00394	0.00355	0.00326	0.00307	0.00281	0.00264	0.00251
O2	0.05682	0.05633	0.05608	0.05592	0.05572	0.05559	0.05543	0.05527	0.05517	0.05510	0.05503	0.05498	0.05495

CASE= 5 O/F= 18.3175 F/A= 0.05459 PERCENT FUEL= 5.1767 PHI= 0.8000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2401.1	2426.4	2440.0	2449.2	2461.4	2469.6	2480.2	2492.4	2501.0	2506.7	2513.9	2518.5	2521.8
T, DEG F	3862.3	3907.8	3932.4	3948.9	3970.9	3985.5	4004.7	4026.6	4042.2	4052.3	4065.2	4073.6	4079.5
RHO, G/C	7.2641-5	1.4405-4	2.1509-4	2.8591-4	4.2713-4	5.6799-4	8.4900-4	1.4094-3	2.1082-3	2.8058-3	4.1990-3	5.5903-3	6.9804-3
M, MOL WT	28.624	28.680	28.710	28.728	28.757	28.775	28.798	28.825	28.844	28.856	28.872	28.882	28.889
CP, CAL/(G)(K)	0.6180	0.5739	0.5505	0.5348	0.5142	0.5006	0.4828	0.4626	0.4484	0.4392	0.4274	0.4199	0.4145
GAMMA (S)	1.1643	1.1719	1.1765	1.1798	1.1845	1.1878	1.1924	1.1980	1.2024	1.2053	1.2093	1.2120	1.2140
SON VEL, M/SEC	901.1	907.9	911.8	914.5	918.1	920.6	924.0	928.1	931.0	933.0	935.7	937.4	938.7

MOLE FRACTIONS

AR	0.00874	0.00875	0.00876	0.00877	0.00878	0.00878	0.00879	0.00880	0.00880	0.00881	0.00881	0.00881	0.00882
CO	0.01381	0.01170	0.01053	0.00973	0.00865	0.00793	0.00697	0.00587	0.00509	0.00458	0.00392	0.00350	0.00320
CO2	0.09282	0.09514	0.09642	0.09730	0.09847	0.09926	0.10031	0.10151	0.10236	0.10292	0.10363	0.10409	0.10442
H	0.00110	0.00080	0.00065	0.00056	0.00046	0.00039	0.00031	0.00023	0.00018	0.00015	0.00012	0.00010	0.00009
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
H2	0.00240	0.00198	0.00176	0.00161	0.00142	0.00129	0.00112	0.00093	0.00080	0.00072	0.00061	0.00054	0.00050
H20	0.09436	0.09548	0.09608	0.09649	0.09704	0.09741	0.09789	0.09846	0.09887	0.09914	0.09949	0.09972	0.09989
NO	0.00847	0.00877	0.00894	0.00905	0.00919	0.00929	0.00941	0.00956	0.00966	0.00973	0.00981	0.00987	0.00991
NO2	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00002
N2	0.72754	0.72881	0.72949	0.72995	0.73057	0.73097	0.73151	0.73212	0.73255	0.73283	0.73319	0.73342	0.73358
O	0.00246	0.00196	0.00171	0.00154	0.00133	0.00120	0.00102	0.00084	0.00071	0.00063	0.00053	0.00047	0.00043
OH	0.00815	0.00745	0.00704	0.00675	0.00634	0.00606	0.00566	0.00518	0.00480	0.00455	0.00420	0.00397	0.00379
O2	0.04014	0.03914	0.03860	0.03823	0.03773	0.03741	0.03698	0.03649	0.03614	0.03592	0.03565	0.03547	0.03535

CASE=	2	O/F=	17.2400	F/A=	0.05800	PERCENT FUEL=	5.4825	PHI=	0.8500										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2173.7	2184.7	2190.2	2193.8	2198.3	2201.1	2204.7	2208.6	2211.2	2212.8	2214.8	2216.1	2216.9						
T, DEG F	3453.0	3472.8	3482.7	3489.1	3497.2	3502.3	3508.8	3515.7	3520.4	3523.3	3526.9	3529.2	3530.8						
RHO, G/CC	8.0913-5	1.6114-4	2.4120-4	3.2117-4	4.8093-4	6.4055-4	9.5952-4	1.5969-3	2.3929-3	3.1886-3	4.7793-3	6.3694-3	7.9591-3						
M, MOL WT	28.864	28.888	28.900	28.908	28.917	28.924	28.931	28.940	28.945	28.949	28.953	28.956	28.957						
CP, CAL/(G*IK)	0.4555	0.4317	0.4198	0.4122	0.4027	0.3966	0.3891	0.3810	0.3757	0.3723	0.3682	0.3657	0.3639						
GAMMA (S)	1.1987	1.2070	1.2115	1.2145	1.2185	1.2211	1.2246	1.2284	1.2311	1.2328	1.2349	1.2362	1.2372						
SON VEL./M/SEC	866.4	871.2	873.7	875.4	877.6	879.0	880.8	882.9	884.3	885.1	886.2	886.9	887.4						

MOLE FRACTIONS

AR	0.00878	0.00879	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881	0.00881
CO	0.00450	0.00350	0.00300	0.00268	0.00227	0.00261	0.00169	0.00136	0.00113	0.00099	0.00082	0.00072	0.00065						
CO2	0.10936	0.11045	0.11101	0.11136	0.11180	0.11208	0.11243	0.11280	0.11305	0.11320	0.11339	0.11350	0.11358						
H	6.00020	0.00013	0.00010	0.00008	0.00007	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001						
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001						
H2	0.00084	0.00065	0.00055	0.00049	0.00041	0.00037	0.00031	0.00025	0.00020	0.00018	0.00015	0.00013	0.00012						
H2O	0.10564	0.10616	0.10643	0.10661	0.10684	0.10698	0.10717	0.10738	0.10753	0.10762	0.10774	0.10781	0.10787						
N2	0.00450	0.00458	0.00462	0.00464	0.00468	0.00470	0.00472	0.00475	0.00477	0.00479	0.00480	0.00481	0.00482						
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.73329	0.73385	0.73413	0.73432	0.73455	0.73469	0.73487	0.73507	0.73520	0.73528	0.73538	0.73544	0.73549						
O	0.00055	0.00041	0.00035	0.00031	0.00026	0.00023	0.00019	0.00015	0.00012	0.00011	0.00009	0.00008	0.00007						
OH	0.00339	0.00298	0.00275	0.00260	0.00239	0.00225	0.00206	0.00184	0.00158	0.00157	0.00143	0.00134	0.00127						
O2	0.02895	0.02849	0.02826	0.02812	0.02794	0.02783	0.02770	0.02756	0.02747	0.02742	0.02736	0.02732	0.02730						

CASE=	2	O/F=	16.2822	F/A=	0.06142	PERCENT FUEL=	5.7863	PHI=	0.9000										
P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000						
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8						
T, DEG K	2227.7	2243.2	2251.9	2256.7	2263.6	2268.0	2273.8	2280.1	2284.4	2287.2	2290.6	2292.8	2294.3						
T, DEG F	3550.1	3578.1	3592.7	3603.3	3614.7	3622.8	3633.1	3644.4	3652.2	3657.2	3663.4	3667.3	3670.0						
RHO, G/CC	7.8773-5	1.5664-4	2.3425-4	3.1172-4	4.6640-4	6.2085-4	9.2932-4	1.5453-3	2.3143-3	3.0827-3	4.7182-3	6.1528-3	7.6868-3						
M, MOL WT	29.799	28.832	28.850	28.861	28.876	28.886	28.898	28.912	28.921	28.927	28.935	28.939	28.943						
CP, CAL/(G*IK)	0.5102	0.4795	0.4635	0.4530	0.4395	0.4307	0.4194	0.4070	0.3984	0.3930	0.3863	0.3820	0.3791						
GAMMA (S)	1.1834	1.1916	1.1964	1.1997	1.2043	1.2074	1.2117	1.2166	1.2202	1.2226	1.2257	1.2271	1.2291						
SON VEL./M/SEC	872.4	878.0	881.1	883.1	885.9	887.8	890.3	893.2	895.2	896.5	898.2	899.3	900.0						

MOLE FRACTIONS

AR	0.00873	0.00874	0.00875	0.00875	0.00876	0.00876	0.00876	0.00877	0.00877	0.00877	0.00877	0.00877	0.00878	0.00878	0.00878	0.00878	0.00878	0.00878	0.00878
CO	0.00787	0.00637	0.00559	0.00537	0.00439	0.00395	0.00339	0.00277	0.00235	0.00208	0.00175	0.00154	0.00140						
CO2	0.11202	0.11365	0.11451	0.11508	0.11581	0.11627	0.11691	0.11758	0.11805	0.11830	0.11830	0.11893	0.11908						
H	0.00035	0.00024	0.00019	0.00016	0.00013	0.00011	0.00008	0.00006	0.00005	0.00004	0.00003	0.00002	0.00002						
H2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001						
H2	0.06146	0.06116	0.06101	0.06091	0.06078	0.06070	0.06060	0.06048	0.06041	0.06036	0.06030	0.06027	0.06024						
H2O	0.11049	0.11111	0.11148	0.11172	0.11204	0.11225	0.11252	0.11283	0.11304	0.11318	0.11335	0.11347	0.11355						
N2	0.00430	0.00437	0.00441	0.00443	0.00446	0.00448	0.00450	0.00452	0.00454	0.00455	0.00457	0.00458	0.00458						
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.72935	0.73017	0.73060	0.73088	0.73124	0.73148	0.73178	0.73211	0.73234	0.73249	0.73267	0.73278	0.73286						
O	0.00065	0.00050	0.00042	0.00038	0.00032	0.00028	0.00024	0.00019	0.00016	0.00014	0.00011	0.00010	0.00009						
OH	0.00398	0.00353	0.00328	0.00311	0.00288	0.00272	0.00251	0.00225	0.00207	0.00194	0.00177	0.00166	0.00158						
O2	0.02090	0.02015	0.01976	0.01951	0.01918	0.01897	0.01871	0.01842	0.01822	0.01810	0.01795	0.01786	0.01780						

CASE= 5 O/F= 17.2400 F/A= 0.05800 PERCENT FUEL= 5.4825 PHI= 0.8500

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2436.0	2465.0	2481.1	2492.0	2506.7	2516.7	2530.0	2545.4	2556.6	2564.1	2573.7	2580.0	2584.6
T, DEG F	3925.0	3977.4	4006.3	4026.0	4052.4	4070.3	4094.2	4122.0	4142.2	4155.6	4173.0	4184.3	4192.6
RHO, G/CC	7.1347-5	1.4133-4	2.1088-4	2.8017-4	4.1826-4	5.5590-4	8.3032-4	1.3771-3	2.0583-3	2.7380-3	4.0946-3	5.4488-3	6.8012-3
M, MOL WT	28.523	28.587	28.622	28.646	28.678	28.700	28.729	28.763	28.788	28.804	28.825	28.839	28.849
CP, CAL/(G)(K)	0.6756	0.6279	0.6021	0.5848	0.5616	0.5461	0.5255	0.5017	0.4845	0.4731	0.4583	0.4486	0.4416
GAMMA (S)	1.1566	1.1634	1.1676	1.1706	1.1749	1.1779	1.1823	1.1879	1.1923	1.1953	1.1996	1.2025	1.2047
SON VEL, M/SEC	906.2	913.3	917.3	920.2	924.0	926.7	930.4	934.9	938.3	940.6	943.7	945.8	947.3

MOLE FRACTIONS

AR	0.00868	0.00870	0.00871	0.00871	0.00872	0.00873	0.00874	0.00875	0.00876	0.00876	0.00877	0.00877	0.00878
CO	0.01875	0.01631	0.01492	0.01296	0.01263	0.01173	0.01050	0.00905	0.00798	0.00727	0.00634	0.00573	0.00529
CO2	0.09377	0.09645	0.09798	0.09904	0.10049	0.10149	0.10283	0.10441	0.10558	0.10635	0.10737	0.10803	0.10851
H	0.00152	0.00113	0.00094	0.00082	0.00068	0.00059	0.00048	0.00036	0.00029	0.00025	0.00020	0.00016	0.00014
H02	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
H2	0.00331	0.00280	0.00252	0.00233	0.00208	0.00191	0.00169	0.00143	0.00125	0.00113	0.00098	0.00088	0.00081
H2O	0.09847	0.09977	0.10048	0.10097	0.10162	0.10207	0.10266	0.10335	0.10386	0.10420	0.10464	0.10494	0.10515
NO	0.00817	0.00845	0.00861	0.00871	0.00885	0.00894	0.00906	0.00919	0.00928	0.00934	0.00942	0.00947	0.00951
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002
N2	0.72724	0.72422	0.72364	0.72560	0.72636	0.72687	0.72755	0.72835	0.72893	0.72931	0.72981	0.73014	0.73037
O	0.00268	0.00216	0.00189	0.00171	0.00149	0.00134	0.00116	0.00095	0.00081	0.00073	0.00062	0.00055	0.00050
OH	0.00890	0.00821	0.00779	0.00749	0.00707	0.00678	0.00637	0.00586	0.00546	0.00519	0.00482	0.00456	0.00437
O2	0.03301	0.03179	0.03110	0.03063	0.02999	0.02955	0.02896	0.02827	0.02777	0.02744	0.02702	0.02674	0.02654

CASE= 5 O/F= 16.2822 F/A= 0.06142 PERCENT FUEL= 5.7863 PHI= 0.9000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2464.5	2496.8	2514.8	2527.3	2544.2	2555.7	2571.4	2589.9	2603.7	2613.0	2625.3	2633.4	2639.4
T, DEG F	3976.4	4034.5	4067.0	4089.4	4119.8	4140.6	4168.8	4202.2	4227.0	4243.6	4265.8	4280.4	4291.3
RHO, G/CC	7.0240-5	1.3901-4	2.0730-4	2.7531-4	4.1075-4	5.4567-4	8.1449-4	1.3497-3	2.0159-3	2.6802-3	4.0053-3	5.3271-3	6.6468-3
M, MOL WT	28.409	28.480	28.519	28.546	28.583	28.609	28.643	28.684	28.714	28.734	28.761	28.778	28.792
CP, CAL/(G)(K)	0.7282	0.6784	0.6513	0.6330	0.6085	0.5919	0.5697	0.5437	0.5244	0.5116	0.4945	0.4832	0.4749
GAMMA (S)	1.1509	1.1570	1.1607	1.1633	1.1670	1.1700	1.1739	1.1790	1.1831	1.1860	1.1901	1.1930	1.1952
SON VEL, M/SEC	911.1	918.3	922.5	925.4	929.4	932.2	936.1	940.8	944.4	946.9	950.4	952.7	954.5

MOLE FRACTIONS

AR	0.00861	0.00864	0.00865	0.00866	0.00867	0.00868	0.00869	0.00870	0.00871	0.00871	0.00872	0.00873	0.00873
CO	0.02443	0.02177	0.02022	0.01913	0.01761	0.01655	0.01509	0.01332	0.01198	0.01108	0.00986	0.00904	0.00843
CO2	0.09383	0.09678	0.09850	0.09971	0.10138	0.10254	0.10414	0.10608	0.10754	0.10854	0.10987	0.11076	0.11142
H	0.00201	0.00152	0.00129	0.00114	0.00095	0.00083	0.00069	0.00053	0.00044	0.00037	0.00030	0.00026	0.00023
H02	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2	0.00442	0.00382	0.00348	0.00326	0.00295	0.00274	0.00246	0.00213	0.00189	0.00173	0.00152	0.00139	0.00129
H2O	0.10233	0.10381	0.10463	0.10519	0.10595	0.10647	0.10716	0.10799	0.10860	0.10910	0.10956	0.10992	0.11019
NO	0.00770	0.00795	0.00808	0.00816	0.00826	0.00833	0.00842	0.00851	0.00857	0.00860	0.00865	0.00867	0.00869
NO2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71775	0.71942	0.72036	0.72101	0.72190	0.72251	0.72333	0.72432	0.72505	0.72555	0.72620	0.72664	0.72697
O	0.00279	0.00225	0.00198	0.00180	0.00157	0.00142	0.00123	0.00101	0.00087	0.00078	0.00066	0.00059	0.00053
OH	0.00944	0.00874	0.00832	0.00802	0.00759	0.00729	0.00687	0.00634	0.00593	0.00565	0.00526	0.00499	0.00479
O2	0.02667	0.02529	0.02449	0.02394	0.02317	0.02264	0.02191	0.02105	0.02040	0.01996	0.01937	0.01899	0.01870

CASE= 6 O/F= 8.1411 F/A= 0.12283 PERCENT FUEL= 10.9396 PHI= 1.8000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2252.6	2258.9	2261.8	2263.6	2265.7	2267.1	2268.6	2270.3	2271.3	2271.9	2272.7	2273.1	2273.4
T, DEG F	3595.0	3606.3	3611.5	3614.8	3618.6	3621.0	3623.9	3626.8	3628.6	3629.7	3631.1	3631.9	3632.4
RHO, G/CC	6.8102-5	1.3590-4	2.0363-4	2.7133-4	4.0668-4	5.4198-4	8.1252-4	1.3534-3	2.0294-3	2.7052-3	4.0568-3	5.4082-3	6.7595-3
M, MOL WT	25.176	25.189	25.195	25.193	25.203	25.206	25.209	25.213	25.215	25.216	25.218	25.219	25.219
CP, CAL/(G)(K)	0.4168	0.4034	0.3972	0.3934	0.3889	0.3861	0.3828	0.3795	0.3774	0.3761	0.3746	0.3736	0.3730
GAMMA (S)	1.2465	1.2529	1.2561	1.2581	1.2605	1.2620	1.2638	1.2657	1.2669	1.2677	1.2686	1.2691	1.2695
SON VEL./M/SEC	963.0	966.5	968.3	969.3	970.6	971.4	972.4	973.4	974.1	974.5	975.0	975.2	975.4

MOLE FRACTIONS

AR	0.00722	0.00722	0.00722	0.00722	0.00722	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723	0.00723
CO	0.16625	0.16643	0.16651	0.16656	0.16663	0.16666	0.16671	0.16676	0.16678	0.16680	0.16682	0.16684	0.16684
CO2	0.03166	0.03158	0.03154	0.03152	0.03150	0.03148	0.03146	0.03144	0.03143	0.03142	0.03141	0.03141	0.03140
H	0.00321	0.00235	0.00195	0.00171	0.00141	0.00123	0.00101	0.00079	0.00065	0.00057	0.00046	0.00040	0.00036
H2	0.09196	0.09225	0.09238	0.09246	0.09250	0.09262	0.09270	0.09277	0.09282	0.09285	0.09288	0.09289	0.09290
H2O	0.09464	0.09494	0.09508	0.09517	0.09527	0.09534	0.09541	0.09549	0.09554	0.09557	0.09561	0.09563	0.09564
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00002
NO	0.00007	0.00005	0.00004	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.60448	0.60480	0.60494	0.60503	0.60514	0.60521	0.60529	0.60537	0.60543	0.60546	0.60550	0.60552	0.60553
O	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00051	0.00038	0.00031	0.00028	0.00023	0.00020	0.00016	0.00013	0.00011	0.00009	0.00008	0.00007	0.00006
O2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE= 6 O/F= 7.3270 F/A= 0.13648 PERCENT FUEL= 12.0041 PHI= 2.0000

P, ATM	0.5000	1.0000	1.5000	2.0000	3.0000	4.0000	6.0000	10.000	15.000	20.000	30.000	40.000	50.000
P, PSIA	7.3	14.7	22.0	29.4	44.1	58.8	88.2	147.0	220.4	293.9	440.9	587.8	734.8
T, DEG K	2118.8	2121.9	2123.4	2124.3	2125.3	2126.0	2126.7	2127.5	2128.0	2128.3	2128.7	2128.9	2129.0
T, DEG F	3354.1	3359.8	3362.4	3364.0	3365.9	3367.0	3368.4	3369.8	3370.7	3371.2	3371.9	3372.3	3372.5
RHO, G/CC	7.0333-5	1.4049-4	2.1062-4	2.8073-4	4.2092-4	5.6109-4	8.4138-4	1.4019-3	2.1024-3	2.8029-3	4.2038-3	5.6046-3	7.0054-3
M, MOL WT	24.456	24.462	24.465	24.467	24.469	24.470	24.472	24.474	24.475	24.475	24.476	24.477	24.477
CP, CAL/(G)(K)	0.3975	0.3901	0.3867	0.3823	0.3808	0.3791	0.3773	0.3753	0.3745	0.3735	0.3747	0.3742	0.3739
GAMMA (S)	1.2642	1.2684	1.2704	1.2716	1.2730	1.2739	1.2750	1.2761	1.2768	1.2772	1.2777	1.2780	1.2782
SON VEL./M/SEC	954.3	956.5	957.5	958.1	958.8	959.3	959.8	960.4	960.7	960.9	961.2	961.4	961.5

MOLE FRACTIONS

AR	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693	0.00693
CO	0.18742	0.18752	0.18756	0.18759	0.18762	0.18764	0.18767	0.18771	0.18771	0.18771	0.18773	0.18773	0.18774
CO2	0.02360	0.02355	0.02353	0.02352	0.02351	0.02350	0.02349	0.02348	0.02347	0.02347	0.02346	0.02346	0.02346
H	0.00172	0.00124	0.00103	0.00089	0.00075	0.00064	0.00052	0.00041	0.00033	0.00029	0.00024	0.00021	0.00018
H2	0.12307	0.12327	0.12336	0.12342	0.12348	0.12352	0.12357	0.12361	0.12364	0.12366	0.12367	0.12368	0.12368
H2O	0.07696	0.07707	0.07712	0.07715	0.07719	0.07721	0.07724	0.07726	0.07728	0.07729	0.07730	0.07731	0.07731
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00002	0.00002	0.00003
NO	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.58015	0.58031	0.58038	0.58042	0.58047	0.58050	0.58054	0.58057	0.58060	0.58061	0.58063	0.58064	0.58065
OH	0.00014	0.00010	0.00008	0.00007	0.00006	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001

AR	1.000000	0.000000	0.000000	0.000000	0.000000	0.01285800	0.00	G	0.000	0	0.000000
C	1.000000	0.000000	0.000000	0.000000	0.000000	0.00045600	0.00	G	0.000	0	0.000000
N	2.000000	0.000000	0.000000	0.000000	0.000000	0.75525296	0.00	G	0.000	0	0.000000
O	2.000000	0.000000	0.000000	0.000000	0.000000	0.23143297	0.00	G	0.000	0	0.000000

CASE=	0	O/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000				
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3690.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	6.2028-5	6.4658-5	6.7398-5	7.0280-5	7.3338-5	7.6615-5	8.0154-5	8.4006-5	8.8226-5	9.2881-5	9.8046-5	1.0382-4	1.1031-4
M, MOL WT	28.503	28.650	28.758	28.835	28.886	28.919	28.940	28.952	28.958	28.962	28.963	28.964	28.964
CP, CAL/(G*IN)	0.5935	0.5257	0.4696	0.4249	0.3906	0.3648	0.3459	0.3321	0.3220	0.3143	0.3082	0.3030	0.2984
GAMMA (S)	1.1796	1.1905	1.2031	1.2165	1.2301	1.2430	1.2545	1.2644	1.2729	1.2802	1.2868	1.2928	1.2987
SON VEL, M/SEC	981.6	965.8	951.0	936.5	921.8	906.6	890.4	873.2	855.0	835.7	815.4	794.3	772.3

MOLE FRACTIONS

AR	0.00917	0.00922	0.00926	0.00928	0.00930	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00010	0.00007	0.00005	0.00003	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00020	0.00022	0.00025	0.00027	0.00028	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03404	0.03028	0.02649	0.02277	0.01923	0.01594	0.01295	0.01029	0.00798	0.00601	0.00438	0.00308	0.00207
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.75142	0.75728	0.76269	0.76600	0.76916	0.77170	0.77375	0.77540	0.77673	0.77781	0.77867	0.77934	0.77985
O	0.03178	0.02162	0.01418	0.00894	0.00541	0.00312	0.00171	0.00088	0.00043	0.00019	0.00008	0.00003	0.00001
O2	0.17328	0.18129	0.18768	0.19270	0.19660	0.19962	0.20197	0.20380	0.20523	0.20636	0.20724	0.20792	0.20844

CASE=	0	O/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000				
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	1.1766-4	1.2606-4	1.3576-4	1.4707-4	1.6045-4	1.7649-4	1.9610-4	2.2061-4	2.5213-4	2.9415-4	3.5298-4	4.4122-4	5.8830-4
M, MOL WT	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964
CP, CAL/(G*IN)	0.2940	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402
GAMMA (S)	1.3044	1.3102	1.3161	1.3223	1.3287	1.3357	1.3440	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.3	557.5	523.6	486.8	446.1	400.3	347.2

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.78023	0.78050	0.78068	0.78078	0.78084	0.78087	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089
O2	0.20882	0.20909	0.20927	0.20938	0.20944	0.20947	0.20948	0.20948	0.20949	0.20949	0.20949	0.20949	0.20949

ADD H2O(L)

CASE=	0	0/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931						
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	80.3
RHO, G/CC	4.7072-4	5.0434-4	5.4314-4	5.8840-4	6.4190-4	7.0609-4	7.8454-4	8.8261-4	1.0087-3	1.1768-3	1.4122-3	1.7652-3	2.4064-3	2.4064-3
M, MOL WT	28.969	28.969	28.970	28.970	28.970	28.970	28.969	28.969	28.969	28.970	28.970	28.970	28.970	29.619
CP, CAL/(G)(K)	0.3045	0.3000	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.2419	0.6189
GAMMA (SI)	1.2909	1.2965	1.3023	1.3083	1.3147	1.3218	1.3302	1.3399	1.3508	1.3623	1.3737	1.3837	1.3928	1.2028
SON VEL, M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	318.3	318.3

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.03885	0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572
O	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14488	0.14503	0.14512	0.14517	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

CASE=	0	0/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931						
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2420.3
RHO, G/CC	3.7286-4	3.8835-4	4.0459-4	4.2176-4	4.4005-4	4.5968-4	4.8091-4	5.0404-4	5.2938-4	5.5733-4	5.8835-4	6.2299-4	6.6154-4	6.6154-4
M, MOL WT	28.556	28.680	28.773	28.840	28.887	28.919	28.939	28.952	28.960	28.964	28.967	28.968	28.969	28.969
CP, CAL/(G)(K)	0.5688	0.5148	0.4682	0.4298	0.3993	0.3758	0.3581	0.3447	0.3344	0.3264	0.3198	0.3142	0.3091	0.3091
GAMMA (SI)	1.1799	1.1891	1.1998	1.2113	1.2229	1.2339	1.2440	1.2528	1.2607	1.2676	1.2739	1.2798	1.2854	1.2854
SON VEL, M/SEC	980.8	964.7	949.4	934.3	919.1	903.3	886.7	869.2	850.8	831.5	811.3	790.2	768.3	768.3

MOLE FRACTIONS

AR	0.00901	0.00905	0.00908	0.00910	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00795	0.00549	0.00359	0.00222	0.00130	0.00072	0.00037	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000
CO2	0.03252	0.03516	0.03719	0.03866	0.03964	0.04027	0.04065	0.04086	0.04097	0.04102	0.04105	0.04105	0.04105	0.04105
H	0.00154	0.00090	0.00050	0.00026	0.00013	0.00006	0.00003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2O	0.00108	0.00076	0.00051	0.00033	0.00020	0.00012	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.03023	0.00326	0.03393	0.03526	0.03630	0.03709	0.03768	0.03810	0.03839	0.03858	0.03871	0.03878	0.03883	0.03883
NO	0.02870	0.02527	0.02195	0.01879	0.01583	0.01311	0.01065	0.00846	0.00656	0.00495	0.00361	0.00254	0.00170	0.00170
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.74042	0.74542	0.74954	0.75290	0.75561	0.75780	0.75958	0.76101	0.76217	0.76310	0.76383	0.76441	0.76485	0.76485
O	0.01102	0.00742	0.00484	0.00304	0.00183	0.00106	0.00058	0.00030	0.00014	0.00006	0.00003	0.00001	0.00000	0.00000
O	0.01245	0.01000	0.00781	0.00593	0.00436	0.00311	0.00213	0.00141	0.00089	0.00053	0.00030	0.00016	0.00008	0.00008
O2	0.12503	0.12823	0.13103	0.13348	0.13563	0.13751	0.13912	0.14048	0.14162	0.14255	0.14330	0.14388	0.14433	0.14433

ADD H2O(L)

	CASE=	0	O/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0							
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3							
RHO, G/CC	9.4152-4	1.0088-3	1.0864-3	1.1769-3	1.2839-3	1.4123-3	1.5692-3	1.76F4-3	2.0176-3	2.3538-3	2.8246-3	3.5307-3	4.9528-3							
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	30.481
CP, CAL/(G)(K)	0.3093	0.3048	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.2440							
GAMMA (S)	1.2851	1.2905	1.2961	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.2324							
SON VEL, M/SEC	743.8	720.0	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	317.6							

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04950
H2O	0.05772	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.00824
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11364	0.11392	0.11397	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

	CASE=	0	O/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0							
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3							
RHO, G/CC	7.4669-4	7.7743-4	8.0973-4	8.4392-4	8.8039-4	9.1958-4	9.6200-4	1.0082-3	1.0589-3	1.1148-3	1.1768-3	1.2461-3	1.3240-3							
M, MOL WT	28.593	28.707	28.792	28.854	28.897	28.925	28.944	28.956	28.963	28.967	28.970	28.971	28.972							
CP, CAL/(G)(K)	0.5568	0.5062	0.4625	0.4266	0.3982	0.3764	0.3599	0.3475	0.3380	0.3304	0.3242	0.3188	0.3139							
GAMMA (S)	1.1807	1.1898	1.2002	1.2113	1.2223	1.2325	1.2417	1.2499	1.2570	1.2633	1.2691	1.2745	1.2798							
SON VEL, M/SEC	980.5	964.6	949.3	934.1	918.7	902.7	885.9	868.1	849.5	830.0	809.7	788.6	766.6							

MOLE FRACTIONS

AR	0.00894	0.00897	0.00900	0.00902	0.00903	0.00904	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.00977	0.00668	0.00433	0.00266	0.00155	0.00086	0.00044	0.00022	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.05029	0.05362	0.05615	0.05794	0.05915	0.05990	0.06035	0.06061	0.06074	0.06081	0.06084	0.06085	0.06085	0.06085	0.06085	0.06085	0.06085	0.06085	0.06085	0.06085
H	0.00123	0.00071	0.00039	0.00021	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00138	0.00096	0.00064	0.00041	0.00025	0.00014	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.04871	0.05091	0.05269	0.05409	0.05516	0.05597	0.05656	0.05698	0.05727	0.05746	0.05758	0.05766	0.05770							
NO	0.02546	0.02234	0.01936	0.01655	0.01394	0.01154	0.00937	0.00745	0.00578	0.00436	0.00318	0.00224	0.00150							
NO2	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73568	0.74023	0.74395	0.74697	0.74946	0.75135	0.75292	0.75419	0.75521	0.75603	0.75669	0.75719	0.75758							
O	0.00694	0.00466	0.00303	0.00190	0.00115	0.00066	0.00036	0.00019	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
OH	0.01253	0.00995	0.00770	0.00581	0.00425	0.00302	0.00207	0.00136	0.00086	0.00052	0.00029	0.00015	0.00008							
O2	0.09902	0.10092	0.10272	0.10441	0.10600	0.10745	0.10875	0.10989	0.11086	0.11166	0.11232	0.11283	0.11322							

ADD H2O(L)

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862					
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	2.3540-3	2.5222-3	2.7162-3	2.9425-3	3.2100-3	3.5310-3	3.9234-3	4.4138-3	5.0443-3	5.8850-3	7.0620-3	8.8276-3	1.2698-2
M, MOL WT	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	31.257
CP, CAL/(G)(K)	0.3139	0.3094	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.3418
GAMMA (S)	1.2797	1.2848	1.2902	1.2961	1.3024	1.3095	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.2595
SON VEL, M/SEC	742.2	718.4	693.8	668.1	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	317.0

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.00321
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75071	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08297	0.08314	0.08325	0.08332	0.08336	0.08338	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862					
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	1.8711-3	1.9468-3	2.0267-3	2.1115-3	2.2022-3	2.2998-3	2.4056-3	2.5210-3	2.6476-3	2.7873-3	2.9423-3	3.1155-3	3.3103-3
M, MOL WT	28.660	28.755	28.826	28.877	28.913	28.936	28.952	28.961	28.967	28.971	28.972	28.974	28.974
CP, CAL/(G)(K)	0.5282	0.4843	0.4467	0.4160	0.3918	0.3733	0.3593	0.3486	0.3404	0.3337	0.3280	0.3230	0.3183
GAMMA (S)	1.1951	1.1941	1.2040	1.2143	1.2241	1.2331	1.2411	1.2481	1.2543	1.2598	1.2649	1.2699	1.2747
SON VEL, M/SEC	981.1	965.5	950.2	934.9	919.1	902.7	885.5	867.4	848.5	828.8	808.3	787.1	765.0

MOLE FRACTIONS

AR	0.00887	0.00890	0.00892	0.00894	0.00895	0.00896	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897
CO	0.00995	0.00672	0.00432	0.00264	0.00153	0.00084	0.00044	0.00021	0.00010	0.00004	0.00001	0.00000	0.00000
CO2	0.06945	0.07295	0.07554	0.07736	0.07857	0.07933	0.07977	0.08002	0.08016	0.08022	0.08025	0.08027	0.08027
H	0.00079	0.00046	0.00025	0.00013	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00142	0.00097	0.00064	0.00041	0.00025	0.00014	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
H2O	0.06813	0.07016	0.07178	0.07304	0.07400	0.07471	0.07523	0.07559	0.07585	0.07601	0.07612	0.07618	0.07622
NO	0.02178	0.01904	0.01646	0.01405	0.01183	0.00979	0.00796	0.00633	0.00491	0.00371	0.00271	0.00190	0.00128
NO2	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001
N2	0.73205	0.73590	0.73903	0.74156	0.74359	0.74522	0.74654	0.74760	0.74846	0.74916	0.74971	0.75014	0.75047
O	0.00376	0.00252	0.00163	0.00102	0.00062	0.00036	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000
OH	0.01092	0.00859	0.00660	0.00495	0.00361	0.00256	0.00175	0.00115	0.00073	0.00044	0.00025	0.00013	0.00006
O2	0.07281	0.07374	0.07476	0.07585	0.07695	0.07803	0.07904	0.07995	0.08074	0.08141	0.08196	0.08239	0.08272

ADD H2O(L)

	CASE= 0	O/F= 20.0000	F/A= 0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	4.7084-3	5.0447-3	5.4328-3	5.8855-3	6.4206-3	7.0626-3	7.8474-3	8.8283-3	1.0090-2	1.1771-2	1.4125-2	1.7657-2	2.5952-2
M, MOL HT	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	31.943
CP, CAL/(G)(K)	0.3183	0.3139	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.3154
GAMMA (S)	1.2747	1.2796	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.2623
SON VEL,M/SEC	740.7	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	314.0

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00998	0.00888	0.00888	0.00898	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.09284
H2O	0.09440	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.00157
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74370	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05301	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

	CASE= 0	O/F= 20.0000	F/A= 0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327					
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	3.7453-3	3.8961-3	4.0554-3	4.2246-3	4.4056-3	4.6006-3	4.8121-3	5.0427-3	5.2958-3	5.5751-3	5.8852-3	6.2316-3	6.6212-3
M, MOL HT	28.684	28.773	28.840	28.888	28.921	28.943	28.957	28.965	28.970	28.973	28.975	28.976	28.977
CP, CAL/(G)(K)	0.5202	0.4788	0.4430	0.4138	0.3909	0.3735	0.3604	0.3506	0.3430	0.3369	0.3317	0.3270	0.3226
GAMMA (S)	1.1860	1.1949	1.2046	1.2144	1.2238	1.2323	1.2397	1.2460	1.2515	1.2565	1.2611	1.2656	1.2701
SON VEL,M/SEC	981.1	965.5	950.2	934.8	918.9	902.3	884.9	866.7	847.6	827.7	807.1	785.7	763.6

MOLE FRACTIONS

AR	0.00879	0.00882	0.00884	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.01100	0.00743	0.00477	0.00292	0.00169	0.00093	0.00048	0.00023	0.00010	0.00004	0.00002	0.00001	0.00000
CO2	0.08731	0.09120	0.09408	0.09610	0.09744	0.09828	0.09877	0.09905	0.09920	0.09927	0.09930	0.09931	0.09932
H	0.00059	0.00034	0.00019	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00160	0.00109	0.00072	0.00045	0.00027	0.00016	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
H2O	0.08690	0.08884	0.09037	0.09154	0.09241	0.09306	0.09352	0.09385	0.09407	0.09421	0.09430	0.09436	0.09439
NO	0.01746	0.01518	0.01307	0.01114	0.00936	0.00775	0.00630	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102
NO2	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001
N2	0.72775	0.73120	0.73397	0.73616	0.73789	0.73926	0.74035	0.74121	0.74191	0.74246	0.74290	0.74325	0.74351
O	0.00214	0.00142	0.00092	0.00058	0.00035	0.00020	0.00011	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000
OH	0.00930	0.00727	0.00556	0.00416	0.00303	0.00214	0.00146	0.00096	0.00061	0.00036	0.00021	0.00011	0.00005
O2	0.04708	0.04716	0.04746	0.04796	0.04860	0.04930	0.05000	0.05067	0.05127	0.05179	0.05222	0.05256	0.05282

ADD H2O(L)

	CASE= 0	O/F= 16.6667	F/A= 0.06000	PERCENT FUEL= 5.6604				PHI= 0.8792						
P, ATM	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	9.4176-3	1.0090-2	1.0866-2	1.1772-2	1.2842-2	1.4126-2	1.5696-2	1.7658-2	2.0181-2	2.3544-2	2.8253-2	3.7447-2	5.2995-2	
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)	0.3224	0.3182	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2561	0.2485	0.2409
GAMMA (S)	1.2702	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.2027	1.2564	
SON VEL, M/SEC	739.3	715.6	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	360.8	310.0	

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00990	0.00880	0.00860	0.00890	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11802	0.11802	0.11662	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05691	0.11147
H2O	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.05533	0.00077
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02380	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

	CASE= 0	O/F= 16.6667	F/A= 0.06000	PERCENT FUEL= 5.6604				PHI= 0.8792						
P, ATM	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3
RHO, G/CC	6.2369-3	6.4896-3	6.7564-3	7.0396-3	7.3423-3	7.6679-3	8.0207-3	8.4053-3	8.8272-3	9.2927-3	9.8095-3	1.0387-2	1.1036-2	
M, MOL WT	28.660	28.756	28.829	28.883	28.919	28.943	28.959	28.968	28.973	28.976	28.978	28.979	28.979	28.979
CP, CAL/(G)(K)	0.5323	0.4913	0.4542	0.4225	0.3971	0.3777	0.3636	0.3533	0.3457	0.3399	0.3350	0.3307	0.3266	0.3226
GAMMA (S)	1.1832	1.1914	1.2008	1.2109	1.2208	1.2297	1.2374	1.2437	1.2490	1.2536	1.2578	1.2618	1.2659	1.2700
SON VEL, M/SEC	980.4	964.4	948.9	933.5	917.8	901.4	884.1	865.8	846.7	826.7	806.0	784.5	762.3	

MOLE FRACTIONS

AR	0.00870	0.00873	0.00875	0.00877	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.01422	0.00983	0.00644	0.00399	0.00234	0.00129	0.00067	0.00032	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000
CO2	0.10249	0.10728	0.11096	0.11363	0.11543	0.11658	0.11726	0.11765	0.11785	0.11794	0.11799	0.11801	0.11801	0.11801
H	0.00053	0.00031	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00212	0.00148	0.00099	0.00063	0.00038	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000
H2O	0.10484	0.10683	0.10838	0.10955	0.11041	0.11103	0.11146	0.11175	0.11195	0.11207	0.11215	0.11219	0.11222	0.11227
NO	0.01224	0.01041	0.00881	0.00742	0.00619	0.00511	0.00415	0.00331	0.00257	0.00195	0.00142	0.00100	0.00066	0.00036
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72281	0.72617	0.72884	0.73089	0.73244	0.73360	0.73447	0.73512	0.73562	0.73601	0.73631	0.73655	0.73672	0.73679
O	0.00117	0.00076	0.00048	0.00030	0.00018	0.00010	0.00006	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
OH	0.00754	0.00592	0.00441	0.00327	0.00237	0.00167	0.00114	0.00075	0.00048	0.00029	0.00016	0.00009	0.00004	0.00002
O2	0.02330	0.02235	0.02173	0.02143	0.02140	0.02157	0.02185	0.02219	0.02254	0.02285	0.02313	0.02335	0.02352	0.02359

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465										
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0		
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	3.5301-4	3.7823-4	4.0732-4	4.4126-4	4.8138-4	5.2952-4	5.8835-4	6.6190-4	7.5645-4	8.8253-4	1.0590-3	1.3238-3	1.7651-3		
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G)(K)	0.2994	0.2950	0.2907	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2422		
GAMMA (S)	1.2973	1.3031	1.3090	1.3151	1.3215	1.3285	1.3365	1.3466	1.3574	1.3688	1.3799	1.3893	1.3952		
SON VEL, M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	346.6		

MCLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O	0.01961	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17642	0.17667	0.17683	0.17693	0.17699	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465										
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0		
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3		
RHO, G/CC	2.4880-4	2.5906-4	2.6984-4	2.8124-4	2.9340-4	3.0647-4	3.2061-4	3.3602-4	3.5290-4	3.7153-4	3.9220-4	4.1529-4	4.4126-4		
M, MOL WT	28.582	28.698	28.795	28.847	28.891	28.920	28.939	28.951	28.958	28.962	28.965	28.966	28.967		
CP, CAL/(G)(K)	0.5476	0.4971	0.4539	0.4183	0.3901	0.3682	0.3515	0.3387	0.3289	0.3210	0.3146	0.3090	0.3040		
GAMMA (S)	1.1851	1.1945	1.2053	1.2167	1.2282	1.2391	1.2491	1.2581	1.2660	1.2731	1.2796	1.2857	1.2916		
SON VEL, M/SEC	982.5	966.6	951.4	936.3	921.0	905.2	889.6	871.1	852.6	833.3	813.1	792.1	770.2		

MCLE FRACTIONS

AR	0.00911	0.00915	0.00917	0.00919	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00440	0.00306	0.00200	0.00124	0.00073	0.00040	0.00021	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.01620	0.01763	0.01875	0.01955	0.02010	0.02044	0.02065	0.02077	0.02083	0.02086	0.02087	0.02088	0.02088	0.02088	0.02088
H	0.00122	0.00078	0.00044	0.00023	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H02	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00053	0.00038	0.00027	0.00018	0.00011	0.00006	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01336	0.01473	0.01590	0.01636	0.01763	0.01823	0.01868	0.01901	0.01924	0.01940	0.01950	0.01956	0.01959		
NO	0.03176	0.02802	0.02437	0.02088	0.01760	0.01457	0.01183	0.00940	0.00729	0.00549	0.00401	0.00281	0.00189		
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001		
N2	0.74707	0.75203	0.75618	0.75959	0.76239	0.76469	0.76656	0.76809	0.76934	0.77035	0.77116	0.77179	0.77227		
O	0.01487	0.01004	0.00655	0.00412	0.00248	0.00143	0.00078	0.00040	0.00020	0.00009	0.00004	0.00001	0.00000		
OH	0.00961	0.00786	0.00622	0.00477	0.00354	0.00254	0.00175	0.00116	0.00073	0.00044	0.00025	0.00013	0.00006		
O2	0.15173	0.15628	0.16012	0.16336	0.16607	0.16834	0.17023	0.17179	0.17307	0.17410	0.17493	0.17557	0.17606		

ADD H2O(L)

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396									
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0	0.0
RHO, G/CC	1.4123-3	1.5132-3	1.6296-3	1.7654-3	1.9259-3	2.1184-3	2.3538-3	2.6480-3	3.0263-3	3.5307-3	4.2369-3	5.2961-3	7.4509-3					
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G)(K)	0.3092	0.3047	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.2447					
GAMMA (S)	1.2851	1.2905	1.2961	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.2521					
SON VEL, M/SEC	743.8	720.1	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	319.6					

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05227
H2	0.05772	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.00547
NO	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00095	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11364	0.11392	0.11397	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396									
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0	1100.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3	1520.3
RHO, G/CC	1.2476-3	1.2980-3	1.3512-3	1.4076-3	1.4680-3	1.5331-3	1.6036-3	1.6805-3	1.7649-3	1.8580-3	1.9614-3	2.0768-3	2.2067-3					
M, MOL WT	28.665	28.758	28.827	28.876	28.911	28.934	28.949	28.959	28.964	28.968	28.971	28.972	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G)(K)	0.5188	0.4764	0.4404	0.4109	0.3875	0.3695	0.3556	0.3449	0.3365	0.3296	0.3237	0.3185	0.3137					
GAMMA (S)	1.1879	1.1969	1.2069	1.2170	1.2269	1.2360	1.2442	1.2515	1.2580	1.2639	1.2695	1.2747	1.2799					
SON VEL, M/SEC	982.2	966.6	951.3	936.0	920.2	903.8	886.7	868.7	849.8	830.2	809.8	788.6	766.6					

MOLE FRACTIONS

AR	0.00896	0.00899	0.00901	0.00902	0.00903	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.00727	0.00531	0.00341	0.00208	0.00121	0.00067	0.00034	0.00017	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.05234	0.05510	0.05714	0.05857	0.05952	0.06011	0.06046	0.06066	0.06077	0.06082	0.06084	0.06085	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H	0.00085	0.00049	0.00027	0.00014	0.00007	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00110	0.00075	0.00050	0.00032	0.00019	0.00011	0.00006	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.05000	0.05188	0.05339	0.05459	0.05551	0.05620	0.05671	0.05707	0.05733	0.05750	0.05760	0.05767	0.05771					
NO	0.02552	0.02237	0.01938	0.01656	0.01395	0.01154	0.00938	0.00745	0.00578	0.00436	0.00318	0.00224	0.00150					
NO2	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001					
N2	0.73755	0.74154	0.74484	0.74754	0.74975	0.75156	0.75304	0.75426	0.75525	0.75605	0.75669	0.75720	0.75758					
O	0.00538	0.00361	0.00235	0.00147	0.00089	0.00051	0.00028	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000					
OH	0.01118	0.00884	0.00683	0.00513	0.00375	0.00266	0.00182	0.00120	0.00076	0.00045	0.00026	0.00014	0.00007					
O2	0.09919	0.10106	0.10283	0.10452	0.10609	0.10752	0.10880	0.10992	0.11088	0.11168	0.11232	0.11283	0.11322					

ADD H2O(L)

CASE=	0	0/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462	PHI= 0.5862										
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.600
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	260.3	80.3
RHO, G/CC	3.5310-3	3.7832-3	4.0743-3	4.4138-3	4.8150-3	5.2965-3	5.8850-3	6.6207-3	7.5665-3	8.8276-3	1.0593-2	1.3241-2	1.9068-2	1.3241-2	1.9068-2
M, MOL WT	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	31.294
CP, CAL/(G)(K)	0.3138	0.3094	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.2466	0.2523	0.3192
GAMMA (S)	1.2797	1.2848	1.2902	1.2961	1.3024	1.3094	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.3844	1.3733	1.2710
SON VEL, M/SEC	742.2	718.4	693.8	668.1	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	318.3	397.0	318.3

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.07411
H2O	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.00214
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75071	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08314	0.08325	0.08332	0.08336	0.08337	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

CASE=	0	0/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462	PHI= 0.5862										
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2420.3
RHO, G/CC	2.4978-3	2.5980-3	2.7038-3	2.8164-3	2.9369-3	3.0668-3	3.2078-3	3.3615-3	3.5302-3	3.7164-3	3.9231-3	4.1540-3	4.4137-3	4.1540-3	4.4137-3
M, MOL WT	28.695	28.780	28.843	28.888	28.919	28.940	28.954	28.963	28.968	28.971	28.973	28.974	28.974	28.974	28.974
CP, CAL/(G)(K)	0.5093	0.4695	0.4357	0.4082	0.3866	0.3699	0.3572	0.3474	0.3396	0.3333	0.3278	0.3229	0.3183	0.3229	0.3183
GAMMA (S)	1.1890	1.1979	1.2075	1.2172	1.2264	1.2348	1.2423	1.2489	1.2547	1.2601	1.2651	1.2700	1.2748	1.2651	1.2748
SON VEL, M/SEC	982.2	966.6	951.3	935.9	919.9	903.3	885.9	867.7	848.7	828.9	808.4	787.1	765.1	808.4	765.1

MOLE FRACTIONS

AR	0.00888	0.00891	0.00893	0.00894	0.00895	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.00879	0.00589	0.00377	0.00230	0.00133	0.00073	0.00038	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.07071	0.07384	0.07614	0.07774	0.07879	0.07945	0.07984	0.08006	0.08017	0.08023	0.08026	0.08027	0.08027	0.08027	0.08027
H	0.00064	0.00037	0.00020	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00004	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00125	0.00085	0.00056	0.00035	0.00021	0.00012	0.00007	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.06883	0.07068	0.07215	0.07330	0.07418	0.07483	0.07531	0.07564	0.07588	0.07603	0.07613	0.07619	0.07622	0.07619	0.07622
NO	0.02177	0.01903	0.01646	0.01405	0.01183	0.00979	0.00796	0.00633	0.00491	0.00371	0.00271	0.00190	0.00128	0.00128	0.00128
NO2	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001
N2	0.73297	0.73654	0.73946	0.74184	0.74376	0.74532	0.74660	0.74763	0.74848	0.74916	0.74971	0.75014	0.75047	0.74971	0.75047
O	0.00325	0.00218	0.00141	0.00089	0.00053	0.00031	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
OH	0.01020	0.00802	0.00616	0.00462	0.00337	0.00238	0.00163	0.00107	0.00068	0.00041	0.00023	0.00012	0.00006	0.00012	0.00006
O2	0.07264	0.07363	0.07470	0.07582	0.07695	0.07804	0.07905	0.07996	0.08075	0.08141	0.08196	0.08239	0.08272	0.08196	0.08272

ADD H2O(L)
ADD C(S)

	CASE=	0	O/F=	14.2857	F/A=	0.07000	PERCENT FUEL=	6.5421	PHI=	1.0258									
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	2.3428-4	2.5101-4	2.7032-4	2.9284-4	3.1947-4	3.5141-4	3.9046-4	4.3927-4	5.0205-4	5.8678-4	7.0592-4	8.8293-4	1.3057-3						
M, MOL WT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.837	28.890	28.963	28.980	32.143					
CP, CAL/(G)(K)	0.3262	0.3226	0.3188	0.3146	0.3101	0.3052	0.2994	0.2925	0.2864	0.3011	0.2760	0.2604	0.9838						
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2917	1.2990	1.3082	1.3181	1.3103	1.3362	1.3580	1.1527						
SON VEL, M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.6	549.3	515.9	475.7	437.9	394.8	299.1						

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00869	0.00871	0.00872	0.00868					
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00092	0.00219	0.00250	0.00006					
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00427	0.00321	0.00208	0.00105	0.00024	0.00001	0.00000	0.00000	0.00000					
CO2	0.12840	0.12876	0.12921	0.12978	0.13050	0.13140	0.13247	0.13360	0.13461	0.13477	0.13477	0.13407	0.13386	0.13073					
H2	0.00278	0.00313	0.00359	0.00415	0.00488	0.00578	0.00684	0.00797	0.00889	0.00611	0.00130	0.00010	0.00000	0.00000					
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12224	0.12111	0.12014	0.12134	0.12395	0.12462	0.03110						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00006	0.00001	0.00002	0.00001	0.00001	0.00000	0.00000					
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657					

CASE= 0 O/F= 14.2857 F/A= 0.07000 PERCENT FUEL= 6.5421 PHI= 1.0258

P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	1.7992-4	1.8868-4	1.9778-4	2.0726-4	2.1718-4	2.2764-4	2.3874-4	2.5060-4	2.6341-4	2.7738-4	2.9283-4	3.1007-4	3.2945-4						
M, MOL WT	27.559	27.869	28.130	28.345	28.514	28.642	28.732	28.789	28.819	28.831	28.834	28.835	28.836						
CP, CAL/(G)(K)	0.9257	0.8371	0.7511	0.6693	0.5936	0.5254	0.4650	0.4122	0.3712	0.3482	0.3302	0.3332	0.3296						
GAMMA (S)	1.1427	1.1460	1.1511	1.1585	1.1682	1.1807	1.1962	1.2151	1.2350	1.2492	1.2567	1.2610	1.2644						
SON VEL, M/SEC	982.5	960.8	940.5	921.7	904.2	887.9	872.7	858.4	844.2	827.3	807.6	786.2	763.8						

MOLE FRACTIONS

AR	0.00829	0.00838	0.00846	0.00853	0.00858	0.00862	0.00864	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867					
CO	0.05994	0.04987	0.04014	0.03130	0.02377	0.01776	0.01334	0.01047	0.00896	0.00831	0.00801	0.00779	0.00756						
CO2	0.06973	0.08125	0.09222	0.10236	0.11039	0.11700	0.12184	0.12498	0.12664	0.12734	0.12766	0.12788	0.12812						
H	0.00739	0.00457	0.00272	0.00156	0.00086	0.00046	0.00023	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000						
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2O	0.01238	0.00983	0.00765	0.00586	0.00444	0.00337	0.00262	0.00216	0.00197	0.00198	0.00210	0.00227	0.00250						
H2O	0.09880	0.10616	0.11218	0.11694	0.12057	0.12324	0.12509	0.12624	0.12681	0.12699	0.12694	0.12680	0.12658						
N	0.01114	0.00880	0.00668	0.00484	0.00333	0.00213	0.00124	0.00062	0.00026	0.00009	0.00002	0.00001	0.00000						
N2	0.68883	0.69780	0.70545	0.71177	0.71680	0.72062	0.72334	0.72509	0.72601	0.72639	0.72652	0.72655	0.72656						
O	0.00627	0.00378	0.00215	0.00114	0.00056	0.00025	0.00010	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000						
OH	0.01697	0.01294	0.00946	0.00661	0.00439	0.00275	0.00159	0.00084	0.00039	0.00015	0.00005	0.00002	0.00000						
O2	0.02025	0.01661	0.01289	0.00938	0.00631	0.00381	0.00197	0.00079	0.00023	0.00005	0.00001	0.00000	0.00000						

ADD C(S)
ADD H2O(L)

	CASE= 0	O/F= 12.5000	F/A= 0.08000	PERCENT FUEL= 7.4074				PHI= 1.1723					
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
I, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	4.5571-4	4.8826-4	5.2582-4	5.6964-4	6.2143-4	6.8358-4	7.5961-4	8.5737-4	9.9457-4	1.1725-3	1.4119-3	1.7660-3	2.7123-3
M, MOL WT	28.046	28.046	28.046	28.046	28.046	28.046	28.049	28.141	28.564	28.864	28.964	28.983	33.385
CP, CAL/(G)(K)	0.3338	0.3313	0.3289	0.3266	0.3245	0.3227	0.3241	0.4075	0.4211	0.3313	0.2847	0.2681	0.6284
GAMMA (S)	1.2695	1.2720	1.2746	1.2771	1.2794	1.2814	1.2819	1.2449	1.2425	1.2849	1.3231	1.3442	1.1701
SON VEL, M/SEC	751.4	726.6	700.9	674.0	645.9	616.3	584.8	542.4	503.2	471.3	435.8	392.7	295.7

MOLE FRACTIONS

AR	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00839	0.00851	0.00857	0.00852	0.00844	0.00836
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00371	0.01288	0.02233	0.03234
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00168	0.00920	0.01265	0.00971	0.00516	0.00001
CO	0.04458	0.04259	0.04013	0.03708	0.03328	0.02857	0.02278	0.01445	0.00369	0.00034	0.00001	0.00000	0.00000
CO2	0.10480	0.10679	0.10925	0.11230	0.11609	0.12080	0.12656	0.13375	0.13924	0.13647	0.12968	0.12343	0.11703
H2	0.02015	0.02214	0.02460	0.02765	0.03144	0.03614	0.04172	0.04372	0.02532	0.00795	0.00134	0.00009	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.12757
H2O	0.12200	0.12001	0.11755	0.11450	0.11071	0.10600	0.10032	0.09549	0.10095	0.11243	0.12412	0.13320	0.01456
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00005	0.00006	0.00005	0.00003	0.00001	0.00000
N2	0.70012	0.70012	0.70012	0.70012	0.70012	0.70012	0.70019	0.70247	0.71302	0.71783	0.71371	0.70734	0.70014

	CASE= 0	O/F= 12.5000	F/A= 0.08000	PERCENT FUEL= 7.4074				PHI= 1.1723					
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
I, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	3.5804-4	3.7425-4	3.9094-4	4.0817-4	4.2617-4	4.4526-4	4.6580-4	4.8813-4	5.1261-4	5.3963-4	5.6963-4	6.0314-4	6.4084-4
M, MOL WT	27.421	27.639	27.802	27.911	27.976	28.012	28.029	28.038	28.042	28.044	28.045	28.046	28.046
CP, CAL/(G)(K)	0.7867	0.6884	0.5897	0.5011	0.4344	0.3926	0.3691	0.3563	0.3491	0.3447	0.3414	0.3387	0.3362
GAMMA (S)	1.1537	1.1619	1.1749	1.1930	1.2132	1.2307	1.2430	1.2508	1.2558	1.2593	1.2621	1.2646	1.2670
SON VEL, M/SEC	989.7	971.5	955.8	942.6	930.2	916.6	900.6	882.6	863.0	842.2	820.7	798.3	775.2

MOLE FRACTIONS

AR	0.00817	0.00824	0.00829	0.00832	0.00834	0.00835	0.00835	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836
CO	0.07343	0.06646	0.06082	0.05683	0.05435	0.05289	0.05194	0.05118	0.05044	0.04962	0.04868	0.04756	0.04621
CO2	0.07262	0.08075	0.08726	0.09133	0.09465	0.09631	0.09735	0.09816	0.09892	0.09975	0.10070	0.10182	0.10317
H	0.00607	0.00397	0.00256	0.00163	0.00102	0.00063	0.00037	0.00021	0.00011	0.00006	0.00003	0.00001	0.00000
H02	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.01671	0.01479	0.01347	0.01275	0.01255	0.01271	0.01310	0.01364	0.01431	0.01510	0.01605	0.01717	0.01852
H2O	0.11331	0.11913	0.12340	0.12619	0.12776	0.12844	0.12853	0.12825	0.12772	0.12699	0.12608	0.12497	0.12363
N0	0.00666	0.00461	0.00292	0.00168	0.00087	0.00041	0.00018	0.00007	0.00002	0.00001	0.00000	0.00000	0.00000
N2	0.68119	0.68766	0.69257	0.69592	0.69795	0.69906	0.69962	0.69989	0.70002	0.70008	0.70010	0.70011	0.70011
O	0.00267	0.00141	0.00067	0.00028	0.00010	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01185	0.00837	0.00554	0.00342	0.00196	0.00104	0.00052	0.00024	0.00010	0.00004	0.00001	0.00000	0.00000
O2	0.00731	0.00462	0.00251	0.00115	0.00044	0.00015	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000								
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	1.8732E-4	1.9486E-4	2.0280E-4	2.1124E-4	2.2027E-4	2.3000E-4	2.4055E-4	2.5207E-4	2.6470E-4	2.7865E-4	2.9414E-4	3.1145E-4	3.3092E-4				
M, MOL WT	28.632	28.781	28.845	28.889	28.919	28.938	28.950	28.957	28.961	28.963	28.964	28.964	28.964				
CP, CAL/(G)(K)	0.4919	0.4493	0.4146	0.3869	0.3654	0.3489	0.3363	0.3267	0.3191	0.3129	0.3076	0.3028	0.2983				
GAMMA (S)	1.1986	1.2092	1.2203	1.2314	1.2420	1.2518	1.2605	1.2682	1.2751	1.2814	1.2874	1.2931	1.2987				
SON VEL, M/SEC	986.2	971.2	956.3	941.3	925.7	909.5	892.4	874.5	855.7	836.0	815.6	794.4	772.3				

MOLE FRACTIONS

AR	0.00924	0.00926	0.00928	0.00930	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00007	0.00005	0.00003	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00023	0.00025	0.00027	0.00028	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03487	0.03078	0.02676	0.02292	0.01930	0.01598	0.01297	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207				
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001				
N2	0.75611	0.76054	0.76427	0.76740	0.77001	0.77219	0.77402	0.77554	0.77680	0.77784	0.77868	0.77934	0.77985				
O	0.01874	0.01266	0.00826	0.00519	0.00313	0.00180	0.00099	0.00051	0.00025	0.00011	0.00004	0.00002	0.00001				
O2	0.18072	0.18644	0.19110	0.19488	0.19793	0.20035	0.20239	0.20401	0.20533	0.20640	0.20726	0.20793	0.20844				

CASE=	0	0/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000								
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	3.5298E-4	3.7819E-4	4.0728E-4	4.4123E-4	4.8134E-4	5.2947E-4	5.8830E-4	6.6184E-4	7.5638E-4	8.8245E-4	1.0589E-3	1.3237E-3	1.7649E-3				
M, MOL WT	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964				
CP, CAL/(G)(K)	0.2940	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402				
GAMMA (S)	1.3044	1.3102	1.3161	1.3223	1.3287	1.3357	1.3440	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999				
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.3	557.5	523.6	486.8	446.1	400.3	347.2				

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
N2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089				
O2	0.20882	0.20909	0.20927	0.20938	0.20944	0.20947	0.20948	0.20948	0.20948	0.20949	0.20949	0.20949	0.20949				

ADD H2O(L)

CASE= 0 O/F=100.0000 F/A= 0.01000 PERCENT FUEL= 0.9901 PHI= 0.1465

P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	4.7068-4	5.0430-4	5.4309-4	5.8835-4	6.4184-4	7.0602-4	7.8447-4	8.8253-4	1.0086-3	1.1767-3	1.4120-3	1.7651-3	2.3589-3	
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	29.035
CP, CAL/(G*IK)	0.2994	0.2950	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2399	0.2353
GAMMA (S)	1.2973	1.3031	1.3090	1.3151	1.3215	1.3285	1.3369	1.3466	1.3574	1.3688	1.3799	1.3893	1.4000	1.4100
SON VEL, M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	322.3	

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00233
H2	0.01961	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01729
ND	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17642	0.17667	0.17663	0.17693	0.17699	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE= 0 O/F=100.0000 F/A= 0.01000 PERCENT FUEL= 0.9901 PHI= 0.1465

P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	
RHO, G/CC	3.7401-4	3.8918-4	4.0517-4	4.2214-4	4.4029-4	4.5982-4	4.8098-4	5.0406-4	5.2938-4	5.5731-4	5.8831-4	6.2294-4	6.6189-4	
M, MOL WT	28.644	28.742	28.814	28.866	28.903	28.927	28.943	28.953	28.959	28.963	28.965	28.966	28.967	
CP, CAL/(G*IK)	0.5159	0.4725	0.4356	0.4054	0.3813	0.3625	0.3479	0.3366	0.3276	0.3204	0.3142	0.3088	0.3039	
GAMMA (S)	1.1912	1.2005	1.2109	1.2216	1.2322	1.2422	1.2513	1.2595	1.2669	1.2737	1.2799	1.2859	1.2916	
SON VEL, M/SEC	983.9	968.3	953.1	937.9	922.3	906.2	889.3	871.5	852.9	833.5	813.2	792.1	770.2	

MOLE FRACTIONS

AR	0.00913	0.00916	0.00918	0.00920	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00374	0.00256	0.00167	0.00103	0.00060	0.00033	0.00017	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
CO2	0.01691	0.01816	0.01911	0.01978	0.02024	0.02052	0.02069	0.02079	0.02084	0.02086	0.02087	0.02088	0.02088	0.02088
H	0.00100	0.00059	0.00033	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00045	0.00032	0.00022	0.00015	0.00009	0.00005	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01399	0.01523	0.01628	0.01714	0.01783	0.01837	0.01877	0.01907	0.01928	0.01942	0.01951	0.01956	0.01959	
NO	0.03193	0.02813	0.02443	0.02091	0.01761	0.01458	0.01184	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189	
NO2	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	
N2	0.74863	0.75313	0.75692	0.76008	0.76270	0.76487	0.76667	0.76815	0.76937	0.77037	0.77117	0.77179	0.77227	
O	0.01219	0.00822	0.00536	0.00337	0.00233	0.00117	0.00064	0.00033	0.00016	0.00007	0.00003	0.00001	0.00000	
OH	0.00891	0.00723	0.00570	0.00435	0.00322	0.00230	0.00159	0.00105	0.00066	0.00040	0.00023	0.00012	0.00006	
O2	0.15307	0.15723	0.16077	0.16379	0.16635	0.16852	0.17033	0.17185	0.17310	0.17412	0.17493	0.17557	0.17606	

ADD H2O(L)

	0	0/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	9.4144-4	1.0087-3	1.0863-3	1.1768-3	1.2838-3	1.4122-3	1.5691-3	1.7652-3	2.0174-3	2.3536-3	2.8243-3	3.5304-3	4.8551-3
M, MOL WT	28.969	28.969	28.970	28.970	28.970	28.970	28.970	28.969	28.969	28.970	28.970	28.970	29.880
CP, CAL/(G*IK)	0.3044	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.4350
GAMMA (S)	1.2910	1.2966	1.3023	1.3083	1.3147	1.3218	1.3302	1.3399	1.3508	1.3623	1.3737	1.3837	1.2420
SON VEL, M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	322.0

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03047
H2O	0.03885	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.00840
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14488	0.14563	0.14512	0.14517	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	0	0/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	86.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	7.4845-4	7.7868-4	8.1058-4	8.4446-4	8.8071-4	9.1975-4	9.6206-4	1.0082-3	1.0588-3	1.1147-3	1.1767-3	1.2460-3	1.3239-3
M, MOL WT	28.660	28.753	28.823	28.872	28.907	28.931	28.946	28.956	28.962	28.965	28.967	28.969	28.969
CP, CAL/(G*IK)	0.5145	0.4725	0.4367	0.4074	0.3841	0.3659	0.3519	0.3409	0.3322	0.3252	0.3191	0.3138	0.3090
GAMMA (S)	1.1899	1.1991	1.2091	1.2194	1.2295	1.2390	1.2476	1.2553	1.2622	1.2685	1.2744	1.2800	1.2855
SON VEL, M/SEC	983.1	967.6	952.3	937.0	921.3	905.0	887.9	870.0	851.3	831.8	811.4	790.3	768.3

MOLE FRACTIONS

AR	0.00904	0.00907	0.00910	0.00911	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00597	0.00404	0.00261	0.00160	0.00093	0.00051	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000
CO2	0.03466	0.03672	0.03825	0.03933	0.04005	0.04050	0.04077	0.04092	0.04099	0.04103	0.04105	0.04106	0.04106
H	0.00094	0.00054	0.00030	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00003	0.00002	0.00002	0.00032	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00080	0.00056	0.00037	0.00024	0.00015	0.00009	0.00005	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000
H2O(L)	0.03179	0.03345	0.03481	0.03590	0.03675	0.03740	0.03788	0.03822	0.03847	0.03863	0.03873	0.03880	0.03883
NO	0.02889	0.02538	0.02201	0.01883	0.01585	0.01312	0.01066	0.00847	0.00657	0.00495	0.00361	0.00254	0.00170
NO2	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001
N2	0.74309	0.74730	0.75081	0.75372	0.75613	0.75812	0.75976	0.76111	0.76222	0.76312	0.76385	0.76442	0.76485
O	0.00783	0.00526	0.00343	0.00215	0.00130	0.00075	0.00041	0.00021	0.00010	0.00005	0.00002	0.00001	0.00000
OH	0.01076	0.00858	0.00666	0.00503	0.00369	0.00262	0.00180	0.00119	0.00075	0.00045	0.00025	0.00013	0.00007
O2	0.12618	0.12905	0.13161	0.13389	0.13592	0.13770	0.13924	0.14056	0.14166	0.14258	0.14331	0.14389	0.14433

ADD H2O(L)

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=				2.9126	PHI=					0.4396	
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	2.3538-3	2.5220-3	2.7159-3	2.9423-3	3.2098-3	3.5307-3	3.9230-3	4.4134-3	5.0439-3	5.8845-3	7.0614-3	8.8268-3	1.2447-2				
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	30.641
CP, CAL/(G*IK)	0.3092	0.3047	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.3349				
GAMMA (SI)	1.2851	1.2905	1.2961	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.2733				
SON VEL, M/SEC	743.8	720.1	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	322.0				

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05446
H2	0.05772	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.00328
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11364	0.11392	0.11396	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=				2.9126	PHI=					0.4396	
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	1.8745-3	1.9493-3	2.0283-3	2.1125-3	2.2027-3	2.3001-3	2.4057-3	2.5209-3	2.6475-3	2.7871-3	2.9421-3	3.1153-3	3.3100-3				
M, MOL WT	28.713	28.791	28.849	28.891	28.920	28.939	28.952	28.960	28.965	28.969	28.970	28.971	28.972				
CP, CAL/(G*IK)	0.4934	0.4568	0.4259	0.4006	0.3806	0.3650	0.3528	0.3432	0.3355	0.3290	0.3234	0.3184	0.3137				
GAMMA (SI)	1.1934	1.2022	1.2116	1.2210	1.2301	1.2384	1.2459	1.2526	1.2587	1.2644	1.2697	1.2749	1.2800				
SON VEL, M/SEC	983.7	968.2	952.8	937.3	921.3	904.6	887.2	869.0	850.1	830.4	809.9	788.7	766.6				

MOLE FRACTIONS

AR	0.00897	0.00900	0.00902	0.00903	0.00904	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.00659	0.00441	0.00281	0.00171	0.00099	0.00054	0.00028	0.00014	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.05372	0.05607	0.05778	0.05897	0.05976	0.06024	0.06053	0.06070	0.06078	0.06082	0.06084	0.06085	0.06086				
H	0.00033	0.00036	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00004	0.00003	0.00003	0.00032	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00091	0.00062	0.00041	0.00026	0.00016	0.00009	0.00005	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000				
H2O	0.05088	0.05254	0.05387	0.05493	0.05574	0.05636	0.05682	0.05714	0.05737	0.05752	0.05762	0.05768	0.05771				
NO	0.02555	0.02240	0.01940	0.01657	0.01395	0.01155	0.00938	0.00746	0.00578	0.00436	0.00318	0.00224	0.00150				
NO2	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002				
N2	0.73877	0.74239	0.74541	0.74791	0.74998	0.75170	0.75312	0.75430	0.75527	0.75607	0.75670	0.75720	0.75758				
O	0.00439	0.00295	0.00192	0.00120	0.00073	0.00042	0.00023	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000				
OH	0.01019	0.00804	0.00620	0.00465	0.00340	0.00241	0.00165	0.00109	0.00068	0.00041	0.00023	0.00012	0.00006				
O2	0.09930	0.10115	0.10292	0.10459	0.10615	0.10757	0.10884	0.10995	0.11089	0.11168	0.11232	0.11283	0.11322				

ADD H2O(L)

CASE=	0	O/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862										
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0	0.0	0.0
RHO, G/CC	4.7080-3	5.0443-3	5.4324-3	5.8851-3	6.4201-3	7.0621-3	7.8467-3	8.8276-3	1.0089-2	1.1770-2	1.4124-2	1.7655-2	2.5439-2						
M, MOL WT	28.974	28.975	28.975	28.975	28.975	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G)(K)	0.3138	0.3094	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.2470						
GAMMA (S)	1.2797	1.2848	1.2902	1.2961	1.3024	1.3094	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.2774						
SON VEL, M/SEC	742.2	718.4	693.8	668.1	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	319.0						

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75071	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08313	0.08325	0.08332	0.08335	0.08337	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

CASE=	0	O/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862										
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4850.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3						
RHO, G/CC	3.7524-3	3.9011-3	4.0586-3	4.2265-3	4.4066-3	4.6010-3	4.8121-3	5.0425-3	5.2955-3	5.5747-3	5.8847-3	6.2311-3	6.6206-3						
M, MOL WT	28.738	28.810	28.863	28.901	28.928	28.945	28.957	28.964	28.969	28.971	28.973	28.974	28.974						
CP, CAL/(G)(K)	0.4858	0.4514	0.4224	0.3988	0.3803	0.3658	0.3546	0.3458	0.3387	0.3328	0.3275	0.3227	0.3182						
GAMMA (S)	1.1943	1.2030	1.2120	1.2209	1.2293	1.2370	1.2438	1.2499	1.2554	1.2605	1.2653	1.2701	1.2748						
SON VEL, M/SEC	983.6	968.2	952.8	937.1	920.9	904.0	886.4	868.0	848.9	829.0	808.5	787.1	765.1						

MOLE FRACTIONS

AR	0.00889	0.00892	0.00893	0.00894	0.00895	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.00724	0.00489	0.00311	0.00189	0.00109	0.00060	0.00031	0.00015	0.00007	0.00003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.07227	0.07493	0.07686	0.07818	0.07905	0.07956	0.07992	0.08010	0.08019	0.08024	0.08026	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H	0.00048	0.00027	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00103	0.00070	0.00046	0.00029	0.00018	0.00010	0.00006	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.06970	0.07133	0.07262	0.07363	0.07440	0.07498	0.07540	0.07571	0.07591	0.07605	0.07614	0.07619	0.07622						
NO	0.02175	0.01903	0.01646	0.01406	0.01183	0.00980	0.00796	0.00633	0.00491	0.00371	0.00271	0.00190	0.00128						
NO2	0.00004	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002						
N2	0.73409	0.73732	0.73998	0.74217	0.74397	0.74545	0.74667	0.74767	0.74850	0.74918	0.74972	0.75014	0.75047						
O	0.00265	0.00178	0.00115	0.00072	0.00044	0.00025	0.00014	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000						
OH	0.00927	0.00728	0.00558	0.00418	0.00305	0.00216	0.00147	0.00097	0.00061	0.00037	0.00021	0.00011	0.00005						
O2	0.07242	0.07349	0.07463	0.07580	0.07695	0.07805	0.07907	0.07997	0.08076	0.08142	0.08196	0.08239	0.08272						

ADD H2O(L)

	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619					PHI= 0.7327					
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0			
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3			
RHO, G/CC	9.4168-3	1.0089-2	1.0866-2	1.1771-2	1.2841-2	1.4125-2	1.5695-2	1.7657-2	2.0179-2	2.3542-2	2.8251-2	3.6707-2	5.1948-2			
M, MOL WT	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	30.121	31.970		
CP, CAL/(G*IK)	0.3183	0.3139	0.3034	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2557	0.2988			
GAMMA (S)	1.2747	1.2796	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.2084	1.2715			
SON VEL,M/SEC	740.7	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	365.3	315.0			

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03798	0.09363		
H2O	0.09440	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.05644	0.00079		
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74370	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05301	0.05315	0.05324	0.05329	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619					PHI= 0.7327					
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0			
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3			
RHO, G/CC	6.2542-3	6.5024-3	6.7651-3	7.0451-3	7.3453-3	7.6694-3	8.0211-3	8.4051-3	8.8267-3	9.2920-3	9.8088-3	1.0386-2	1.1035-2			
M, MOL WT	28.739	28.812	28.866	28.905	28.931	28.949	28.960	28.967	28.972	28.974	28.976	28.976	28.977			
CP, CAL/(G*IK)	0.4902	0.4551	0.4254	0.4014	0.3825	0.3681	0.3571	0.3487	0.3419	0.3363	0.3314	0.3269	0.3225			
GAMMA (S)	1.1927	1.2013	1.2103	1.2193	1.2276	1.2350	1.2415	1.2472	1.2523	1.2569	1.2613	1.2657	1.2701			
SON VEL,M/SEC	982.9	967.5	952.1	936.4	920.2	903.2	885.5	867.0	847.8	827.8	807.1	785.7	763.6			

MOLE FRACTIONS

AR	0.00881	0.00883	0.00885	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.00822	0.00589	0.00375	0.00228	0.00132	0.00072	0.00037	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.08969	0.09267	0.09519	0.09680	0.09785	0.09851	0.09889	0.09911	0.09922	0.09928	0.09931	0.09932	0.09932	0.09932	0.09932	0.09932
H	0.00041	0.00023	0.00013	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00004	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00126	0.00086	0.00056	0.00035	0.00021	0.00012	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.08805	0.08969	0.09097	0.09195	0.09270	0.09325	0.09364	0.09392	0.09411	0.09424	0.09432	0.09436	0.09439			
NO	0.01736	0.01512	0.01304	0.01112	0.00936	0.00775	0.00630	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102			
NO2	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00000	0.00000	0.00000
N2	0.72923	0.73223	0.73466	0.73660	0.73816	0.73942	0.74044	0.74126	0.74193	0.74248	0.74291	0.74325	0.74351			
O	0.00165	0.00110	0.00071	0.00045	0.00027	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00821	0.00641	0.00490	0.00366	0.00267	0.00189	0.00129	0.00085	0.00054	0.00032	0.00018	0.00010	0.00005			
O2	0.04644	0.04671	0.04719	0.04781	0.04852	0.04927	0.04999	0.05067	0.05127	0.05179	0.05222	0.05256	0.05282			

ADD H2O(L)

CASE=	0	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/C	1.1772-4	1.2613-4	1.3584-4	1.4716-4	1.6054-4	1.7659-4	1.9621-4	2.2074-4	2.5227-4	2.9432-4	3.5318-4	4.4148-4	6.2730-4
M, MOL WT	28.979	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	30.884
CP, CAL/(G*IK)	0.3285	0.3224	0.3173	0.3123	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	1.7616
GAMMA (S)	1.2646	1.2704	1.2758	1.2813	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.1374
SON VEL, M/SEC	737.7	714.3	689.8	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	303.1

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00011	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13303	0.13312	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.06163
H2O	0.12662	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.06505
NO	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73136	0.73140	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/C	1.1942-4	1.2541-4	1.3161-4	1.3806-4	1.4480-4	1.5189-4	1.5940-4	1.6744-4	1.7613-4	1.8562-4	1.9606-4	2.0768-4	2.2070-4
M, MOL WT	27.438	27.785	28.079	28.322	28.516	28.665	28.775	28.853	28.939	28.959	28.979	28.979	28.976
CP, CAL/(G*IK)	0.9926	0.8952	0.8010	0.7117	0.6295	0.5569	0.4955	0.4458	0.4075	0.3791	0.3588	0.3446	0.3348
GAMMA (S)	1.1394	1.1421	1.1466	1.1533	1.1623	1.1736	1.1870	1.2015	1.2162	1.2299	1.2417	1.2513	1.2590
SON VEL, M/SEC	983.2	960.6	939.6	920.0	901.8	884.8	868.6	852.7	836.5	819.4	801.1	781.3	760.3

MOLE FRACTIONS

AR	0.00827	0.00837	0.00846	0.00853	0.00859	0.00864	0.00867	0.00869	0.00871	0.00872	0.00873	0.00873	0.00873
CO	0.06165	0.05122	0.04085	0.03120	0.02278	0.01587	0.01052	0.00661	0.00393	0.00219	0.00114	0.00054	0.00024
CO2	0.06442	0.07645	0.08817	0.09893	0.10824	0.11584	0.12170	0.12596	0.12888	0.13078	0.13192	0.13257	0.13290
H	0.00926	0.00571	0.00337	0.00131	0.00013	0.00052	0.00025	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01295	0.01020	0.00781	0.00582	0.00422	0.00297	0.00202	0.00133	0.00084	0.00050	0.00029	0.00015	0.00008
H2O	0.09281	0.10099	0.10773	0.11310	0.11723	0.12032	0.12254	0.12409	0.12513	0.12580	0.12620	0.12644	0.12657
NO	0.01223	0.00986	0.00768	0.00577	0.00417	0.00289	0.00192	0.00122	0.00073	0.00041	0.00022	0.00011	0.00005
N2	0.68637	0.69630	0.70482	0.71192	0.71761	0.72202	0.72528	0.72795	0.72916	0.73016	0.73076	0.73111	0.73129
OH	0.00845	0.00519	0.00302	0.00166	0.00086	0.00041	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000
O	0.01910	0.01480	0.01101	0.00785	0.00536	0.00350	0.00218	0.00128	0.00071	0.00037	0.00018	0.00008	0.00003
O2	0.02449	0.02090	0.01707	0.01331	0.00990	0.00702	0.00474	0.00303	0.00184	0.00105	0.00056	0.00027	0.00012

ADD H2O(L)
ADD C(S)

CASE=	0	O/F=	14.2857	F/A=	0.07000	PERCENT FUEL=	6.5421	PHI=	1.0258										
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	3.5141-4	3.7651-4	4.0548-4	4.3927-4	4.7920-4	5.2712-4	5.8569-4	6.5890-4	7.5311-4	8.8056-4	1.0590-3	1.3244-3	1.9822-3						
M, MOL WT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.902	28.966	28.980	32.530						
CP, CAL/(G)(K)	0.3262	0.3226	0.3188	0.3146	0.3101	0.3052	0.2994	0.2926	0.2883	0.2995	0.2743	0.2602	0.7427						
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2917	1.2990	1.3082	1.3164	1.3115	1.3380	1.3583	1.1654						
SON VEL, M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.6	549.3	515.4	475.8	438.2	394.8	298.9						

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00868	0.00869	0.00871	0.00872	0.00867					
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00497					
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00005	0.00114	0.00225	0.00250	0.00003					
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00427	0.00321	0.00207	0.00104	0.00021	0.00001	0.00000	0.00000	0.00000					
CO2	0.12840	0.12876	0.12921	0.12978	0.13050	0.13140	0.13247	0.13360	0.13460	0.13464	0.13403	0.13385	0.13069						
H2	0.00278	0.00313	0.00358	0.00415	0.00488	0.00578	0.00684	0.00797	0.00879	0.00927	0.00107	0.00008	0.00000	0.00000					
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10855					
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12224	0.12111	0.12019	0.12180	0.12407	0.12463	0.02048						
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00001	0.00001	0.00000	0.00000					
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72654	0.72823	0.72984	0.73021	0.72661					

CASE=	0	O/F=	14.2857	F/A=	0.07000	PERCENT FUEL=	6.5421	PHI=	1.0258										
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4						
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	2.4087-4	2.5237-4	2.6433-4	2.7682-4	2.8993-4	3.0377-4	3.1847-4	3.3422-4	3.5124-4	3.6985-4	3.9044-4	4.1342-4	4.3927-4						
M, MOL WT	27.671	27.956	28.197	28.394	28.549	28.665	28.746	28.797	28.822	28.831	28.835	28.836	28.836						
CP, CAL/(G)(K)	0.8808	0.7986	0.7185	0.6424	0.5720	0.5085	0.4520	0.4028	0.3661	0.3464	0.3377	0.3331	0.3295						
GAMMA (S)	1.1452	1.1488	1.1543	1.1620	1.1721	1.1848	1.2004	1.2191	1.2378	1.2504	1.2570	1.2611	1.2645						
SON VEL, M/SEC	981.6	960.5	940.7	922.3	905.1	889.0	874.0	859.8	845.1	827.7	807.7	786.2	763.8						

MOLE FRACTIONS

AR	0.00832	0.00841	0.00848	0.00854	0.00859	0.00862	0.00865	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867					
CO	0.05671	0.04691	0.03759	0.02925	0.02222	0.01669	0.01268	0.01013	0.00883	0.00828	0.00800	0.00779	0.00756						
CO2	0.07348	0.08463	0.09508	0.10435	0.11210	0.11819	0.12258	0.12536	0.12678	0.12738	0.12767	0.12789	0.12812						
H	0.00615	0.00380	0.00226	0.00130	0.00072	0.00038	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000						
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2O	0.01142	0.00905	0.00704	0.00540	0.00411	0.00315	0.00248	0.00208	0.00194	0.00197	0.00210	0.00227	0.00250						
H2O	0.10151	0.10824	0.11372	0.11804	0.12134	0.12374	0.12539	0.12640	0.12688	0.12701	0.12695	0.12680	0.12658						
N0	0.01077	0.00845	0.00638	0.00459	0.00313	0.00198	0.00113	0.00056	0.00023	0.00008	0.00002	0.00001	0.00000						
N2	0.69183	0.70018	0.70729	0.71314	0.71777	0.72127	0.72374	0.72530	0.72610	0.72642	0.72652	0.72656	0.72657						
O	0.00524	0.00314	0.00177	0.00094	0.00046	0.00020	0.00008	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000						
OH	0.01573	0.01191	0.00866	0.00602	0.00398	0.00247	0.00142	0.00074	0.00034	0.00013	0.00005	0.00001	0.00000						
O2	0.01884	0.01528	0.01172	0.00843	0.00558	0.00331	0.00165	0.00064	0.00018	0.00003	0.00001	0.00000	0.00000						

ADD C(S)
ADD H2O(L)

	CASE=	O	D/F=	12.5000	F/A=	0.08000	PERCENT FUEL=	7.4074	PHI=	1.1723									
P, ATM			3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA			44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K			1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG F			2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0
RHO, G/CC		6.8357-4	7.3240-4	7.8873-4	8.5446-4	9.3214-4	1.0254-3	1.1396-3	1.2888-3	1.4952-3	1.7600-3	2.1181-3	2.6490-3	4.0925-3					
M, MOL WT			28.046	28.046	28.046	28.046	28.046	28.046	28.046	28.046	28.046	28.885	28.968	28.983	33.582				
CP, CAL/(G*IK)			0.3338	0.3313	0.3289	0.3266	0.3245	0.3229	0.3285	0.4349	0.4040	0.3226	0.2827	0.2679	0.5180				
GAMMA (S)			1.2695	1.2720	1.2746	1.2771	1.2794	1.2813	1.2794	1.2358	1.2490	1.2906	1.3251	1.3444	1.1828				
SON VEL, M/SEC			751.4	726.6	700.9	674.0	645.9	616.3	584.2	539.9	503.9	472.1	436.1	392.8	296.4				

MOLE FRACTIONS

AR			0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00941	0.00853	0.00857	0.00852	0.00844	0.00836				
C(S)			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00375	0.01294	0.02233	0.03235				
CH4			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00012	0.00276	0.01035	0.01290	0.00974	0.00516	0.00001				
CO			0.04458	0.04259	0.04013	0.03708	0.03328	0.02857	0.02269	0.01331	0.00307	0.00028	0.00001	0.00000	0.00000				
CO2			0.10480	0.10679	0.10925	0.11230	0.11609	0.12081	0.12661	0.13414	0.13906	0.13611	0.12960	0.12342	0.11702				
H2			0.02015	0.02214	0.02469	0.02765	0.03144	0.03613	0.04155	0.04665	0.05219	0.00656	0.00110	0.00007	0.00000				
H2O(L)			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13249				
H2O			0.12200	0.12001	0.11755	0.11450	0.11070	0.10600	0.10036	0.09668	0.10280	0.11339	0.12430	0.13321	0.00965				
NH3			0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00003	0.00006	0.00008	0.00006	0.00003	0.00001	0.00000				
N2			0.70012	0.70012	0.70012	0.70012	0.70012	0.70012	0.70028	0.70399	0.71452	0.71819	0.71376	0.70734	0.70013				

	CASE=	O	D/F=	12.5000	F/A=	0.08000	PERCENT FUEL=	7.4074	PHI=	1.1723									
P, ATM			4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA			58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8				
T, DEG K			2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F			4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC		4.7878-4	5.0003-4	5.2193-4	5.4464-4	5.6845-4	5.9379-4	6.2112-4	6.5087-4	6.8350-4	7.1951-4	7.5951-4	8.0419-4	8.5446-4					
M, MOL WT			27.501	27.696	27.838	27.932	27.987	28.017	28.032	28.039	28.043	28.044	28.045	28.046	28.046				
CP, CAL/(G*IK)			0.7438	0.6504	0.5584	0.4789	0.4213	0.3858	0.3659	0.3549	0.3485	0.3444	0.3413	0.3387	0.3362				
GAMMA (S)			1.1576	1.1668	1.1807	1.1991	1.2182	1.2340	1.2448	1.2517	1.2563	1.2595	1.2622	1.2646	1.2670				
SON VEL, M/SEC			989.9	972.5	957.5	944.6	932.0	917.7	901.3	882.9	863.1	842.3	820.7	798.3	775.2				

MOLE FRACTIONS

AR			0.00820	0.00825	0.00830	0.00832	0.00834	0.00835	0.00835	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836				
CO			0.07120	0.06473	0.05967	0.05619	0.05406	0.05277	0.05190	0.05117	0.05043	0.04962	0.04868	0.04756	0.04621				
CO2			0.07528	0.08278	0.08860	0.09228	0.09501	0.09645	0.09740	0.09817	0.09893	0.09975	0.10070	0.10182	0.10317				
H			0.00513	0.00337	0.00219	0.00140	0.00088	0.00054	0.00032	0.00018	0.00010	0.00005	0.00002	0.00001	0.00000				
H2			0.01593	0.01424	0.01312	0.01257	0.01247	0.01268	0.01309	0.01364	0.01431	0.01511	0.01605	0.01717	0.01852				
H2O			0.11553	0.12071	0.12443	0.12681	0.12809	0.12860	0.12861	0.12861	0.12828	0.12773	0.12700	0.12608	0.12497				
NO			0.00618	0.00420	0.00262	0.00148	0.00076	0.00036	0.00015	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000				
N2			0.68343	0.68928	0.69363	0.69654	0.69827	0.69921	0.69969	0.69992	0.70003	0.70008	0.70010	0.70011	0.70011				
O			0.00214	0.00111	0.00052	0.00022	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
OH			0.01072	0.00749	0.00490	0.00300	0.00170	0.00091	0.00045	0.00021	0.00009	0.00003	0.00001	0.00000	0.00000				
O2			0.00627	0.00384	0.00202	0.00090	0.00034	0.00011	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000				

ADD C(S)
ADD H2O(L)

CASE= 0 O/F= 11.1111 F/A= 0.09000 PERCENT FUEL= 8.2569 PHI= 1.3189
P, ATM 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000
P, PSIA 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2
T, DEG K 1500.0 1400.0 1300.0 1200.0 1100.0 1000.0 900.0 800.0 700.0 600.0 500.0 400.0 300.0
T, DEG F 2240.3 2060.3 1880.3 1700.3 1520.3 1340.3 1160.3 980.3 800.3 620.3 440.3 260.3 80.3
RHO, G/CC 1.3313-3 1.4264-3 1.5362-3 1.6642-3 1.8155-3 1.9979-3 2.2341-3 2.5746-3 2.9972-3 3.5229-3 4.2371-3 5.2985-3 8.3996-3
M, MOL WT 27.311 27.311 27.311 27.311 27.312 27.323 27.498 28.169 28.693 28.908 28.973 28.985 34.462
CP, CAL/(G)(K) 0.3403 0.3385 0.3369 0.3357 0.3357 0.3476 0.5026 0.5945 0.3989 0.3171 0.2844 0.2713 0.4162
GAMMA (S) 1.2719 1.2738 1.2755 1.2768 1.2772 1.2713 1.2186 1.1946 1.2478 1.2926 1.3214 1.3384 1.1942
SON VEL, M/SEC 762.1 736.8 710.5 683.0 654.0 622.0 575.9 531.1 503.1 472.3 435.4 391.9 294.0

MOLE FRACTIONS

AR 0.00806 0.00806 0.00806 0.00806 0.00807 0.00807 0.00812 0.00830 0.00834 0.00832 0.00826 0.00817 0.00806
C(S) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00246 0.01579 0.02479 0.03452 0.04539 0.05778
CH4 0.00000 0.00000 0.00000 0.00000 0.00001 0.00020 0.00337 0.01436 0.01694 0.01607 0.01210 0.00656 0.00000
CO 0.07610 0.07308 0.06941 0.06491 0.05935 0.05219 0.03913 0.01492 0.00230 0.00019 0.00001 0.00000 0.00000
CO2 0.08601 0.08903 0.09270 0.09720 0.10276 0.10980 0.12071 0.13504 0.13259 0.12629 0.11941 0.11229 0.10433
H2 0.03946 0.04248 0.04614 0.05063 0.05614 0.06258 0.06358 0.04141 0.01767 0.00512 0.00085 0.00006 0.00000
H2O(L) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.14972
H2O 0.01484 0.01182 0.00815 0.01365 0.009811 0.09133 0.08488 0.08843 0.10782 0.12189 0.13292 0.14314 0.00458
NH3 0.00000 0.00000 0.00001 0.00001 0.00002 0.00005 0.00010 0.00013 0.00011 0.00008 0.00004 0.00001 0.00000
N2 0.67552 0.67552 0.67552 0.67553 0.67554 0.67580 0.68010 0.69495 0.69843 0.69725 0.61188 0.68438 0.67552

CASE= 0 O/F= 11.1111 F/A= 0.09000 PERCENT FUEL= 8.2569 PHI= 1.3189
P, ATM 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000
P, PSIA 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0
T, DEG K 2800.0 2700.0 2600.0 2500.0 2400.0 2300.0 2200.0 2100.0 2000.0 1900.0 1800.0 1700.0 1600.0
T, DEG F 4580.3 4400.3 4220.3 4040.3 3860.3 3680.3 3500.3 3320.3 3140.3 2960.3 2780.3 2600.3 2420.3
RHO, G/CC 1.1794-3 1.2268-3 1.2765-3 1.3291-3 1.3855-3 1.4464-3 1.5125-3 1.5847-3 1.6641-3 1.7517-3 1.8490-3 1.9578-3 2.0802-3
M, MOL WT 27.098 27.180 27.233 27.266 27.286 27.297 27.304 27.307 27.309 27.310 27.311 27.311 27.311
CP, CAL/(G)(K) 0.5423 0.4788 0.4325 0.4014 0.3814 0.3687 0.3606 0.3553 0.3516 0.3488 0.3465 0.3443 0.3423
GAMMA (S) 1.1909 1.2059 1.2207 1.2333 1.2430 1.2501 1.2551 1.2587 1.2616 1.2639 1.2660 1.2680 1.2700
SON VEL, M/SEC 1011.5 998.0 984.4 969.6 953.4 935.8 917.0 897.1 876.5 855.0 832.9 810.1 786.5

MOLE FRACTIONS

AR 0.00800 0.00803 0.00804 0.00805 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806
CO 0.09495 0.09275 0.09121 0.09007 0.08915 0.08828 0.08739 0.08641 0.08529 0.08399 0.08249 0.08071 0.07861
CO2 0.06589 0.06858 0.07044 0.07177 0.07281 0.07375 0.07468 0.07568 0.07681 0.07811 0.07962 0.08140 0.08350
H 0.00413 0.00285 0.00193 0.00127 0.00081 0.00050 0.00030 0.00017 0.00009 0.00004 0.00002 0.00001 0.00000
H2 0.02574 0.02547 0.02559 0.02598 0.02656 0.02729 0.02814 0.02912 0.03025 0.03155 0.03307 0.03485 0.03695
H2O 0.12247 0.12484 0.12618 0.12677 0.12682 0.12649 0.12588 0.12503 0.12398 0.12271 0.12121 0.11944 0.11735
NO 0.00254 0.00152 0.00085 0.00045 0.00022 0.00010 0.00004 0.00002 0.00001 0.00000 0.00000 0.00000 0.00000
N2 0.66898 0.67153 0.67318 0.67419 0.67479 0.67513 0.67532 0.67542 0.67547 0.67550 0.67551 0.67552 0.67552
O 0.00056 0.00026 0.00011 0.00004 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000
OH 0.00565 0.00366 0.00225 0.00132 0.00073 0.00038 0.00019 0.00009 0.00004 0.00001 0.00001 0.00000 0.00000
O2 0.00108 0.00051 0.00022 0.00008 0.00003 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000

ADD H2O(L)

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931								
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0			
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3			
RHO, G/CC	1.4122-3	1.5130-3	1.6294-3	1.7652-3	1.9257-3	2.1183-3	2.3536-3	2.6478-3	3.0261-3	3.5304-3	4.2365-3	5.2956-3	7.3039-3			
M, MOL WT	28.969	28.970	28.970	28.970	28.970	28.970	28.970	28.969	28.969	28.970	28.970	28.970	29.967			
CP, CAL/(G)(K)	0.3044	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.3752			
GAMMA (S)	1.2910	1.2966	1.3023	1.3083	1.3147	1.3218	1.3301	1.3399	1.3508	1.3623	1.3737	1.3837	1.2642			
SON VEL, M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	324.4			

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03328
H2O	0.03885	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.00558
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14488	0.14503	0.14512	0.14517	0.14519	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931								
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0			
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3			
RHO, G/CC	1.2500-3	1.2997-3	1.3523-3	1.4083-3	1.4684-3	1.5333-3	1.6037-3	1.6805-3	1.7648-3	1.8579-3	1.9612-3	2.0767-3	2.2065-3			
M, MOL WT	28.720	28.795	28.851	28.891	28.919	28.938	28.950	28.958	28.963	28.966	28.968	28.969	28.969			
CP, CAL/(G)(K)	0.4830	0.4483	0.4189	0.3948	0.3756	0.3604	0.3483	0.3388	0.3310	0.3244	0.3187	0.3136	0.3089			
GAMMA (S)	1.1969	1.2058	1.2151	1.2245	1.2336	1.2420	1.2497	1.2567	1.2631	1.2691	1.2747	1.2802	1.2856			
SON VEL, M/SEC	985.0	969.6	954.2	938.6	922.6	906.0	888.6	870.5	851.6	831.9	811.5	790.3	768.4			

MOLE FRACTIONS

AR	0.00906	0.00909	0.00910	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00478	0.00320	0.00205	0.00125	0.00072	0.00040	0.00021	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.03593	0.03761	0.03885	0.03970	0.04027	0.04062	0.04083	0.04095	0.04101	0.04104	0.04105	0.04106	0.04106	0.04106	0.04106	0.04106
H	0.00055	0.00037	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00063	0.00044	0.00029	0.00019	0.00011	0.00007	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.03275	0.03418	0.03535	0.03628	0.03702	0.03758	0.03800	0.03830	0.03852	0.03866	0.03875	0.03881	0.03884	0.03884	0.03884	0.03884
NO	0.02899	0.02545	0.02205	0.01885	0.01587	0.01313	0.01066	0.00847	0.00657	0.00495	0.00361	0.00254	0.00170			
NO2	0.00004	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
N2	0.74461	0.74836	0.75153	0.75419	0.75642	0.75829	0.75986	0.76117	0.76225	0.76314	0.76386	0.76442	0.76485			
O	0.00608	0.00409	0.00266	0.00167	0.00101	0.00058	0.00032	0.00016	0.00008	0.00004	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
OH	0.00962	0.00764	0.00591	0.00446	0.00326	0.00232	0.00159	0.00105	0.00066	0.00040	0.00022	0.00012	0.00006			
O2	0.12682	0.12951	0.13195	0.13414	0.13609	0.13781	0.13932	0.14060	0.14169	0.14259	0.14332	0.14389	0.14433			

ADD H2O(L)

CASE=	0	0/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862					
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	7.0621-3	7.5665-3	8.1485-3	8.8276-3	9.6301-3	1.0593-2	1.1770-2	1.3241-2	1.5133-2	1.7655-2	2.1186-2	2.6483-2	3.8181-2
M, MOL WT	28.974	28.975	28.975	28.975	28.975	28.974	28.974	28.974	28.974	28.974	28.974	28.974	31.330
CP, CAL/(G*IK)	0.3138	0.3094	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.2967
GAMMA (S)	1.2797	1.2848	1.2902	1.2961	1.3024	1.3094	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.2844
SON VEL, M/SEC	742.2	718.4	693.8	668.0	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	319.8

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00997	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.07518
H2O	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.00107
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75071	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08313	0.08324	0.08331	0.08335	0.08337	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

CASE=	0	0/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862					
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3
RHO, G/CC	5.0078-3	5.2048-3	5.4138-3	5.6369-3	5.8765-3	6.1354-3	6.4165-3	6.7236-3	7.0608-3	7.4330-3	7.8464-3	8.3081-3	8.8275-3
M, MOL WT	28.765	28.828	28.875	28.909	28.933	28.948	28.959	28.965	28.969	28.972	28.973	28.974	28.974
CP, CAL/(G*IK)	0.4713	0.4402	0.4142	0.3931	0.3764	0.3633	0.3531	0.3449	0.3382	0.3324	0.3274	0.3227	0.3182
GAMMA (S)	1.1979	1.2063	1.2149	1.2233	1.2312	1.2383	1.2447	1.2505	1.2557	1.2607	1.2654	1.2701	1.2749
SON VEL, M/SEC	984.6	969.2	953.7	937.9	921.5	904.4	886.7	868.2	849.0	829.1	808.5	787.2	765.1

MOLE FRACTIONS

AR	0.00890	0.00892	0.00894	0.00895	0.00895	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.00645	0.00427	0.00271	0.00164	0.00095	0.00052	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000
CO2	0.07324	0.07560	0.07729	0.07845	0.07921	0.07968	0.07996	0.08012	0.08020	0.08024	0.08026	0.08027	0.08027
H	0.00039	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00004	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.00090	0.00061	0.00040	0.00025	0.00015	0.00009	0.00005	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000
H2O	0.07025	0.07173	0.07291	0.07384	0.07455	0.07508	0.07547	0.07575	0.07594	0.07607	0.07615	0.07620	0.07623
NO	0.02174	0.01902	0.01646	0.01406	0.01183	0.00980	0.00796	0.00633	0.00491	0.00371	0.00271	0.00190	0.00128
NO2	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002
N2	0.73478	0.73780	0.74030	0.74238	0.74410	0.74552	0.74671	0.74770	0.74851	0.74918	0.74972	0.75014	0.75047
O	0.00230	0.00154	0.00100	0.00063	0.00038	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000
OH	0.00866	0.00679	0.00521	0.00390	0.00284	0.00201	0.00137	0.00090	0.00057	0.00034	0.00019	0.00010	0.00005
O2	0.07229	0.07341	0.07459	0.07578	0.07695	0.07806	0.07907	0.07998	0.08076	0.08142	0.08196	0.08239	0.08272

ADD H2O(L)

CASE=	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327										
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	1.1771-2	1.2612-2	1.3582-2	1.4714-2	1.6051-2	1.7657-2	1.9618-2	2.2071-2	2.5224-2	2.9428-2	3.5313-2	4.6456-2	6.4946-2						
M, MOL WT	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	30.496	31.976				
CP, CAL/(G)(K)	0.3182	0.3139	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2535	0.2455	0.2375	0.2295				
GAMMA (S)	1.2747	1.2796	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.2133	1.2735						
SON VEL, M/SEC	740.7	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	363.8	315.2						

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00958	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74370	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05301	0.05315	0.05324	0.05329	0.05332	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	5.9443-5	6.2565-5	6.5778-5	6.9094-5	7.2528-5	7.6104-5	7.9863-5	8.3862-5	8.8172-5	9.2878-5	9.8072-5	1.0386-4	1.1036-4						
M, MOL WT	27.315	27.723	28.067	28.348	28.567	28.726	28.835	28.902	28.941	28.961	28.971	28.976	28.978						
CP, CAL/(G)(K)	1.0985	0.9817	0.8674	0.7568	0.6527	0.5594	0.4819	0.4237	0.3841	0.3593	0.3442	0.3348	0.3283						
GAMMA (S)	1.1352	1.1374	1.1417	1.1486	1.1590	1.1732	1.1908	1.2098	1.2273	1.2412	1.2513	1.2587	1.2645						
SON VEL, M/SEC	983.6	959.7	937.7	917.7	899.8	883.7	869.1	854.9	839.7	822.8	804.0	783.6	761.9						

MOLE FRACTIONS

AR	0.00829	0.00842	0.00852	0.00861	0.00867	0.00872	0.00876	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.05749	0.04704	0.03633	0.02624	0.01757	0.01079	0.00604	0.00307	0.00142	0.00059	0.00022	0.00007	0.00002						
CO2	0.05375	0.06586	0.07797	0.08920	0.09877	0.10619	0.11138	0.11463	0.11644	0.11735	0.11776	0.11793	0.11799						
H	0.01253	0.00765	0.00443	0.00243	0.00125	0.00060	0.00027	0.00011	0.00004	0.00001	0.00000	0.00000	0.00000						
H02	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2	0.01187	0.00916	0.00675	0.00473	0.00313	0.00195	0.00113	0.00060	0.00030	0.00013	0.00006	0.00002	0.00001						
H2O	0.07610	0.08508	0.09254	0.09849	0.10301	0.10631	0.10859	0.11009	0.11102	0.11158	0.11190	0.11207	0.11216						
NO	0.01548	0.01310	0.01083	0.00878	0.00700	0.00553	0.00434	0.00338	0.00260	0.00195	0.00142	0.00100	0.00067						
N2	0.68700	0.69856	0.70846	0.71663	0.72307	0.72787	0.73122	0.73341	0.73479	0.73563	0.73615	0.73648	0.73669						
O	0.01512	0.00974	0.00601	0.00356	0.00203	0.00111	0.00059	0.00030	0.00014	0.00006	0.00003	0.00001	0.00000						
OH	0.02313	0.01860	0.01439	0.01073	0.00773	0.00540	0.00366	0.00239	0.00150	0.00090	0.00051	0.00027	0.00013						
O2	0.03922	0.03678	0.03375	0.03060	0.02774	0.02551	0.02403	0.02324	0.02297	0.02300	0.02316	0.02335	0.02352						

ADD H2O(L)

CASE=	0	O/F=	14.6540	F/A=	0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000				
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	2.3544-4	2.5227-4	2.7168-4	2.9432-4	3.2108-4	3.5318-4	3.9243-4	4.4148-4	5.0455-4	5.9864-4	7.0637-4	8.8296-4	1.3013-3	
M, MOL WT	28.979	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	32.035
CP, CAL/(G)(K)	0.3277	0.3221	0.3172	0.3123	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.2590	0.9771
GAMMA (S)	1.2652	1.2706	1.2759	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.1538	
SON VEL, M/SEC	737.9	714.4	689.8	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	299.7	

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13306	0.13313	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.09532
H2O	0.12663	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.03136
NO	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73137	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	O/F=	14.6540	F/A=	0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000				
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	
RHO, G/CC	1.8027-4	1.8905-4	1.9816-4	2.0767-4	2.1763-4	2.2813-4	2.3931-4	2.5130-4	2.6428-4	2.7847-4	2.9412-4	3.1153-4	3.3106-4	
M, MOL WT	27.613	27.922	28.185	28.401	28.572	28.704	28.801	28.869	28.915	28.944	28.962	28.972	28.977	
CP, CAL/(G)(K)	0.9229	0.8355	0.7507	0.6703	0.5966	0.5318	0.4772	0.4332	0.3991	0.3739	0.3557	0.3430	0.3340	
GAMMA (S)	1.1427	1.1460	1.1510	1.1581	1.1675	1.1789	1.1921	1.2061	1.2199	1.2326	1.2435	1.2524	1.2596	
SON VEL, M/SEC	981.6	959.9	939.6	920.7	903.0	886.2	870.1	854.1	837.6	820.2	801.6	781.7	760.4	

MOLE FRACTIONS

AR	0.00822	0.00841	0.00849	0.00856	0.00861	0.00865	0.00868	0.00870	0.00871	0.00872	0.00873	0.00873	0.00873	0.00873
CO	0.05697	0.04680	0.03696	0.02800	0.02031	0.01407	0.00929	0.00583	0.00345	0.00192	0.00100	0.00048	0.00021	
CO2	0.06990	0.08149	0.09254	0.10249	0.11097	0.11781	0.12304	0.12682	0.12940	0.13107	0.13207	0.13264	0.13293	
H	0.00713	0.00438	0.00259	0.00116	0.00079	0.00040	0.00019	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
H2	0.01152	0.00903	0.00689	0.00512	0.00371	0.00261	0.00177	0.00117	0.00073	0.00044	0.00025	0.00013	0.00007	
H2O	0.09697	0.10420	0.11012	0.11482	0.11843	0.12112	0.12307	0.12442	0.12532	0.12591	0.12626	0.12647	0.12658	
NO	0.01177	0.00942	0.00729	0.00545	0.00392	0.00271	0.00180	0.00113	0.00068	0.00039	0.00020	0.00010	0.00005	
N2	0.69101	0.70000	0.70769	0.71406	0.71915	0.72308	0.72598	0.72803	0.72942	0.73030	0.73084	0.73114	0.73130	
O	0.00661	0.00404	0.00234	0.00128	0.00066	0.00032	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	
OH	0.01727	0.01325	0.00978	0.00694	0.00472	0.00307	0.00191	0.00112	0.00062	0.00032	0.00016	0.00007	0.00003	
O2	0.02251	0.01896	0.01531	0.01183	0.00873	0.00616	0.00414	0.00264	0.00160	0.00091	0.00048	0.00024	0.00011	

ADD C(S)
ADD H2O(L)

CASE= 0 O/F= 11.1111 F/A= 0.09000 PERCENT FUEL= 8.2569 PHI= 1.3189
P, ATM 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000
P, PSIA 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0 147.0
T, DEG K 1500.0 1400.0 1300.0 1200.0 1100.0 1000.0 900.0 800.0 700.0 600.0 500.0 400.0 300.0
T, DEG F 2240.3 2060.3 1880.3 1700.3 1520.3 1340.3 1160.3 980.3 800.3 620.3 440.3 260.3 80.3
RHO, G/CC 2.2189-3 2.3774-3 2.5603-3 2.7737-3 3.0261-3 3.3320-3 3.7435-3 4.3151-3 5.0060-3 5.8750-3 7.0625-3 8.8309-3 1.4032-2
M, MOL WT 27.311 27.311 27.311 27.312 27.314 27.342 27.646 28.327 28.754 28.925 28.976 28.985 34.542
CP, CAL/(G)(K) 0.3403 0.3385 0.3369 0.3358 0.3370 0.3670 0.5562 0.5364 0.3768 0.3098 0.2828 0.2712 0.3749
GAMMA (S) 1.2719 1.2738 1.2755 1.2767 1.2766 1.2626 1.2077 1.2059 1.2572 1.2977 1.3230 1.3386 1.2039
SON VEL,M/SEC 762.1 736.8 710.5 682.9 653.8 619.6 571.7 532.1 504.4 473.1 435.7 391.9 294.8

MOLE FRACTIONS

AR 0.00806 0.00806 0.00806 0.00606 0.00807 0.00807 0.00816 0.00832 0.00835 0.00833 0.00826 0.00817 0.00806
C(S) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00488 0.01636 0.02474 0.03456 0.04540 0.05778
CH4 0.00000 0.00000 0.00000 0.00000 0.00004 0.00052 0.00606 0.01599 0.01774 0.01630 0.01213 0.00656 0.00000
CO 0.07610 0.07308 0.06941 0.06491 0.05930 0.05165 0.03521 0.01154 0.00178 0.00014 0.00000 0.00000 0.00000
CO2 0.08601 0.08903 0.09270 0.09721 0.10279 0.11012 0.12283 0.13492 0.13201 0.12603 0.11936 0.11229 0.10433
H2 0.03946 0.04248 0.04614 0.05062 0.05608 0.06185 0.05732 0.03380 0.01401 0.00399 0.00066 0.00004 0.00000
H2O(L) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.15156
H2O 0.11484 0.11182 0.10815 0.10365 0.09811 0.09147 0.08654 0.09325 0.11010 0.12262 0.13306 0.14315 0.00274
NH3 0.00000 0.00001 0.00001 0.00002 0.00004 0.00007 0.00014 0.00016 0.00013 0.00009 0.00005 0.00002 0.00000
N2 0.67552 0.67552 0.67552 0.67553 0.67558 0.67624 0.68374 0.69715 0.69952 0.69756 0.69192 0.68438 0.67552

CASE= 0 O/F= 11.1111 F/A= 0.09000 PERCENT FUEL= 8.2569 PHI= 1.3189
P, ATM 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000
P, PSIA 220.4 220.4 220.4 220.4 220.4 220.4 220.4 220.4 220.4 220.4 220.4 220.4 220.4
T, DEG K 2800.0 2700.0 2600.0 2500.0 2400.0 2300.0 2200.0 2100.0 2000.0 1900.0 1800.0 1700.0 1600.0
T, DEG F 4580.3 4400.3 4220.3 4040.3 3860.3 3680.3 3500.3 3320.3 3140.3 2960.3 2780.3 2600.3 2420.3
RHO, G/CC 1.7719-3 1.8420-3 1.9158-3 1.9943-3 2.0786-3 2.1697-3 2.2688-3 2.3771-3 2.4961-3 2.6276-3 2.7736-3 2.9367-3 3.1203-3
M, MOL WT 27.41 27.207 27.249 27.275 27.291 27.300 27.305 27.308 27.310 27.310 27.311 27.311 27.311
CP, CAL/(G)(K) 0.5061 0.4542 0.4172 0.3924 0.3762 0.3659 0.3591 0.3545 0.3512 0.3486 0.3464 0.3443 0.3423
GAMMA (S) 1.1992 1.2134 1.2266 1.2375 1.2457 1.2517 1.2560 1.2593 1.2618 1.2640 1.2661 1.2680 1.2700
SON VEL,M/SEC 1014.2 1000.6 986.5 971.1 954.4 936.4 917.3 897.3 876.5 855.1 832.9 810.1 786.5

MOLE FRACTIONS

AR 0.00801 0.00803 0.00805 0.00805 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806 0.00806
CO 0.09414 0.09230 0.09099 0.08998 0.08911 0.08827 0.08739 0.08641 0.08529 0.08400 0.08249 0.08071 0.07861
CO2 0.06696 0.06919 0.07075 0.07172 0.07288 0.07377 0.07469 0.07569 0.07681 0.07811 0.07962 0.08140 0.08350
H 0.00335 0.00232 0.00157 0.00104 0.00067 0.00041 0.00024 0.00014 0.00007 0.00004 0.00002 0.00001 0.00000
H2 0.02541 0.02530 0.02552 0.02596 0.02656 0.02729 0.02815 0.02913 0.03025 0.03156 0.03307 0.03485 0.03695
H2O 0.12391 0.12574 0.12672 0.12708 0.12699 0.12658 0.12592 0.12505 0.12399 0.12271 0.12122 0.11944 0.11735
NO 0.00212 0.00126 0.00070 0.00037 0.00018 0.00008 0.00004 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000
N2 0.67025 0.67231 0.67363 0.67444 0.67493 0.67520 0.67536 0.67544 0.67548 0.67551 0.67552 0.67552 0.67552
O 0.00038 0.00017 0.00007 0.00003 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000
OH 0.00047 0.00302 0.00185 0.00108 0.00060 0.00031 0.00015 0.00007 0.00003 0.00001 0.00000 0.00000 0.00000
O2 0.00076 0.00035 0.00015 0.00006 0.00002 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000

CASE=	0	0/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000										
P, ATH	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	3.7566-4	3.9043-4	4.0609-4	4.2280-4	4.4074-4	4.6012-4	4.8117-4	5.0417-4	5.2943-4	5.5732-4	5.8829-4	6.2291-4	6.6184-4						
M, MOL WT	28.771	28.834	28.880	28.911	28.933	28.946	28.955	28.959	28.962	28.964	28.964	28.964	28.964						
CP, CAL/(G)(K)	0.4495	0.4179	0.3921	0.3715	0.3552	0.3425	0.3325	0.3179	0.3123	0.3073	0.3027	0.2982							
GAMMA (S)	1.2095	1.2191	1.2289	1.2384	1.2473	1.2556	1.2630	1.2698	1.2760	1.2819	1.2876	1.2932	1.2988						
SON VEL, M/SEC	989.3	974.2	959.1	943.6	927.5	910.8	893.3	875.0	855.9	836.2	815.7	794.4	772.3						

MOLE FRACTIONS

AR	0.00926	0.00928	0.00930	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00005	0.00003	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00025	0.00026	0.00028	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03521	0.03098	0.02688	0.02298	0.01933	0.01599	0.01297	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207						
NO2	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002						
N2	0.75804	0.76187	0.76515	0.76796	0.77035	0.77239	0.77413	0.77560	0.77683	0.77785	0.77868	0.77935	0.77986						
O	0.01336	0.00900	0.00586	0.00368	0.00222	0.00128	0.00070	0.00036	0.00017	0.00008	0.00003	0.00001	0.00000						
O2	0.18379	0.18854	0.19248	0.19575	0.19845	0.20070	0.20256	0.20410	0.20537	0.20642	0.20726	0.20793	0.20844						

CASE=	0	0/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000										
P, ATH	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	7.0596-4	7.5639-4	8.1457-4	8.8245-4	9.6267-4	1.0589-3	1.1766-3	1.3237-3	1.5128-3	1.7649-3	2.1179-3	2.6474-3	3.5298-3						
M, MOL WT	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964						
CP, CAL/(G)(K)	0.2940	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402						
GAMMA (S)	1.3044	1.3102	1.3161	1.3223	1.3287	1.3357	1.3440	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999						
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.3	557.5	523.6	486.8	446.1	400.3	347.2						

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
CO2	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
NO2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089						
O2	0.20882	0.20909	0.20926	0.20937	0.20944	0.20947	0.20948	0.20948	0.20949	0.20949	0.20949	0.20949	0.20949						

ADD H2O(L)

	CASE= 0		O/F=100.0000		F/A= 0.01000		PERCENT FUEL= 0.9901		PHI= 0.1465											
P, ATH	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RHO, G/CC	9.4136-4	1.0086-3	1.0862-3	1.1767-3	1.2837-3	1.4120-3	1.5689-3	1.7651-3	2.0172-3	2.3534-3	2.8241-3	3.5301-3	4.7594-3	6.5301-3	9.4136-3	1.4379	1.3893	1.3521	1.3251	1.3000
M, MOL HT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G*IK)	0.2993	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2482	0.2418	0.2354	0.2290	0.2226	0.2162	0.2098	0.2034	0.1970	0.1906
GAMMA (S)	1.2974	1.3031	1.3090	1.3151	1.3215	1.3285	1.3369	1.3466	1.3574	1.3698	1.3839	1.4000	1.4190	1.4400	1.4630	1.4890	1.5180	1.5500	1.5850	1.6230
SON VEL, M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	447.9	409.4	370.9	332.4	293.9	255.4	216.9	178.4	139.9	101.4

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01961	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17641	0.17666	0.17663	0.17693	0.17699	0.17701	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

	CASE= 0		O/F=100.0000		F/A= 0.01000		PERCENT FUEL= 0.9901		PHI= 0.1465											
P, ATH	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3
RHO, G/CC	7.5020-4	7.7994-4	8.1144-4	8.4503-4	8.8106-4	9.1994-4	9.6216-4	1.0082-3	1.0589-3	1.1147-3	1.1766-3	1.2459-3	1.3238-3	1.4100-3	1.5000-3	1.6000-3	1.7200-3	1.8600-3	2.0200-3	2.2000-3
M, MOL HT	28.727	28.800	28.853	28.892	28.919	28.937	28.949	28.956	28.961	28.964	28.966	28.966	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G*IK)	0.4725	0.4399	0.4112	0.3881	0.3696	0.3548	0.3431	0.3337	0.3259	0.3194	0.3137	0.3086	0.3038	0.2994	0.2954	0.2918	0.2886	0.2856	0.2828	0.2802
GAMMA (S)	1.2011	1.2099	1.2193	1.2287	1.2378	1.2464	1.2543	1.2615	1.2682	1.2744	1.2804	1.2861	1.2918	1.2976	1.3034	1.3092	1.3150	1.3208	1.3266	1.3324
SON VEL, M/SEC	986.6	971.1	955.8	940.2	924.2	907.6	890.2	872.2	853.3	833.7	813.4	792.2	770.2	747.4	723.6	698.9	673.0	645.9	617.5	587.7

MOLE FRACTIONS

AR	0.00915	0.00918	0.00919	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00279	0.00188	0.00120	0.00074	0.00043	0.00024	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01792	0.01889	0.01960	0.02009	0.02042	0.02062	0.02075	0.02082	0.02085	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00061	0.00036	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00034	0.00024	0.00016	0.00011	0.00006	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.1493	0.15597	0.1684	0.1756	0.1813	0.1858	0.1891	0.1916	0.1933	0.1945	0.1953	0.1957	0.1960	0.1962	0.1964	0.1966	0.1968	0.1970	0.1972	0.1974
NO	0.03217	0.02827	0.02451	0.02096	0.01764	0.01459	0.01184	0.00941	0.00729	0.00550	0.00401	0.00281	0.00199	0.00141	0.00100	0.00074	0.00056	0.00044	0.00036	0.00030
NO2	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
O	0.75073	0.75461	0.75792	0.76073	0.76310	0.76511	0.76681	0.76823	0.76942	0.77039	0.77118	0.77180	0.77227	0.77267	0.77300	0.77328	0.77352	0.77373	0.77391	0.77406
OH	0.00867	0.00583	0.00380	0.00238	0.00144	0.00083	0.00045	0.00023	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00776	0.00624	0.00488	0.00370	0.00273	0.00195	0.00134	0.00088	0.00056	0.00034	0.00019	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.15487	0.15849	0.16165	0.16438	0.16674	0.16876	0.17048	0.17193	0.17314	0.17414	0.17494	0.17558	0.17606	0.17648	0.17685	0.17718	0.17747	0.17772	0.17794	0.17812

ADD H20(L)

CASE=	0	0/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	2.3536-3	2.5217-3	2.7157-3	2.9420-3	3.2095-3	3.5304-3	3.9227-3	4.4130-3	5.0435-3	5.8840-3	7.0609-3	8.8261-3	1.2202-2
M, MOL WT	28.969	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.969	28.970	28.970	28.970	30.037
CP, CAL/(G)(K)	0.3043	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.3278
GAMMA (S)	1.2911	1.2966	1.3023	1.3083	1.3147	1.3218	1.3301	1.3399	1.3508	1.3623	1.3737	1.3837	1.2884
SON VEL./M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	327.1

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H20(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03552
H2O	0.03885	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03334
HO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14487	0.14562	0.14512	0.14517	0.14519	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

CASE=	0	0/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3
RHO, G/CC	1.8776-3	1.9514-3	2.0297-3	2.1134-3	2.2032-3	2.3003-3	2.4057-3	2.5209-3	2.6473-3	2.7869-3	2.9419-3	3.1150-3	3.3098-3
M, MOL WT	28.759	28.822	28.869	28.903	28.926	28.942	28.953	28.960	28.964	28.967	28.968	28.969	28.969
CP, CAL/(G)(K)	0.4623	0.4324	0.4073	0.3867	0.3700	0.3567	0.3460	0.3374	0.3302	0.3240	0.3185	0.3135	0.3088
GAMMA (S)	1.2022	1.2106	1.2194	1.2280	1.2363	1.2440	1.2511	1.2576	1.2637	1.2695	1.2750	1.2803	1.2854
SON VEL./M/SEC	986.5	971.0	955.6	939.8	923.5	906.6	889.1	870.8	851.8	832.1	811.6	790.4	768.4

MOLE FRACTIONS

AR	0.00908	0.00909	0.00911	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00399	0.00265	0.00169	0.00102	0.00059	0.00032	0.00017	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000
CO2	0.03678	0.03820	0.03923	0.03994	0.04041	0.04070	0.04087	0.04097	0.04102	0.04104	0.04106	0.04106	0.04106
H	0.00048	0.00028	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00053	0.00036	0.00024	0.00015	0.00009	0.00005	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.03340	0.03467	0.03572	0.03655	0.03721	0.03771	0.03809	0.03836	0.03855	0.03868	0.03876	0.03881	0.03884
NO	0.02306	0.02549	0.02208	0.01886	0.01587	0.01313	0.01066	0.00847	0.00657	0.00495	0.00361	0.00254	0.00170
NO2	0.00005	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00002	0.00002
N2	0.74560	0.74905	0.75199	0.75449	0.75661	0.75841	0.75993	0.76121	0.76227	0.76315	0.76386	0.76442	0.76485
O	0.00497	0.00334	0.00217	0.00136	0.00082	0.00047	0.00026	0.00013	0.00006	0.00003	0.00001	0.00000	0.00000
OH	0.00879	0.00696	0.00537	0.00404	0.00296	0.00210	0.00144	0.00095	0.00060	0.00036	0.00020	0.00011	0.00005
O2	0.12724	0.12982	0.13217	0.13430	0.13620	0.13789	0.13936	0.14063	0.14171	0.14260	0.14332	0.14389	0.14433

ADD H2O(L)

CASE=	0	O/F= 33.3333	F/A= 0.03000	PERCENT FUEL= 2.9126				PHI= 0.4396					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	4.7076-3	5.0439-3	5.4319-3	5.8846-3	6.4195-3	7.0615-3	7.8461-3	8.8268-3	1.0088-2	1.1769-2	1.4123-2	1.7654-2	2.4937-2
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	30.694
CP, CAL/(G)(K)	0.3091	0.3047	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.3003
GAMMA (S)	1.2852	1.2905	1.2961	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.2941
SON VEL./M/SEC	743.8	720.1	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	324.3

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05610
H2O	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.00164
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11350	0.11370	0.11363	0.11392	0.11396	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	O/F= 33.3333	F/A= 0.03000	PERCENT FUEL= 2.9126				PHI= 0.4396					
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	3.7575-3	3.9046-3	4.0609-3	4.2279-3	4.4073-3	4.6013-3	4.8121-3	5.0423-3	5.2952-3	5.5743-3	5.8843-3	6.2306-3	6.6201-3
M, MOL WT	28.778	28.836	28.879	28.910	28.932	28.947	28.957	28.963	28.967	28.969	28.971	28.972	28.972
CP, CAL/(G)(K)	0.4584	0.4300	0.4063	0.3869	0.3713	0.3589	0.3489	0.3408	0.3341	0.3282	0.3230	0.3181	0.3136
GAMMA (S)	1.2021	1.2103	1.2187	1.2268	1.2345	1.2417	1.2482	1.2541	1.2597	1.2649	1.2700	1.2751	1.2801
SON VEL./M/SEC	986.2	970.7	955.1	939.2	922.7	905.7	887.9	869.5	850.4	830.5	810.0	788.7	766.7

MOLE FRACTIONS

AR	0.00899	0.00901	0.00902	0.00903	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.00482	0.00319	0.00202	0.00122	0.00070	0.00039	0.00020	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000
CO2	0.05563	0.05738	0.05864	0.05951	0.06007	0.06042	0.06063	0.06074	0.06080	0.06083	0.06085	0.06085	0.06085
H	0.00038	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00004	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.00066	0.00045	0.00029	0.00019	0.00011	0.00007	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.05214	0.05348	0.05456	0.05542	0.05609	0.05660	0.05697	0.05724	0.05743	0.05756	0.05764	0.05769	0.05771
NO	0.02560	0.02243	0.01942	0.01659	0.01396	0.01155	0.00938	0.00746	0.00578	0.00436	0.00318	0.00224	0.00150
NO2	0.00006	0.00006	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00002
N2	0.74043	0.74354	0.74618	0.74841	0.75030	0.75189	0.75324	0.75437	0.75531	0.75608	0.75671	0.75720	0.75758
O	0.00311	0.00209	0.00136	0.00085	0.00051	0.00030	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000
OH	0.00868	0.00683	0.00525	0.00393	0.00287	0.00203	0.00139	0.00091	0.00058	0.00035	0.00020	0.00010	0.00005
O2	0.09946	0.10129	0.10305	0.10471	0.10624	0.10764	0.10889	0.10998	0.11091	0.11169	0.11233	0.11283	0.11322

ADD H2O(L)

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862									
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0
RHO, G/CC	9.4161-3	1.0089-2	1.0865-2	1.1770-2	1.2840-2	1.4124-2	1.5693-2	1.7655-2	2.0177-2	2.3540-2	2.8248-2	3.5983-2	5.0923-2				
M, MOL WT	28.975	28.975	28.975	28.975	28.975	28.975	28.974	28.974	28.974	28.974	28.974	29.526	31.339				
CP, CAL/(G)(K)	0.3138	0.3094	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2584	0.2911				
GAMMA (S)	1.2798	1.2848	1.2902	1.2960	1.3024	1.3094	1.3179	1.3276	1.3385	1.3503	1.3622	1.2143	1.2882				
SON VEL, M/SEC	742.2	718.5	693.8	668.0	641.2	613.0	583.4	552.1	518.5	482.2	442.1	369.8	320.2				

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01868	0.07545				
H2O	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.05757	0.00080				
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75071	0.75087	0.75098	0.75105	0.75109	0.75111	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08313	0.08324	0.08331	0.08335	0.08337	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862									
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3				
RHO, G/CC	6.2637-3	6.5089-3	6.7693-3	7.0475-3	7.3466-3	7.6698-3	8.0210-3	8.4047-3	8.8261-3	9.2914-3	9.8080-3	1.0385-2	1.1034-2				
M, MOL WT	28.783	28.841	28.884	28.915	28.936	28.950	28.960	28.966	28.970	28.972	28.973	28.974	28.974				
CP, CAL/(G)(K)	0.4610	0.4324	0.4085	0.3891	0.3737	0.3616	0.3520	0.3442	0.3378	0.3322	0.3272	0.3226	0.3181				
GAMMA (S)	1.2906	1.2088	1.2170	1.2250	1.2324	1.2392	1.2453	1.2509	1.2560	1.2608	1.2655	1.2702	1.2749				
SON VEL, M/SEC	985.4	970.0	954.4	938.4	921.9	904.7	886.9	868.3	849.1	829.2	808.5	787.2	765.1				

MOLE FRACTIONS

AR	0.00891	0.00893	0.00894	0.00895	0.00896	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.00583	0.00385	0.00243	0.00147	0.00085	0.00046	0.00024	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.07392	0.07066	0.07759	0.07864	0.07932	0.07974	0.07999	0.08013	0.08021	0.08024	0.08026	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H	0.00033	0.00019	0.00010	0.00005	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H02	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00081	0.00055	0.00036	0.00023	0.00014	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07065	0.07202	0.07312	0.07399	0.07465	0.07515	0.07551	0.07578	0.07596	0.07608	0.07616	0.07620	0.07623				
NO	0.02174	0.01902	0.01646	0.01406	0.01183	0.00980	0.00796	0.00633	0.00491	0.00371	0.00271	0.00190	0.00128				
NO2	0.00005	0.00005	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00002	0.00002				
N2	0.73526	0.73813	0.74052	0.74252	0.74418	0.74558	0.74674	0.74772	0.74852	0.74919	0.74972	0.75015	0.75047				
O	0.00205	0.00138	0.00089	0.00056	0.00034	0.00020	0.00011	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00021	0.00064	0.00093	0.00069	0.00069	0.00190	0.00130	0.00085	0.00054	0.00032	0.00018	0.00010	0.00005				
O2	0.07220	0.07336	0.07457	0.07578	0.07696	0.07807	0.07908	0.07998	0.08076	0.08142	0.08196	0.08239	0.08272				

ADD H2O(L)

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=				6.3882	PHI=				1.0000
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0		
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	3.5316-4	3.7840-4	4.0752-4	4.4148-4	4.8161-4	5.2978-4	5.8864-4	6.5222-4	7.2682-4	8.0296-4	1.0596-3	1.3244-3	1.9753-3		
M, MOL WT	28.979	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	32.418	
CP, CAL/(G*IK)	0.3274	0.3220	0.3171	0.3123	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.2590	0.7396	
GAMMA (S)	1.2655	1.2708	1.2759	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.1664		
SON VEL,M/SEC	738.0	714.4	689.8	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	299.6		

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13307	0.13313	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.12664	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73138	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
O	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
02	0.00004	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=				6.3882	PHI=				1.0000
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0		
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3		
RHO, G/CC	2.4134-4	2.5286-4	2.6485-4	2.7737-4	2.9053-4	3.0444-4	3.1925-4	3.3518-4	3.5245-4	3.7134-4	3.9219-4	4.1539-4	4.4142-4		
M, MOL WT	27.725	28.010	28.252	28.451	28.608	28.728	28.817	28.879	28.921	28.947	28.963	28.973	28.977		
CP, CAL/(G*IK)	0.8786	0.7973	0.7184	0.6438	0.5756	0.5158	0.4656	0.4251	0.3938	0.3706	0.3538	0.3420	0.3335		
GAMMA (S)	1.1452	1.1488	1.1542	1.1616	1.1711	1.1826	1.1956	1.2091	1.2224	1.2345	1.2448	1.2532	1.2600		
SON VEL,M/SEC	980.6	959.5	939.7	921.2	903.8	887.3	871.1	855.0	838.4	820.8	802.0	781.9	760.6		

MOLE FRACTIONS

AR	0.00835	0.00844	0.00851	0.00857	0.00862	0.00866	0.00868	0.00870	0.00871	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.05370	0.04379	0.03436	0.02589	0.01870	0.01291	0.00851	0.00532	0.00315	0.00175	0.00091	0.00043	0.00019		
CO2	0.07368	0.08491	0.09545	0.10483	0.11275	0.11908	0.12390	0.12737	0.12973	0.13125	0.13217	0.13269	0.13295		
H	0.00592	0.00363	0.00214	0.00121	0.00065	0.00033	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000		
H02	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		
H2	0.01058	0.00826	0.00629	0.00467	0.00338	0.00238	0.00162	0.00106	0.00067	0.00040	0.00023	0.00012	0.00006		
H2O	0.09962	0.10624	0.11163	0.11591	0.11919	0.12163	0.12340	0.12462	0.12545	0.12598	0.12630	0.12649	0.12659		
NO	0.01142	0.00910	0.00701	0.00522	0.00375	0.00259	0.00171	0.00108	0.00065	0.00037	0.00019	0.00010	0.00004		
N2	0.69400	0.70238	0.70953	0.71543	0.72014	0.72376	0.72643	0.72831	0.72958	0.73040	0.73089	0.73117	0.73131		
O	0.00555	0.00337	0.00195	0.00106	0.00054	0.00028	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000		
0	0.01603	0.01223	0.00899	0.00635	0.00431	0.00280	0.00173	0.00102	0.00057	0.00029	0.00014	0.00006	0.00003		
02	0.02112	0.01764	0.01413	0.01085	0.00798	0.00560	0.00375	0.00239	0.00144	0.00082	0.00044	0.00021	0.00010		

ADD H2O(L)
ADD C(S)

CASE= 0 O/F= 14.2857 F/A= 0.07000 PERCENT FUEL= 6.5421 PHI= 1.0258
P, ATM 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000
P, PSIA 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1 44.1
T, DEG K 1500.0 1400.0 1300.0 1200.0 1100.0 1000.0 900.0 800.0 700.0 600.0 500.0 400.0 300.0
T, DEG F 2240.3 2060.3 1880.3 1700.3 1520.3 1340.3 1160.3 980.3 800.3 620.3 440.3 260.3 80.3
RHO, G/CC 7.0283-4 7.5303-4 8.1095-4 8.7853-4 9.5840-4 1.0542-3 1.1714-3 1.3178-3 1.5066-3 1.7623-3 2.1183-3 2.6488-3 4.0114-3
M, MOL WT 28.836 28.836 28.836 28.836 28.836 28.836 28.836 28.836 28.836 28.922 28.970 28.981 32.917
CP, CAL/(G)(K) 0.3262 0.3226 0.3188 0.3146 0.3101 0.3052 0.2994 0.2927 0.2949 0.2951 0.2720 0.2599 0.5144
GAMMA (S) 1.2679 1.2716 1.2758 1.2804 1.2857 1.2917 1.2990 1.3081 1.3112 1.3150 1.3404 1.3587 1.1892
SON VEL, M/SEC 740.5 716.5 691.5 665.6 638.6 610.3 580.6 549.3 514.3 476.3 438.6 394.9 300.2

MOLE FRACTIONS

AR 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867 0.00868 0.00870 0.00871 0.00872 0.00867
C(S) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00501
CH4 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00017 0.00148 0.00232 0.00251 0.00001
CO 0.00727 0.00692 0.00647 0.00590 0.00517 0.00427 0.00321 0.00207 0.00099 0.00015 0.00001 0.00000 0.00000
CO2 0.12840 0.12876 0.12921 0.12978 0.13050 0.13140 0.13247 0.13360 0.13457 0.13445 0.13398 0.13385 0.13066
H2 0.00278 0.00313 0.00353 0.00415 0.00488 0.00578 0.00684 0.00796 0.00837 0.00398 0.00076 0.00006 0.00000
H2O(L) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.11895
H2O 0.12630 0.12595 0.12550 0.12493 0.12420 0.12330 0.12224 0.12111 0.12040 0.12249 0.12424 0.12464 0.01012
NH3 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00001 0.00002 0.00003 0.00002 0.00001 0.00000
N2 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657

CASE= 0 O/F= 14.2857 F/A= 0.07000 PERCENT FUEL= 6.5421 PHI= 1.0258
P, ATM 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000
P, PSIA 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8
T, DEG K 2800.0 2700.0 2600.0 2500.0 2400.0 2300.0 2200.0 2100.0 2000.0 1900.0 1800.0 1700.0 1600.0
T, DEG F 4580.3 4400.3 4220.3 4040.3 3860.3 3680.3 3500.3 3320.3 3140.3 2960.3 2780.3 2600.3 2420.3
RHO, G/CC 4.8580-4 5.0804-4 5.3127-4 5.5563-4 5.8131-4 6.0852-4 6.3756-4 6.6876-4 7.0260-4 7.3974-4 7.8089-4 8.2685-4 8.7853-4
M, MOL WT 27.904 28.139 28.336 28.496 28.620 28.712 28.774 28.810 28.827 28.833 28.835 28.836 28.836
CP, CAL/(G)(K) 0.7874 0.7178 0.6501 0.5859 0.5266 0.4729 0.4248 0.3841 0.3568 0.3432 0.3368 0.3328 0.3295
GAMMA (S) 1.1516 1.1560 1.1623 1.1707 1.1813 1.1944 1.2102 1.2280 1.2434 1.2526 1.2577 1.2613 1.2645
SON VEL, M/SEC 980.2 960.3 941.7 924.1 907.5 891.9 877.1 862.7 846.9 828.4 807.9 786.3 763.8

MOLE FRACTIONS

AR 0.00839 0.00846 0.00852 0.00857 0.00861 0.00864 0.00866 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867
CO 0.04924 0.04024 0.03200 0.02484 0.01897 0.01448 0.01136 0.00950 0.00861 0.00822 0.00799 0.00779 0.00756
CO2 0.08205 0.09216 0.10133 0.10924 0.11569 0.12061 0.12403 0.12605 0.12702 0.12744 0.12768 0.12789 0.12812
H 0.00394 0.00243 0.00145 0.00083 0.00046 0.00025 0.00013 0.00007 0.00004 0.00002 0.00001 0.00000 0.00000
H02 0.00001 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000
H2 0.00937 0.00741 0.00578 0.00446 0.00345 0.00270 0.00220 0.00195 0.00189 0.00196 0.00209 0.00227 0.00250
H2O 0.10709 0.11250 0.11687 0.12029 0.12288 0.12475 0.12600 0.12671 0.12701 0.12705 0.12696 0.12680 0.12658
NO 0.00984 0.00761 0.00566 0.00401 0.00268 0.00165 0.00091 0.00042 0.00016 0.00005 0.00002 0.00000 0.00000
O 0.69817 0.70521 0.71115 0.71599 0.71979 0.72261 0.72455 0.72570 0.72626 0.72647 0.72654 0.72656 0.72657
OH 0.00337 0.00199 0.00111 0.00058 0.00028 0.00012 0.00004 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000
O2 0.01295 0.00967 0.00694 0.00477 0.00311 0.00190 0.00107 0.00054 0.00024 0.00010 0.00003 0.00001 0.00000

ADD C1S)
ADD H2O(L)

CASE=	0	0/F=	12.5000	F/A=	0.08000	PERCENT FUEL=	7.4074	PHI=	1.1723									
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	1.3671-3	1.4648-3	1.5775-3	1.7089-3	1.8643-3	2.0508-3	2.2806-3	2.5898-3	3.0001-3	3.5235-3	4.2370-3	5.2981-3	8.2330-3					
M, MOL WT	28.046	28.046	28.046	28.046	28.046	28.046	28.046	28.046	28.721	28.913	28.973	28.983	33.778					
CP, CAL/(G) (K)	0.3338	0.3313	0.3289	0.3266	0.3246	0.3238	0.3481	0.4527	0.3763	0.3107	0.2800	0.2676	0.4106					
GAMMA (S)	1.2695	1.2721	1.2746	1.2771	1.2793	1.2809	1.2692	1.2308	1.2607	1.2989	1.3277	1.3447	1.2024					
SON VEL, M/SEC	751.4	726.6	700.9	674.0	645.9	616.2	581.7	537.5	505.4	473.4	436.5	392.8	298.0					

MOLE FRACTIONS

AR	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00837	0.00844	0.00856	0.00858	0.00852	0.00844	0.00836					
C1S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00426	0.01301	0.02234	0.03236					
C14	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00043	0.00511	0.01199	0.01323	0.00979	0.00516	0.00000				
C0	0.04458	0.04259	0.04013	0.03708	0.03328	0.02854	0.02225	0.01088	0.00222	0.00020	0.00001	0.00000	0.00000					
C02	0.10480	0.10679	0.10925	0.11230	0.11610	0.12083	0.12684	0.13493	0.13876	0.13565	0.12951	0.12342	0.11701					
H2	0.02015	0.02214	0.02460	0.02765	0.03143	0.03609	0.04076	0.03394	0.01598	0.00470	0.00078	0.00005	0.00000					
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13735					
H20	0.12200	0.12001	0.11755	0.11450	0.11070	0.10600	0.10059	0.09932	0.10548	0.11466	0.12453	0.13322	0.00480					
NH3	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00005	0.00010	0.00010	0.00007	0.00004	0.00001	0.00000					
N2	0.70012	0.70012	0.70012	0.70012	0.70012	0.70014	0.70072	0.70729	0.71692	0.71866	0.71383	0.70735	0.70012					

CASE=	0	0/F=	12.5000	F/A=	0.08000	PERCENT FUEL=	7.4074	PHI=	1.1723									
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000					
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0					
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4880.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC	1.2057-3	1.2563-3	1.3088-3	1.3639-3	1.4223-3	1.4851-3	1.5531-3	1.6273-3	1.7088-3	1.7988-3	1.8988-3	2.0105-3	2.1362-3					
M, MOL WT	27.701	27.833	27.923	27.979	28.011	28.028	28.037	28.042	28.044	28.045	28.045	28.046	28.046					
CP, CAL/(G) (K)	0.6260	0.5488	0.4798	0.4268	0.3919	0.3709	0.3587	0.3515	0.3470	0.3437	0.3410	0.3386	0.3362					
GAMMA (S)	1.1714	1.1836	1.1993	1.2163	1.2310	1.2418	1.2490	1.2539	1.2573	1.2600	1.2624	1.2647	1.2671					
SON VEL, M/SEC	992.2	977.0	963.6	950.6	936.4	920.5	902.7	883.6	863.4	842.5	820.8	798.4	775.2					

MOLE FRACTIONS

AR	0.00826	0.00829	0.00832	0.00834	0.00835	0.00835	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836					
C0	0.06515	0.06039	0.05699	0.05479	0.05343	0.05252	0.05181	0.05114	0.05043	0.04962	0.04868	0.04755	0.04621					
C02	0.08240	0.08785	0.09173	0.09423	0.09576	0.09676	0.09752	0.09822	0.09894	0.09975	0.10070	0.10182	0.10317					
H	0.00304	0.00203	0.00134	0.00087	0.00055	0.00034	0.00020	0.00011	0.00006	0.00003	0.00001	0.00001	0.00000					
H2	0.01396	0.01292	0.01234	0.01217	0.01230	0.01261	0.01307	0.01363	0.01431	0.01511	0.01605	0.01717	0.01852					
H20	0.12113	0.12457	0.12688	0.12823	0.12885	0.12899	0.12879	0.12837	0.12777	0.12701	0.12609	0.12497	0.12363					
N0	0.00469	0.00303	0.00180	0.00098	0.00049	0.00023	0.00010	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000					
N2	0.68918	0.69329	0.69615	0.69796	0.69900	0.69956	0.69985	0.70000	0.70006	0.70009	0.70011	0.70011	0.70012					
O	0.00102	0.00051	0.00023	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
OH	0.00759	0.00513	0.00326	0.00195	0.00109	0.00058	0.00028	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000					
O2	0.00359	0.00199	0.00095	0.00039	0.00014	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					

ADD H20(L)

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465										
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	1.4120-3	1.5129-3	1.6293-3	1.7651-3	1.9255-3	2.1181-3	2.3534-3	2.6476-3	3.0258-3	3.5301-3	4.2361-3	5.2952-3	7.1599-3		
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G)(K)	0.2993	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2399	0.2350	0.2300
GAMMA (S)	1.2974	1.3031	1.3090	1.3151	1.3215	1.3285	1.3369	1.3466	1.3574	1.3688	1.3799	1.3893	1.3971	1.4035	1.4085
SON VEL, M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	329.3		

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H20(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01961	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17641	0.17666	0.17663	0.17693	0.17699	0.17701	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465										
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3
RHO, G/CC	1.2524-3	1.3014-3	1.3534-3	1.4091-3	1.4689-3	1.5335-3	1.6038-3	1.6805-3	1.7648-3	1.8578-3	1.9611-3	2.0765-3	2.2063-3		
M, MOL WT	28.774	28.832	28.875	28.906	28.928	28.942	28.952	28.958	28.962	28.965	28.965	28.965	28.967	28.967	28.967
CP, CAL/(G)(K)	0.4477	0.4204	0.3975	0.3785	0.3630	0.3505	0.3404	0.3320	0.3250	0.3189	0.3134	0.3084	0.3037	0.2990	0.2940
GAMMA (S)	1.2077	1.2160	1.2245	1.2330	1.2412	1.2489	1.2560	1.2627	1.2689	1.2749	1.2806	1.2862	1.2918	1.2971	1.2990
SON VEL, M/SEC	988.5	973.0	957.5	941.6	925.3	908.4	890.8	872.5	853.6	833.9	813.4	792.2	770.2		

MOLE FRACTIONS

AR	0.00917	0.00919	0.00920	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00222	0.00148	0.00094	0.00057	0.00033	0.00018	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01852	0.01930	0.01987	0.02026	0.02052	0.02068	0.02078	0.02083	0.02086	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00042	0.00025	0.00014	0.00007	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2O	0.00027	0.00019	0.00013	0.00008	0.00005	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01551	0.01642	0.01719	0.01781	0.01832	0.01871	0.01900	0.01922	0.01937	0.01947	0.01954	0.01958	0.01960	0.01960	0.01960
NO	0.03230	0.02835	0.02456	0.02098	0.01765	0.01460	0.01185	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189	0.00118	0.00072
NO2	0.00005	0.00005	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00003	0.00003	0.00003	0.00002	0.00002	0.00001	0.00000
N2	0.75192	0.75544	0.75847	0.76109	0.76333	0.76525	0.76689	0.76828	0.76944	0.77040	0.77118	0.77180	0.77227	0.77257	0.77277
O	0.00674	0.00453	0.00295	0.00185	0.00111	0.00064	0.00035	0.00018	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
OH	0.00697	0.00557	0.00434	0.00329	0.00242	0.00172	0.00118	0.00078	0.00049	0.00030	0.00017	0.00009	0.00004	0.00002	0.00001
O2	0.15588	0.15921	0.16214	0.16471	0.16695	0.16889	0.17056	0.17198	0.17317	0.17415	0.17495	0.17557	0.17606	0.17646	0.17676

ADD H2O(L)

CASE=	0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931										
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	3.5304-3	3.7826-3	4.0736-3	4.4130-3	4.8142-3	5.2956-3	5.8840-3	6.6195-3	7.5652-3	8.8261-3	1.0591-2	1.3239-2	1.8323-2					
M, MOL WT	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.969	28.970	28.970	28.970	30.071					
CP, CAL/(G)(K)	0.3043	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.3043					
GAMMA (S)	1.2911	1.2966	1.3023	1.3083	1.3147	1.3218	1.3301	1.3399	1.3508	1.3623	1.3737	1.3837	1.3037					
SON VEL,M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	328.8					

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03664					
H2	0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.00223					
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
NO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
N2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572					
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
O2	0.14465	0.14487	0.14562	0.14511	0.14517	0.14519	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521					

CASE=	0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931										
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9					
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC	2.5055-3	2.6033-3	2.7073-3	2.8185-3	2.9381-3	3.0673-3	3.2078-3	3.3613-3	3.5298-3	3.7159-3	3.9225-3	4.1534-3	4.4130-3					
M, MOL WT	28.783	28.839	28.880	28.910	28.931	28.945	28.955	28.961	28.965	28.967	28.968	28.969	28.969					
CP, CAL/(G)(K)	0.4495	0.4228	0.4002	0.3817	0.3666	0.3545	0.3446	0.3365	0.3296	0.3237	0.3183	0.3134	0.3087					
GAMMA (S)	1.2057	1.2138	1.2221	1.2302	1.2380	1.2453	1.2520	1.2582	1.2641	1.2697	1.2751	1.2804	1.2857					
SON VEL,M/SEC	987.5	972.0	956.4	940.5	924.1	907.0	889.3	871.0	851.9	832.1	811.6	790.4	768.4					

MOLE FRACTIONS

AR	0.00908	0.00910	0.00911	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00350	0.00232	0.00147	0.00089	0.00051	0.00028	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000					
CO2	0.03730	0.03856	0.03947	0.04009	0.04049	0.04075	0.04090	0.04098	0.04102	0.04105	0.04106	0.04106	0.04106					
H	0.00039	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
H2	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000					
H2	0.00046	0.00032	0.00021	0.00013	0.00008	0.00005	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000					
H2O	0.03382	0.03499	0.03595	0.03673	0.03733	0.03780	0.03814	0.03840	0.03857	0.03869	0.03877	0.03882	0.03884					
NO	0.02910	0.02551	0.02209	0.01887	0.01588	0.01314	0.01066	0.00847	0.00657	0.00495	0.00361	0.00254	0.00170					
NO2	0.00006	0.00006	0.00006	0.00005	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00003	0.00003	0.00002					
N2	0.74620	0.74947	0.75227	0.75467	0.75673	0.75848	0.75997	0.76123	0.76229	0.76316	0.76386	0.76442	0.76485					
O	0.00431	0.00289	0.00188	0.00118	0.00071	0.00041	0.00022	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000					
OH	0.00823	0.00650	0.00502	0.00377	0.00276	0.00195	0.00134	0.00088	0.00056	0.00033	0.00019	0.00010	0.00005					
O2	0.12750	0.13091	0.13231	0.13440	0.13627	0.13794	0.13939	0.14065	0.14171	0.14260	0.14332	0.14389	0.14432					

ADD H2O(L)

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862									
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0
RHO, G/CC	1.1770-2	1.2611-2	1.3581-2	1.4713-2	1.6050-2	1.7655-2	1.9617-2	2.2069-2	2.5222-2	2.9425-2	3.5310-2	4.5539-2	6.3664-2				
M, MOL WT	28.975	28.975	28.975	28.975	28.975	28.975	28.974	28.974	28.974	28.974	28.974	29.894	31.344				
CP, CAL/(G*1K)	0.3138	0.3094	0.3009	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2580	0.2580				
GAMMA (S)	1.2798	1.2848	1.2902	1.2960	1.3024	1.3094	1.3179	1.3276	1.3385	1.3503	1.3622	1.2199	1.2905				
SON VEL, M/SEC	742.2	718.5	693.8	668.0	641.2	613.0	583.4	552.1	518.5	482.2	442.1	368.4	320.5				

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.04549	0.00064				
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75071	0.75087	0.75099	0.75105	0.75109	0.75111	0.75111	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08313	0.08324	0.08331	0.08335	0.08337	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

	CASE= 0	O/F= 20.0000	F/A= 0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327									
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	5.9952-5	6.3023-5	6.6176-5	6.9419-5	7.2772-5	7.6269-5	7.9961-5	8.3911-5	8.8192-5	9.2882-5	9.8068-5	1.0385-4	1.1035-4				
M, MOL WT	27.549	27.926	28.237	28.482	28.663	28.789	28.870	28.919	28.947	28.962	28.970	28.974	28.975				
CP, CAL/(G*1K)	1.0343	0.9169	0.8009	0.6901	0.5900	0.5067	0.4433	0.3988	0.3695	0.3507	0.3386	0.3303	0.3241				
GAMMA (S)	1.1780	1.1413	1.1471	1.1562	1.1691	1.1854	1.2034	1.2207	1.2356	1.2472	1.2561	1.2630	1.2688				
SON VEL, M/SEC	980.7	957.8	937.1	918.6	902.2	887.4	873.2	858.5	842.5	824.8	805.5	785.0	763.2				

MOLE FRACTIONS

AR	0.00844	0.00856	0.00866	0.00873	0.00879	0.00882	0.00885	0.00886	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.04465	0.03529	0.02609	0.01791	0.01135	0.00663	0.00356	0.00176	0.00080	0.00033	0.00012	0.00004	0.00001				
CO2	0.04978	0.06043	0.07070	0.07972	0.08689	0.09205	0.09539	0.09736	0.09842	0.09894	0.09917	0.09927	0.09931				
H	0.01056	0.00636	0.00363	0.00195	0.00098	0.00046	0.00020	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00843	0.00634	0.00452	0.00305	0.00194	0.00116	0.00065	0.00034	0.00017	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.06443	0.07200	0.07824	0.08314	0.08682	0.08946	0.09129	0.09251	0.09329	0.09378	0.09407	0.09424	0.09433				
N	0.01861	0.01615	0.01377	0.01156	0.00959	0.00785	0.00634	0.00503	0.00390	0.00294	0.00215	0.00151	0.00102				
N2	0.69805	0.70897	0.71814	0.72553	0.73117	0.73527	0.73811	0.74003	0.74131	0.74218	0.74277	0.74319	0.74348				
O	0.01803	0.01191	0.00759	0.00467	0.00276	0.00157	0.00086	0.00044	0.00021	0.00010	0.00004	0.00001	0.00000				
OH	0.02324	0.01893	0.01486	0.01128	0.00828	0.00589	0.00404	0.00267	0.00169	0.00101	0.00057	0.00030	0.00015				
O2	0.05576	0.05505	0.05380	0.05247	0.05141	0.05083	0.05070	0.05091	0.05131	0.05176	0.05218	0.05253	0.05281				

ADD H2O ILI

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
F, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	2.3544-4	2.5226-4	2.7166-4	2.9430-4	3.2106-4	3.5316-4	3.9240-4	4.4145-4	5.0452-4	5.8860-4	7.0632-4	8.8290-4	1.2801-3						
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)	0.3229	0.3184	0.3138	0.3090	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.2512						
GAMMA (S)	1.2697	1.2746	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.3764						
SON VEL, M/SEC	739.2	715.5	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	302.5						

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00990	0.00880	0.00880	0.00890	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11662	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O ILI	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.11221	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73684	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02381	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
F, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	1.8166-4	1.9040-4	1.9946-4	2.0888-4	2.1871-4	2.2906-4	2.4004-4	2.5184-4	2.6465-4	2.7870-4	2.9425-4	3.1159-4	3.3108-4						
M, MOL WT	27.826	28.123	28.370	28.566	28.715	28.820	28.889	28.931	28.955	28.967	28.974	28.977	28.978						
CP, CAL/(G)(K)	0.8920	0.8032	0.7152	0.6301	0.5517	0.4842	0.4309	0.3926	0.3670	0.3507	0.3402	0.3331	0.3276						
GAMMA (S)	1.1444	1.1482	1.1544	1.1635	1.1757	1.1907	1.2072	1.2230	1.2363	1.2465	1.2541	1.2600	1.2651						
SON VEL, M/SEC	978.5	957.4	937.9	920.1	903.9	888.9	874.3	859.1	842.6	824.5	804.8	784.0	762.1						

MOLE FRACTIONS

AR	0.00845	0.00854	0.00861	0.00867	0.00872	0.00875	0.00877	0.00878	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.04482	0.03501	0.02580	0.01779	0.01139	0.00673	0.00365	0.00182	0.00083	0.00034	0.00013	0.00004	0.00001						
CO2	0.06850	0.07952	0.08974	0.09855	0.10555	0.11064	0.11600	0.12109	0.12600	0.13062	0.13492	0.13890	0.14258						
H	0.00606	0.00364	0.00208	0.00112	0.00057	0.00027	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000						
H2O	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2	0.00832	0.00622	0.00445	0.00334	0.00196	0.00119	0.00067	0.00035	0.00017	0.00008	0.00003	0.00001	0.00000						
H2O	0.08727	0.09370	0.09892	0.10300	0.10606	0.10827	0.10978	0.11077	0.11139	0.11177	0.11199	0.11212	0.11218						
NO	0.01476	0.01237	0.01019	0.00829	0.00668	0.00535	0.00425	0.00334	0.00258	0.00195	0.00142	0.00100	0.00067						
N2	0.70035	0.70909	0.71646	0.72242	0.72701	0.73035	0.73265	0.73417	0.73516	0.73580	0.73622	0.73651	0.73671						
O	0.00824	0.00527	0.00325	0.00194	0.00112	0.00062	0.00033	0.00017	0.00008	0.00004	0.00002	0.00001	0.00000						
OH	0.01829	0.01436	0.01093	0.00809	0.00582	0.00407	0.00276	0.00181	0.00114	0.00069	0.00039	0.00021	0.00010						
O2	0.03493	0.03228	0.02956	0.02709	0.02512	0.02376	0.02301	0.02272	0.02274	0.02291	0.02314	0.02335	0.02352						

ADD H2O(L)

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000										
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	4.7209-4	5.0454-4	5.4336-4	5.8864-4	6.4215-4	7.0637-4	7.8485-4	8.8296-4	1.0091-3	1.1773-3	1.4127-3	1.7659-3	2.6494-3						
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	32.610
CP, CAL/(G)(K)	0.3271	0.3219	0.3171	0.3123	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.6250						
GAMMA (S)	1.2657	1.2709	1.2760	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.1763						
SON VEL, M/SEC	738.0	714.5	689.8	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	300.0						

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00007	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13308	0.13313	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.11128
H2O	0.12664	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.01540
NO	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73138	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000										
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	3.6386-4	3.8080-4	3.9847-4	4.1699-4	4.3648-4	4.5715-4	4.7922-4	5.0299-4	5.2881-4	5.5709-4	5.8833-4	6.2310-4	6.6214-4						
M, MOL WT	27.867	28.122	28.338	28.514	28.653	28.759	28.837	28.892	28.928	28.952	28.966	28.974	28.978						
CP, CAL/(G)(K)	0.8222	0.7487	0.6773	0.6100	0.5489	0.4955	0.4509	0.4149	0.3872	0.3665	0.3514	0.3407	0.3328						
GAMMA (S)	1.1489	1.1529	1.1587	1.1665	1.1762	1.1877	1.2003	1.2132	1.2256	1.2368	1.2463	1.2541	1.2625						
SON VEL, M/SEC	979.7	959.3	940.2	922.2	905.1	888.7	872.5	856.3	839.4	821.5	802.5	782.2	760.7						

MOLE FRACTIONS

AR	0.00840	0.00847	0.00854	0.00859	0.00863	0.00867	0.00869	0.00871	0.00872	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.04920	0.03974	0.03093	0.02314	0.01662	0.01143	0.00751	0.00469	0.00277	0.00154	0.00080	0.00038	0.00017						
CO2	0.07884	0.08947	0.09928	0.10787	0.11503	0.12071	0.12499	0.12806	0.13014	0.13148	0.13229	0.13274	0.13298						
H	0.00455	0.00278	0.00164	0.00072	0.00050	0.00025	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000						
H2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2O	0.00937	0.00729	0.00554	0.00411	0.00297	0.00209	0.00142	0.00093	0.00059	0.00035	0.00020	0.00011	0.00005						
H2O	0.10297	0.10880	0.11353	0.11727	0.12014	0.12227	0.12381	0.12488	0.12560	0.12606	0.12635	0.12651	0.12660						
NO	0.01092	0.00864	0.00663	0.00491	0.00352	0.00242	0.00160	0.00101	0.00060	0.00034	0.00018	0.00009	0.00004						
N2	0.69785	0.70544	0.71188	0.71718	0.72139	0.72462	0.72699	0.72866	0.72979	0.73051	0.73095	0.73120	0.73133						
O	0.00432	0.00261	0.00150	0.00081	0.00042	0.00020	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000						
OH	0.01438	0.01089	0.00795	0.00560	0.00378	0.00245	0.00152	0.00089	0.00049	0.00026	0.00012	0.00005	0.00002						
O2	0.01920	0.01585	0.01258	0.00959	0.00700	0.00490	0.00327	0.00208	0.00125	0.00071	0.00038	0.00019	0.00008						

ADD H2O(L)
ADD (S)

CASE= 0 O/F= 14.2857 F/A= 0.07000 PERCENT FUEL= 6.5421 PHI= 1.0258
P, ATM 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000 4.0000
P, PSIA 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8 58.8
T, DEG K 1500.0 1400.0 1300.0 1200.0 1100.0 1000.0 900.0 800.0 700.0 600.0 500.0 400.0 300.0
T, DEG F 2240.3 2060.3 1880.3 1700.3 1520.3 1340.3 1160.3 980.3 800.3 620.3 440.3 260.3 80.3
RHO, G/CC 9.3710-4 1.0040-3 1.0813-3 1.1714-3 1.2779-3 1.4057-3 1.5618-3 1.7571-3 2.0091-3 2.3503-3 2.8246-3 3.5318-3 5.3643-3
M, MOL WT 28.836 28.836 28.836 28.836 28.836 28.836 28.836 28.836 28.851 28.929 28.972 28.981 33.013
CP, CAL/(G)(K) 0.3262 0.3226 0.3188 0.3146 0.3101 0.3052 0.2994 0.2929 0.2983 0.2931 0.2713 0.2598 0.4593
GAMMA (S) 1.2679 1.2716 1.2758 1.2804 1.2857 1.2916 1.2990 1.3060 1.3085 1.3166 1.3413 1.3588 1.1989
SON VEL./M/SEC 740.5 716.5 691.5 665.6 638.6 610.3 580.6 549.3 513.8 476.5 438.7 394.9 301.0

MOLE FRACTIONS

AR 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867 0.00868 0.00870 0.00872 0.00872 0.00867
C(S) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00502
CH4 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00025 0.00160 0.00235 0.00251 0.00000
CO 0.00727 0.00692 0.00647 0.00590 0.00517 0.00427 0.00321 0.00207 0.00095 0.00014 0.00001 0.00000 0.00000 0.00000
CO2 0.12840 0.12876 0.12921 0.12978 0.13050 0.13140 0.13247 0.13360 0.13454 0.13438 0.13396 0.13385 0.13066
H2 0.00278 0.00313 0.00358 0.00415 0.00488 0.00578 0.00684 0.00795 0.00805 0.00352 0.00066 0.00005 0.00000 0.00000
H2O(L) 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.12151
H2O 0.12630 0.12595 0.12550 0.12493 0.12420 0.12330 0.12224 0.12111 0.12056 0.12274 0.12430 0.12465 0.00757
NH3 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00001 0.00002 0.00003 0.00002 0.00001 0.00000 0.00000
N2 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72657 0.72658 0.72658 0.72694 0.72889 0.72999 0.73022 0.72657

CASE= 0 O/F= 14.2857 F/A= 0.07000 PERCENT FUEL= 6.5421 PHI= 1.0258
P, ATM 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000 6.0000
P, PSIA 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2 88.2
T, DEG K 2800.0 2700.0 2600.0 2500.0 2400.0 2300.0 2200.0 2100.0 2000.0 1900.0 1800.0 1700.0 1600.0
T, DEG F 4580.3 4400.3 4220.3 4040.3 3860.3 3680.3 3500.3 3320.3 3140.3 2960.3 2780.3 2600.3 2420.3
RHO, G/CC 7.3172-4 7.6451-4 7.9883-4 8.3490-4 8.7301-4 9.1349-4 9.5675-4 1.0033-3 1.0540-3 1.1096-3 1.1712-3 1.2403-3 1.3178-3
M, MOL WT 28.200 28.230 28.405 28.546 28.654 28.734 28.786 28.816 28.829 28.834 28.835 28.836 28.836
CP, CAL/(G)(K) 0.7407 0.6774 0.6158 0.5576 0.5039 0.4550 0.4112 0.3754 0.3529 0.3419 0.3364 0.3327 0.3294
GAMMA (S) 1.1555 1.1604 1.1671 1.1758 1.1867 1.1999 1.2156 1.2325 1.2458 1.2535 1.2580 1.2614 1.2645
SON VEL./M/SEC 979.8 960.6 942.5 925.3 909.0 893.6 878.9 864.2 847.7 828.7 808.0 786.3 763.8

MOLE FRACTIONS

AR 0.00843 0.00849 0.00854 0.00859 0.00862 0.00864 0.00866 0.00867 0.00867 0.00867 0.00867 0.00867 0.00867
CO 0.04514 0.03669 0.02909 0.02260 0.01736 0.01342 0.01075 0.00924 0.00852 0.00820 0.00799 0.00779 0.00756
CO2 0.08670 0.09613 0.10455 0.11171 0.11747 0.12178 0.12469 0.12635 0.12712 0.12747 0.12769 0.12789 0.12812
H 0.00303 0.00187 0.00112 0.00065 0.00036 0.00020 0.00010 0.00005 0.00003 0.00001 0.00001 0.00000 0.00000
H02 0.00001 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000
H2 0.00834 0.00660 0.00516 0.00401 0.00312 0.00249 0.00208 0.00189 0.00187 0.00195 0.00209 0.00227 0.00250
H2O 0.10982 0.11457 0.11839 0.12138 0.12362 0.12523 0.12628 0.12685 0.12706 0.12707 0.12697 0.12680 0.12658
N0 0.00928 0.00712 0.00525 0.00369 0.00243 0.00147 0.00079 0.00036 0.00014 0.00004 0.00001 0.00000 0.00000
N2 0.70137 0.70773 0.71308 0.71741 0.72078 0.72326 0.72493 0.72588 0.72632 0.72649 0.72654 0.72656 0.72657
O 0.00259 0.00152 0.00084 0.00043 0.00020 0.00009 0.00003 0.00001 0.00000 0.00000 0.00000 0.00000 0.00000
OH 0.01150 0.00852 0.00608 0.00415 0.00268 0.00163 0.00090 0.00045 0.00020 0.00008 0.00003 0.00001 0.00000
O2 0.01379 0.01073 0.00789 0.00539 0.00335 0.00218 0.00131 0.00079 0.00046 0.00026 0.00011 0.00006 0.00000 0.00000

ADD C(S)
ADD H2O(L)

CASE= 0 O/F= 12.5000 F/A= 0.08000 PERCENT FUEL= 7.4074 PHI= 1.1723

P, ATH	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	2.2786-3	2.4413-3	2.6291-3	2.8482-3	3.1072-3	3.4183-3	3.8056-3	4.3322-3	5.0096-3	5.8758-3	7.0622-3	8.8303-3	1.3753-2	
M, MOL WT	28.046	28.046	28.046	28.046	28.046	28.049	28.105	28.439	28.775	28.929	28.975	28.983	33.857	
CP, CAL/(G* ^o K)	0.3338	0.3313	0.3289	0.3266	0.3247	0.3258	0.3278	0.4444	0.3587	0.3041	0.2786	0.2675	0.3684	
GAMMA (S)	1.2695	1.2721	1.2746	1.2771	1.2793	1.2798	1.2560	1.2333	1.2691	1.3039	1.3292	1.3449	1.2135	
SON VEL, M/SEC	751.4	726.6	700.9	674.0	645.9	615.9	578.3	537.1	506.6	474.2	436.7	392.8	299.0	

MOLE FRACTIONS

AR	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00838	0.00848	0.00858	0.00858	0.00852	0.00844	0.00836	
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00443	0.01304	0.02234	0.03236	
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00005	0.00102	0.00694	0.01295	0.01342	0.00981	0.00516	0.00000	
CO	0.04458	0.04258	0.04013	0.03707	0.03327	0.02848	0.02141	0.00903	0.00174	0.00015	0.00000	0.00000	0.00000	
CO2	0.10480	0.10679	0.10925	0.11230	0.11611	0.12086	0.12726	0.13549	0.13857	0.13540	0.12945	0.12342	0.11701	
H2	0.02015	0.02214	0.02460	0.02764	0.03143	0.03601	0.03927	0.02865	0.01272	0.00366	0.00060	0.00004	0.00000	
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13928	
H2O	0.12200	0.12001	0.11755	0.11450	0.11070	0.10601	0.10103	0.10142	0.10707	0.11535	0.12466	0.13323	0.00287	
NH3	0.00000	0.00000	0.00000	0.00001	0.00002	0.00003	0.00008	0.00012	0.00012	0.00008	0.00004	0.00001	0.00000	
N2	0.70012	0.70012	0.70012	0.70012	0.70012	0.70019	0.70155	0.70986	0.71827	0.71892	0.71386	0.70735	0.70012	

CASE= 0 O/F= 12.5000 F/A= 0.08000 PERCENT FUEL= 7.4074 PHI= 1.1723

P, ATH	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3
RHO, G/CC	1.8128-3	1.8873-3	1.9650-3	2.0468-3	2.1340-3	2.2279-3	2.3298-3	2.4410-3	2.5632-3	2.6982-3	2.8482-3	3.0157-3	3.2042-3	
M, MOL WT	27.68	27.876	27.949	27.993	28.018	28.032	28.039	28.042	28.044	28.045	28.046	28.046	28.046	
CP, CAL/(G* ^o K)	0.5824	0.5131	0.4542	0.4111	0.3833	0.3665	0.3565	0.3505	0.3465	0.3435	0.3409	0.3386	0.3362	
GAMMA (S)	1.1783	1.1914	1.2070	1.2225	1.2352	1.2442	1.2504	1.2545	1.2576	1.2601	1.2624	1.2647	1.2671	
SON VEL, M/SEC	993.9	979.5	966.2	952.8	937.9	921.3	903.2	883.8	863.5	842.5	820.8	798.4	775.3	

MOLE FRACTIONS

AR	0.00828	0.00831	0.00833	0.00834	0.00835	0.00835	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	
CO	0.06302	0.05898	0.05619	0.05439	0.05325	0.05245	0.05178	0.05113	0.05042	0.04962	0.04868	0.04755	0.04621	
CO2	0.08487	0.08949	0.09267	0.09470	0.09598	0.09685	0.09756	0.09823	0.09894	0.09975	0.10070	0.10182	0.10317	
H	0.00242	0.00163	0.00108	0.00071	0.00045	0.00028	0.00017	0.00009	0.00005	0.00003	0.00001	0.00000	0.00000	
H2	0.01332	0.01251	0.01212	0.01207	0.01225	0.01260	0.01306	0.01363	0.01431	0.01511	0.01605	0.01717	0.01852	
H2O	0.12299	0.12582	0.12764	0.12866	0.12909	0.12911	0.12885	0.12840	0.12778	0.12702	0.12609	0.12497	0.12363	
NO	0.00408	0.00258	0.00151	0.00081	0.00040	0.00019	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	
N2	0.69113	0.69459	0.69694	0.69839	0.69922	0.69967	0.69990	0.70002	0.70007	0.70010	0.70011	0.70011	0.70012	
O	0.00073	0.00035	0.00015	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
OH	0.00644	0.00430	0.00270	0.00160	0.00089	0.00047	0.00023	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	
O2	0.00271	0.00144	0.00066	0.00027	0.00010	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	

ADD C(S)
ADD H2O(L)

CASE=	0	0/F=	11.1111	F/A=	0.09000	PERCENT FUEL=	8.2569	PHI=	1.3189								
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG F	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG K	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0
RHO, G/CC	4.4378-3	4.7548-3	5.1206-3	5.5475-3	6.0536-3	6.6808-3	7.5533-3	8.6830-3	1.0035-2	1.1757-2	1.4126-2	1.8467-2	2.8113-2	4.4378-3	4.7548-3	5.1206-3	5.5475-3
M, MOL WT	27.311	27.311	27.311	27.311	27.311	27.311	27.410	27.891	28.500	28.943	28.979	30.308	34.602	27.311	27.311	27.311	27.311
CP, CAL/(G)(K)	0.3403	0.3385	0.3370	0.3364	0.3428	0.4259	0.5728	0.4735	0.3533	0.3024	0.2812	1.7884	0.3442	0.3403	0.3385	0.3370	0.3364
GAMMA (S)	1.2719	1.2738	1.2755	1.2765	1.2739	1.2415	1.2043	1.2211	1.2685	1.3032	1.3246	1.1766	1.2128	1.2719	1.2738	1.2755	1.2765
SON VEL, M/SEC	762.1	736.8	710.5	682.9	653.0	613.7	568.4	533.8	506.1	473.9	435.9	359.3	295.7	762.1	736.8	710.5	682.9

MOLE FRACTIONS

AR	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO	0.07610	0.07308	0.06940	0.06488	0.05911	0.04964	0.02872	0.00814	0.00125	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.08601	0.08904	0.09271	0.09723	0.10292	0.11131	0.12632	0.13467	0.13140	0.12577	0.11931	0.10888	0.10433	0.08601	0.08904	0.09271	0.09723
H2	0.03945	0.04247	0.04613	0.05059	0.05584	0.05915	0.04693	0.02525	0.01014	0.00284	0.00047	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.11484	0.11181	0.10814	0.10364	0.09813	0.09201	0.08931	0.09853	0.11247	0.12335	0.13319	0.10652	0.00137	0.11484	0.11181	0.10814	0.10364
NH3	0.00001	0.00001	0.00002	0.00004	0.00007	0.00014	0.00021	0.00026	0.00016	0.00011	0.00006	0.00001	0.00000	0.00001	0.00001	0.00002	0.00004
N2	0.67552	0.67553	0.67553	0.67555	0.67572	0.67790	0.68976	0.69972	0.70059	0.69787	0.69196	0.68058	0.67552	0.67552	0.67553	0.67555	0.67572

CASE=	0	0/F=	11.1111	F/A=	0.09000	PERCENT FUEL=	8.2569	PHI=	1.3189								
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	2800.0	2700.0	2600.0	2500.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	4580.3	4400.3	4220.3	4040.3
RHO, G/CC	3.5509-3	3.6884-3	3.8343-3	3.9903-3	4.1582-3	4.3400-3	4.5379-3	4.7544-3	4.9923-3	5.2552-3	5.5472-3	5.8735-3	6.2406-3	3.5509-3	3.6884-3	3.8343-3	3.9903-3
M, MOL WT	27.95	27.240	27.268	27.286	27.297	27.303	27.307	27.309	27.310	27.311	27.311	27.311	27.311	27.95	27.240	27.268	27.286
CP, CAL/(G)(K)	0.4595	0.4234	0.3981	0.3810	0.3697	0.3622	0.3571	0.3535	0.3507	0.3484	0.3463	0.3442	0.3423	0.4595	0.4234	0.3981	0.3810
GAMMA (S)	1.2121	1.2243	1.2348	1.2431	1.2493	1.2538	1.2573	1.2599	1.2622	1.2642	1.2661	1.2681	1.2700	1.2121	1.2243	1.2348	1.2431
SON VEL, M/SEC	1018.6	1004.5	989.4	973.1	955.6	937.1	917.7	897.5	876.7	855.1	833.0	810.1	786.5	1018.6	1004.5	989.4	973.1

MOLE FRACTIONS

AR	0.00803	0.00804	0.00805	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00803	0.00804	0.00805	0.00806
CO	0.09314	0.09176	0.09072	0.08986	0.08907	0.08826	0.08739	0.08641	0.08529	0.08399	0.08248	0.08071	0.07861	0.09314	0.09176	0.09072	0.08986
CO2	0.06828	0.06992	0.07113	0.07210	0.07296	0.07380	0.07470	0.07569	0.07682	0.07811	0.07963	0.08140	0.08350	0.06828	0.06992	0.07113	0.07210
H	0.00235	0.00163	0.00111	0.00073	0.00047	0.00029	0.00017	0.00010	0.00005	0.00003	0.00001	0.00000	0.00000	0.00235	0.00163	0.00111	0.00073
H2	0.02501	0.02512	0.02545	0.02594	0.02657	0.02730	0.02816	0.02913	0.03026	0.03156	0.03307	0.03485	0.03695	0.02501	0.02512	0.02545	0.02594
H2O	0.12576	0.12688	0.12740	0.12747	0.12721	0.12670	0.12598	0.12508	0.12400	0.12272	0.12122	0.11944	0.11734	0.12576	0.12688	0.12740	0.12747
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
N2	0.00155	0.00090	0.00050	0.00026	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00155	0.00090	0.00050	0.00026
O	0.67188	0.67330	0.67421	0.67477	0.67510	0.67530	0.67541	0.67546	0.67550	0.67551	0.67552	0.67552	0.67552	0.67188	0.67330	0.67421	0.67477
O2	0.00020	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00009	0.00004	0.00001
OH	0.00340	0.00216	0.00132	0.00077	0.00042	0.00022	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00340	0.00216	0.00132	0.00077
O2	0.00040	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00040	0.00018	0.00008	0.00003

ADD C1S1
ADD H2O(L)

	CASE= 0	O/F= 10.0000	F/A= 0.10000	PERCENT FUEL= 9.0909				PHI= 1.4654									
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	8.6533-3	9.2716-3	9.9856-3	1.0823-2	1.1850-2	1.3274-2	1.5203-2	1.7434-2	2.0097-2	2.3525-2	2.8257-2	4.0478-2	5.7415-2				
M, MOL WT	26.627	26.628	26.630	26.643	26.741	27.231	28.069	28.612	28.860	28.955	28.983	33.215	35.335				
CP, CAL/(G)(K)	0.3460	0.3447	0.3449	0.3545	0.4385	0.6404	0.6243	0.4339	0.3421	0.3017	0.2839	0.9003	0.3362				
GAMMA (S)	1.2751	1.2766	1.2773	1.2736	1.2438	1.1995	1.1909	1.2321	1.2729	1.3017	1.3200	1.1780	1.2071				
SON VEL, M/SEC	772.8	747.0	720.0	690.6	652.2	605.2	563.4	535.2	506.7	473.6	435.1	343.4	291.9				

MOLE FRACTIONS

AR	0.00779	0.00779	0.00779	0.00780	0.00782	0.00797	0.00811	0.00815	0.06814	0.00810	0.00802	0.00780	0.00779				
C1S1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01265	0.02697	0.03552	0.04330	0.05426	0.07990	0.08148				
CH4	0.00000	0.00001	0.00003	0.00024	0.00204	0.01119	0.02026	0.02265	0.02258	0.01979	0.01469	0.00085	0.00000				
CO	0.10312	0.09956	0.09522	0.08964	0.08026	0.05785	0.02325	0.00553	0.00085	0.00007	0.00000	0.00000	0.00000				
CO2	0.07087	0.07442	0.07875	0.08421	0.09243	0.10889	0.12492	0.12677	0.12294	0.11713	0.11016	0.09353	0.09251				
H2	0.05979	0.06331	0.06751	0.07226	0.07490	0.06356	0.03951	0.01989	0.00782	0.00218	0.00036	0.00001	0.00000				
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.11708				
H2O	0.10580	0.10225	0.09757	0.09280	0.08703	0.08297	0.09187	0.10756	0.11983	0.13023	0.14065	0.04711	0.00065				
NH3	0.00003	0.00005	0.00007	0.00012	0.00021	0.00031	0.00032	0.00029	0.00022	0.00015	0.00008	0.00000	0.00000				
N2	0.65260	0.65261	0.65265	0.65293	0.65530	0.66725	0.67910	0.68220	0.68210	0.67845	0.67179	0.65371	0.65260				

	CASE= 0	O/F= 10.0000	F/A= 0.10000	PERCENT FUEL= 9.0909				PHI= 1.4654									
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8				
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	5.7790-3	5.9988-3	6.2335-3	6.4855-3	6.7576-3	7.0525-3	7.3738-3	7.7254-3	8.1120-3	8.5391-3	9.0136-3	9.5439-3	1.0140-2				
M, MOL WT	26.556	26.581	26.598	26.609	26.616	26.621	26.623	26.625	26.626	26.626	26.627	26.627	26.627				
CP, CAL/(G)(K)	0.4204	0.4006	0.3865	0.3764	0.3693	0.3641	0.3604	0.3575	0.3551	0.3530	0.3511	0.3493	0.3476				
GAMMA (S)	1.2319	1.2401	1.2468	1.2522	1.2563	1.2596	1.2622	1.2644	1.2664	1.2682	1.2700	1.2717	1.2735				
SON VEL, M/SEC	1039.2	1023.4	1006.7	989.0	970.5	951.2	931.2	910.6	889.3	867.4	844.9	821.6	797.6				

MOLE FRACTIONS

AR	0.00777	0.00778	0.00778	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779				
CO	0.12168	0.12089	0.12014	0.11937	0.11854	0.11763	0.11660	0.11542	0.11407	0.11251	0.11070	0.10858	0.10608				
CO2	0.05184	0.05280	0.05366	0.05450	0.05537	0.05632	0.05737	0.05855	0.05991	0.06147	0.06329	0.06541	0.06790				
H	0.00235	0.00164	0.00112	0.00074	0.00047	0.00029	0.00017	0.00010	0.00005	0.00003	0.00001	0.00000	0.00000				
H2	0.04157	0.04208	0.04271	0.04345	0.04429	0.04523	0.04629	0.04748	0.04885	0.05042	0.05223	0.05435	0.05683				
H2O	0.12145	0.12182	0.12180	0.12148	0.12091	0.12015	0.11920	0.11806	0.11673	0.11518	0.11337	0.11125	0.10876				
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002				
NO	0.00069	0.00039	0.00022	0.00011	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
N2	0.65052	0.65129	0.65179	0.65212	0.65232	0.65244	0.65251	0.65256	0.65258	0.65259	0.65260	0.65260	0.65260				
O	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
OH	0.00197	0.00124	0.00075	0.00044	0.00024	0.00013	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000				
O2	0.00008	0.00004	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				

ADD H2O(L)

CASE=	O	O/F=100.0000	F/A=	0.01000	PERCENT FUEL=	0.9901	PHI=	0.1465										
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1860.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	2.3534-3	2.5215-3	2.7155-3	2.9418-3	3.2092-3	3.5301-3	3.9223-3	4.4126-3	5.0430-3	5.8835-3	7.0602-3	8.8253-3	1.1961-2					
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G)(K)	0.2993	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2406					
GAMMA (S)	1.2974	1.3031	1.3090	1.3150	1.3215	1.3285	1.3368	1.3466	1.3574	1.3698	1.3799	1.3893	1.3048					
SON VEL./M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	332.5					

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01961	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962
NO	0.00312	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17641	0.17666	0.17662	0.17693	0.17698	0.17701	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	O	O/F=100.0000	F/A=	0.01000	PERCENT FUEL=	0.9901	PHI=	0.1465										
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3					
RHO, G/CC	1.8800-3	1.9535-3	2.0312-3	2.1143-3	2.2038-3	2.3006-3	2.4058-3	2.5209-3	2.6472-3	2.7867-3	2.9417-3	3.1148-3	3.3095-3					
M, MOL WT	28.805	28.854	28.889	28.915	28.934	28.946	28.954	28.960	28.963	28.965	28.966	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G)(K)	0.4316	0.4083	0.3886	0.3722	0.3588	0.3477	0.3386	0.3309	0.3243	0.3185	0.3132	0.3083	0.3037					
GAMMA (S)	1.2125	1.2202	1.2282	1.2360	1.2434	1.2505	1.2572	1.2635	1.2694	1.2752	1.2808	1.2863	1.2919					
SON VEL./M/SEC	989.9	974.4	958.7	942.6	926.0	908.9	891.2	872.8	853.7	834.0	813.5	792.3	770.3					

MOLE FRACTIONS

AR	0.00918	0.00920	0.00921	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00125	0.00123	0.00078	0.00047	0.00027	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01892	0.01957	0.02005	0.02037	0.02059	0.02072	0.02080	0.02084	0.02086	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00032	0.00018	0.00010	0.00005	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00023	0.00016	0.00011	0.00007	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01592	0.01674	0.01743	0.01799	0.01845	0.01880	0.01906	0.01926	0.01939	0.01949	0.01955	0.01958	0.01960	0.01960	0.01960	0.01960	0.01960	0.01960
NO	0.03238	0.02840	0.02459	0.02100	0.01765	0.01461	0.01185	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189					
NO2	0.00007	0.00006	0.00006	0.00006	0.00006	0.00005	0.00005	0.00005	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
N2	0.75268	0.75597	0.75884	0.76133	0.76348	0.76534	0.76694	0.76831	0.76946	0.77041	0.77119	0.77180	0.77227					
O	0.00551	0.00370	0.00241	0.00151	0.00091	0.00052	0.00029	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00639	0.00509	0.00395	0.00299	0.00219	0.00156	0.00107	0.00071	0.00045	0.00027	0.00015	0.00008	0.00004					
O2	0.15653	0.15967	0.16246	0.16493	0.16710	0.16898	0.17061	0.17201	0.17318	0.17416	0.17495	0.17557	0.17605					

ADD H2O(L)

CASE= 0 O/F= 50.0000 F/A= 0.02000 PERCENT FUEL= 1.9608 PHI= 0.2931

P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	80.3
RHO, G/CC	4.7072-3	5.0435-3	5.4314-3	5.8841-3	6.4190-3	7.0609-3	7.8454-3	8.8261-3	1.0087-2	1.1768-2	1.4122-2	1.7652-2	2.4446-2	2.4446-2
M, MOL WT	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	30.089
CP, CAL/(G*IK)	0.3043	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.2426	0.2426
GAMMA (S)	1.2911	1.2966	1.3023	1.3083	1.3147	1.3218	1.3301	1.3399	1.3508	1.3623	1.3737	1.3837	1.3124	1.3124
SON VEL, M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	329.8	329.8

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03720
H2	0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.00167
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572	0.76572
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14464	0.14487	0.14562	0.14511	0.14517	0.14519	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

CASE= 0 O/F= 50.0000 F/A= 0.02000 PERCENT FUEL= 1.9608 PHI= 0.2931

P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2420.3
RHO, G/CC	3.7620-3	3.9077-3	4.0629-3	4.2291-3	4.4080-3	4.6016-3	4.8121-3	5.0422-3	5.2949-3	5.5740-3	5.8839-3	6.2301-3	6.6196-3	6.6196-3
M, MOL WT	28.812	28.859	28.894	28.919	28.936	28.949	28.957	28.962	28.965	28.967	28.969	28.969	28.970	28.970
CP, CAL/(G*IK)	0.4340	0.4110	0.3917	0.3757	0.3625	0.3518	0.3429	0.3354	0.3290	0.3233	0.3181	0.3133	0.3087	0.3087
GAMMA (S)	1.2103	1.2179	1.2255	1.2330	1.2401	1.2468	1.2531	1.2590	1.2646	1.2700	1.2753	1.2805	1.2858	1.2858
SON VEL, M/SEC	988.9	973.3	957.6	941.4	924.8	907.5	889.7	871.2	852.0	832.2	811.7	790.4	768.4	768.4

MOLE FRACTIONS

AR	0.00909	0.00911	0.00912	0.00913	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00290	0.00191	0.00121	0.00073	0.00042	0.00023	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.03794	0.03900	0.03975	0.04026	0.04060	0.04080	0.04093	0.04100	0.04103	0.04105	0.04106	0.04106	0.04106	0.04106
H	0.00029	0.00017	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00004	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.00038	0.00026	0.00017	0.00011	0.00007	0.00004	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.03435	0.03540	0.03626	0.03694	0.03749	0.03790	0.03822	0.03844	0.03860	0.03871	0.03878	0.03882	0.03884	0.03884
NO	0.02915	0.02555	0.02211	0.01889	0.01589	0.01314	0.01066	0.00847	0.00657	0.00495	0.00361	0.00254	0.00170	0.00170
NO2	0.00008	0.00007	0.00007	0.00007	0.00006	0.00006	0.00006	0.00005	0.00005	0.00004	0.00004	0.00003	0.00003	0.00003
N2	0.74693	0.74998	0.75261	0.75490	0.75687	0.75857	0.76002	0.76126	0.76230	0.76317	0.76387	0.76442	0.76485	0.76485
O	0.00352	0.00237	0.00154	0.00096	0.00058	0.00033	0.00018	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000
OH	0.00750	0.00591	0.00455	0.00342	0.00250	0.00177	0.00121	0.00080	0.00050	0.00030	0.00017	0.00009	0.00004	0.00004
O2	0.12782	0.13025	0.13249	0.13452	0.13636	0.13799	0.13943	0.14067	0.14172	0.14260	0.14332	0.14388	0.14432	0.14432

ADD H2O(L)

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	9.4153-3	1.0088-2	1.0864-2	1.1769-2	1.2839-2	1.4123-2	1.5692-2	1.7654-2	2.0176-2	2.3538-2	2.8246-2	3.5307-2	4.9918-2						
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	30.721
CP, CAL/(G*IK)	0.3091	0.3047	0.3002	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.2831						
GAMMA (S)	1.2852	1.2905	1.2961	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.3066						
SON VEL, M/SEC	743.8	720.1	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8							

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05692						
H2O	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11350	0.11370	0.11363	0.11391	0.11396	0.11398	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	6.2706-3	6.5135-3	6.7722-3	7.0492-3	7.3474-3	7.6700-3	8.0209-3	8.4044-3	8.8256-3	9.2907-3	9.8073-3	1.0384-2	1.1034-2						
M, MOL WT	28.814	28.862	28.897	28.922	28.939	28.951	28.959	28.965	28.968	28.970	28.971	28.972	28.972						
CP, CAL/(G*IK)	0.4382	0.4148	0.3952	0.3791	0.3660	0.3554	0.3467	0.3395	0.3333	0.3277	0.3227	0.3180	0.3135						
GAMMA (S)	1.2080	1.2155	1.2231	1.2303	1.2372	1.2436	1.2495	1.2550	1.2603	1.2653	1.2702	1.2752	1.2801						
SON VEL, M/SEC	987.9	972.3	956.5	940.3	923.6	906.3	888.4	869.8	850.6	830.6	810.1	788.7	766.7						

MOLE FRACTIONS

AR	0.00900	0.00902	0.00903	0.00904	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.00321	0.00250	0.00158	0.00095	0.00055	0.00030	0.00015	0.00007	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.05672	0.05812	0.05912	0.05980	0.06024	0.06051	0.06068	0.06077	0.06081	0.06084	0.06085	0.06085	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H	0.00026	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00052	0.00035	0.00023	0.00014	0.00009	0.00005	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.05290	0.05405	0.05498	0.05572	0.05630	0.05674	0.05707	0.05730	0.05747	0.05758	0.05765	0.05769	0.05772	0.05772	0.05772	0.05772	0.05772	0.05772	0.05772
NO	0.02563	0.02245	0.01943	0.01660	0.01397	0.01156	0.00938	0.00746	0.00578	0.00436	0.00318	0.00224	0.00150						
NO2	0.00008	0.00007	0.00007	0.00007	0.00006	0.00006	0.00006	0.00006	0.00005	0.00004	0.00004	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
N2	0.74137	0.74420	0.74662	0.74870	0.75048	0.75200	0.75330	0.75440	0.75533	0.75609	0.75671	0.75721	0.75758						
O	0.00241	0.00162	0.00105	0.00066	0.00040	0.00023	0.00013	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00770	0.00604	0.00464	0.00347	0.00253	0.00179	0.00122	0.00081	0.00051	0.00030	0.00017	0.00009	0.00004						
O2	0.09956	0.10138	0.10313	0.10478	0.10630	0.10769	0.10892	0.11000	0.11092	0.11169	0.11232	0.11283	0.11321						

ADD H2O(L)

CASE=	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327				
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0
RHO, G/CC	1.1771-4	1.2612-4	1.3582-4	1.4714-4	1.6051-4	1.7657-4	1.9618-4	2.2071-4	2.5224-4	2.9428-4	3.5313-4	4.4142-4	6.0486-4	0.0
M, MOL WT	28.976	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	29.780
CP, CAL/(G*IK)	0.3189	0.3141	0.3095	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	1.8015	0.0
GAMMA (S)	1.2741	1.2793	1.2847	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.1409	0.0
SON VEL,M/SEC	740.5	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	309.1	0.0

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00998	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.02696
H2O	0.09438	0.09440	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.06745
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74369	0.74383	0.74392	0.74392	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05301	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

CASE=	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327				
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	0.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	0.0
RHO, G/CC	1.2128-4	1.2715-4	1.3319-4	1.3944-4	1.4595-4	1.5279-4	1.6007-4	1.6791-4	1.7643-4	1.8579-4	1.9615-4	2.0771-4	2.2070-4	0.0
M, MOL WT	27.866	28.169	28.415	28.605	28.743	28.837	28.897	28.933	28.954	28.965	28.971	28.974	28.976	0.0
CP, CAL/(G*IK)	0.8998	0.8003	0.7024	0.6106	0.5302	0.4653	0.4171	0.3835	0.3612	0.3465	0.3365	0.3294	0.3237	0.0
GAMMA (S)	1.1444	1.1490	1.1563	1.1669	1.1807	1.1966	1.2130	1.2279	1.2403	1.2500	1.2576	1.2638	1.2692	0.0
SON VEL,M/SEC	977.8	956.9	937.9	920.8	905.4	890.8	876.3	860.8	844.0	825.7	806.0	785.2	763.3	0.0

MOLE FRACTIONS

AR	0.00854	0.00864	0.00871	0.00877	0.00881	0.00884	0.00886	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.03737	0.02853	0.02041	0.01359	0.00840	0.00481	0.00256	0.00126	0.00057	0.00024	0.00009	0.00003	0.00001	0.00001
CO2	0.05815	0.06802	0.07699	0.08446	0.09012	0.09403	0.09649	0.09792	0.09868	0.09905	0.09922	0.09928	0.09931	0.09931
H	0.00662	0.00394	0.00222	0.00119	0.00059	0.00028	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00662	0.00486	0.00339	0.00225	0.00141	0.00083	0.00047	0.00024	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000
H2O	0.07069	0.07680	0.08174	0.08558	0.08845	0.09050	0.09193	0.09288	0.09350	0.09390	0.09413	0.09427	0.09435	0.09435
NO	0.01848	0.01596	0.01360	0.01144	0.00951	0.00782	0.00632	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102	0.00070
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O	0.70627	0.71531	0.72281	0.72876	0.73327	0.73653	0.73882	0.74040	0.74149	0.74226	0.74281	0.74321	0.74349	0.0
O	0.01258	0.00829	0.00528	0.00326	0.00194	0.00111	0.00060	0.00031	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000
OH	0.02034	0.01631	0.01268	0.00956	0.00700	0.00497	0.00341	0.00225	0.00142	0.00085	0.00048	0.00026	0.00012	0.00002
O2	0.05433	0.05333	0.05215	0.05113	0.05049	0.05028	0.05043	0.05080	0.05128	0.05176	0.05219	0.05254	0.05281	0.05281

ADD H2O(L)

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=				5.6604	PHI=				0.8792	
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0			
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3			
RHO, G/CC	3.5316-4	3.7838-4	4.0749-4	4.4145-4	4.8158-4	5.2974-4	5.8860-4	6.6218-4	7.5677-4	8.8290-4	1.0595-3	1.3244-3	1.9431-3			
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	31.889		
CP, CAL/(G*IK)	0.3229	0.3183	0.3138	0.3090	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.2405			
GAMMA (S)	1.2698	1.2746	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.1699			
SON VEL, M/SEC	739.2	715.5	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	302.5			

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00990	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11862	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.09124
H2O	0.11221	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.02100
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73684	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02381	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=				5.6604	PHI=				0.8792	
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0			
T, DEG F	4850.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3			
RHO, G/CC	2.4316-4	2.5462-4	2.6653-4	2.7894-4	2.9192-4	3.0561-4	3.2017-4	3.3585-4	3.5290-4	3.7131-4	3.9234-4	4.1545-4	4.4144-4			
M, MOL WT	27.934	28.206	28.432	28.611	28.745	28.839	28.900	28.937	28.958	28.969	28.974	28.977	28.978			
CP, CAL/(G*IK)	0.8482	0.7651	0.6825	0.6031	0.5306	0.4690	0.4209	0.3866	0.3638	0.3490	0.3394	0.3327	0.3274			
GAMMA (S)	1.1470	1.1513	1.1580	1.1675	1.1801	1.1951	1.2110	1.2258	1.2381	1.2475	1.2546	1.2603	1.2652			
SON VEL, M/SEC	977.7	957.3	938.3	921.0	905.1	890.2	875.5	860.0	843.2	824.8	805.0	784.1	762.1			

MOLE FRACTIONS

AR	0.00848	0.00856	0.00863	0.00869	0.00873	0.00876	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.04159	0.03211	0.02339	0.01595	0.01011	0.00592	0.00319	0.00158	0.00072	0.00030	0.00011	0.00004	0.00001	0.00001	0.00001	0.00001
CO2	0.07216	0.08276	0.09240	0.10057	0.10696	0.11153	0.11456	0.11626	0.11721	0.11768	0.11788	0.11797	0.11800	0.11800	0.11800	0.11800
H	0.00499	0.00299	0.00170	0.00092	0.00046	0.00022	0.00010	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00953	0.00559	0.00397	0.00259	0.00172	0.00104	0.00059	0.00031	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.08961	0.09548	0.10022	0.10391	0.10667	0.10866	0.11001	0.11090	0.11147	0.11181	0.11201	0.11213	0.11219			
NO	0.01454	0.01217	0.01003	0.00818	0.00661	0.00531	0.00424	0.00334	0.00258	0.00195	0.00142	0.00100	0.00067			
N2	0.70320	0.71133	0.71814	0.72361	0.72780	0.73083	0.73293	0.73432	0.73523	0.73583	0.73623	0.73651	0.73671			
O	0.00701	0.00448	0.00277	0.00165	0.00096	0.00053	0.00029	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000			
OH	0.01710	0.01337	0.01015	0.00750	0.00540	0.00378	0.00257	0.00169	0.00106	0.00064	0.00036	0.00019	0.00009			
O2	0.03376	0.03116	0.02858	0.02632	0.02457	0.02342	0.02281	0.02263	0.02270	0.02290	0.02313	0.02335	0.02352			

ADD H2O(L)

CASE=	0	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882			PHI= 1.0000			3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, ATH	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0		
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	7.0633-4	7.5681-4	8.1503-4	8.8296-4	9.6323-4	1.0596-3	1.1773-3	1.3244-3	1.5136-3	1.7659-3	2.1191-3	2.6489-3	3.9974-3		
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981
CP, CAL/(G)(K)	0.3268	0.3218	0.3171	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.2530		
GAMMA (S)	1.2659	1.2710	1.2760	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.1905		
SON VEL, M/SEC	738.1	714.5	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	300.9		

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13309	0.13314	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.12665	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73139	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882			PHI= 1.0000			4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, ATH	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0		
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3		
RHO, G/CC	4.8674-4	5.0903-4	5.3232-4	5.5677-4	5.8256-4	6.0994-4	6.3924-4	6.7084-4	7.0519-4	7.4285-4	7.8447-4	8.3082-4	8.8287-4		
M, MOL WT	27.958	28.194	28.392	28.554	28.682	28.779	28.850	28.899	28.933	28.954	28.967	28.974	28.978		
CP, CAL/(G)(K)	0.7861	0.7175	0.6509	0.5884	0.5319	0.4827	0.4415	0.4085	0.3830	0.3638	0.3499	0.3398	0.3324		
GAMMA (S)	1.1515	1.1559	1.1620	1.1700	1.1798	1.1911	1.2034	1.2159	1.2277	1.2383	1.2473	1.2547	1.2608		
SON VEL, M/SEC	979.2	959.3	940.6	922.9	906.0	889.7	873.5	857.1	840.0	822.0	802.8	782.4	760.8		

MOLE FRACTIONS

AR	0.00842	0.00850	0.00855	0.00860	0.00864	0.00867	0.00869	0.00871	0.00872	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.04612	0.03702	0.02865	0.02135	0.01528	0.01048	0.00687	0.00428	0.00253	0.00141	0.00073	0.00035	0.00015	0.00005	0.00002
CO2	0.08234	0.09253	0.10180	0.10985	0.11651	0.12175	0.12569	0.12850	0.13041	0.13163	0.13237	0.13278	0.13299		
H	0.00377	0.00231	0.00136	0.00076	0.00041	0.00021	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00858	0.00666	0.00506	0.00375	0.00271	0.00190	0.00129	0.00085	0.00054	0.00032	0.00018	0.00010	0.00005		
H2O	0.10510	0.11042	0.11473	0.11813	0.12073	0.12267	0.12407	0.12505	0.12570	0.12612	0.12638	0.12653	0.12661		
NO	0.01056	0.00832	0.00636	0.00470	0.00336	0.00231	0.00152	0.00096	0.00057	0.00033	0.00017	0.00008	0.00004		
N2	0.70033	0.70741	0.71339	0.71830	0.72219	0.72517	0.72735	0.72889	0.72993	0.73059	0.73099	0.73122	0.73133		
O	0.00361	0.00217	0.00124	0.00067	0.00034	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01328	0.01001	0.00729	0.00511	0.00345	0.00223	0.00138	0.00081	0.00045	0.00023	0.00011	0.00005	0.00002		
O2	0.01788	0.01466	0.01156	0.00877	0.00638	0.00445	0.00296	0.00188	0.00113	0.00064	0.00034	0.00017	0.00008		

ADD H2O(L)
ADD C(S)

	CASE= 0	O/F= 14.2857	F/A= 0.07000	PERCENT FUEL= 6.5421				PHI= 1.0258									
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0
RHO, G/CC	1.4057-3	1.5061-3	1.6219-3	1.7571-3	1.9168-3	2.1085-3	2.3428-3	2.6357-3	3.0147-3	3.5265-3	4.2371-3	5.2977-3	8.0699-3				
M, MOL WT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.861	28.937	28.974	28.981	33.109				
CP, CAL/(G)(K)	0.3261	0.3226	0.3188	0.3146	0.3101	0.3052	0.2994	0.2933	0.3026	0.2904	0.2704	0.2557	0.4049				
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2916	1.2990	1.3077	1.3053	1.3185	1.3423	1.3589	1.2112				
SON VEL,M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.6	549.2	513.0	476.8	438.8	394.9	302.1				

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00868	0.00870	0.00872	0.00872	0.00867			
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00502
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00042	0.00174	0.00238	0.00251	0.00000			
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00427	0.00321	0.00206	0.00088	0.00011	0.00000	0.00000	0.00000	0.00000			
CO2	0.12840	0.12876	0.12921	0.12978	0.13050	0.13141	0.13247	0.13361	0.13450	0.13430	0.13394	0.13385	0.13065				
H2	0.00278	0.00313	0.00358	0.00415	0.00488	0.00578	0.00684	0.00793	0.00745	0.00294	0.00054	0.00004	0.00000	0.00000			
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000			
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12224	0.12112	0.12085	0.12305	0.12436	0.12465	0.00503				
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000			
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72659	0.72719	0.72911	0.73003	0.73022	0.72657				

	CASE= 0	O/F= 14.2857	F/A= 0.07000	PERCENT FUEL= 6.5421				PHI= 1.0258									
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	1.2251-3	1.2787-3	1.3349-3	1.3941-3	1.4569-3	1.5237-3	1.5953-3	1.6725-3	1.7568-3	1.8494-3	1.9523-3	2.0671-3	2.1963-3				
M, MOL WT	28.148	28.329	28.479	28.600	28.691	28.757	28.799	28.821	28.831	28.834	28.835	28.836	28.836				
CP, CAL/(G)(K)	0.6888	0.6324	0.5778	0.5263	0.4787	0.4351	0.3964	0.3666	0.3493	0.3407	0.3360	0.3326	0.3294				
GAMMA (S)	1.1606	1.1661	1.1732	1.1822	1.1933	1.2066	1.2221	1.2373	1.2481	1.2543	1.2583	1.2614	1.2646				
SON VEL,M/SEC	979.8	961.3	943.7	927.0	911.0	895.8	881.0	865.8	848.5	829.0	808.1	786.3	763.8				

MOLE FRACTIONS

AR	0.00847	0.00852	0.00857	0.00860	0.00863	0.00865	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867			
CO	0.04032	0.03261	0.02581	0.02012	0.01560	0.01230	0.01015	0.00898	0.00844	0.00817	0.00798	0.00778	0.00755				
CO2	0.09212	0.10068	0.10818	0.11475	0.11939	0.12301	0.12535	0.12662	0.12721	0.12749	0.12769	0.12789	0.12812				
H	0.00218	0.00135	0.00081	0.00047	0.00026	0.00014	0.00008	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000				
H02	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00720	0.00571	0.00448	0.00352	0.00278	0.00226	0.00196	0.00184	0.00185	0.00195	0.00209	0.00227	0.00250				
H2O	0.11279	0.11681	0.12004	0.12254	0.12441	0.12573	0.12656	0.12698	0.12712	0.12709	0.12698	0.12681	0.12658				
N0	0.00857	0.00652	0.00475	0.00329	0.00213	0.00125	0.00065	0.00028	0.00011	0.00003	0.00001	0.00000	0.00000				
N2	0.70494	0.71054	0.71521	0.71897	0.72186	0.72395	0.72531	0.72605	0.72638	0.72651	0.72655	0.72656	0.72657				
O	0.00185	0.00107	0.00059	0.00030	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000				
OH	0.00984	0.00724	0.00512	0.00346	0.00222	0.00132	0.00072	0.00035	0.00015	0.00006	0.00002	0.00001	0.00000				
O2	0.01171	0.00895	0.00643	0.00429	0.00257	0.00132	0.00054	0.00017	0.00004	0.00001	0.00000	0.00000	0.00000				

ADD C(S)
ADD H2O(L)

CASE= 0 O/F= 10.0000 F/A= 0.10000 PERCENT FUEL= 9.0909 PHI= 1.4654

P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	1.0817-2	1.1590-2	1.2483-2	1.3532-2	1.4839-2	1.6660-2	1.9062-2	2.1821-2	2.5133-2	2.9409-2	3.5322-2	4.1271-2	4.71781-2	
M, MOL WT	26.627	26.628	26.632	26.650	26.788	27.341	28.155	28.649	28.873	28.959	28.984	33.657	35.341	
CP, CAL/(G)(K)	0.3460	0.3449	0.3457	0.3605	0.4684	0.6462	0.5944	0.4209	0.3373	0.3002	0.2835	0.2653	0.3332	
GAMMA (S)	1.2751	1.2765	1.2770	1.2712	1.2359	1.1983	1.1954	1.2364	1.2755	1.3028	1.3202	1.1804	1.2081	
SON VEL, M/SEC	772.8	747.0	719.9	689.9	649.6	603.6	563.7	535.8	507.0	473.7	435.2	341.5	292.0	

MOLE FRACTIONS

AR	0.00779	0.00779	0.00779	0.00780	0.00784	0.00800	0.00812	0.00815	0.00815	0.00810	0.00802	0.00780	0.00779	
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01406	0.02733	0.03559	0.04373	0.05426	0.08049	0.08148	
CH4	0.00000	0.00001	0.00005	0.00037	0.00291	0.01325	0.02110	0.02312	0.02277	0.01984	0.01470	0.00053	0.00000	
CO	0.10312	0.09955	0.09518	0.08941	0.07883	0.05448	0.02082	0.00494	0.00076	0.00006	0.00000	0.00000	0.00000	
CO2	0.07087	0.07443	0.07878	0.08436	0.09331	0.11092	0.12541	0.12668	0.12283	0.11709	0.11015	0.09314	0.09251	
H2	0.05978	0.06329	0.06745	0.07197	0.07311	0.05930	0.03603	0.01797	0.00703	0.00195	0.00032	0.00001	0.00000	
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.12756	0.16510	
H2O	0.10579	0.10225	0.09757	0.09283	0.08733	0.08374	0.09392	0.10865	0.12028	0.13037	0.14067	0.03717	0.00052	
NH3	0.00004	0.00006	0.00009	0.00015	0.00026	0.00035	0.00035	0.00031	0.00024	0.00016	0.00008	0.00000	0.00000	
N2	0.65261	0.65262	0.65268	0.65311	0.65643	0.66995	0.68019	0.68283	0.68235	0.67851	0.67179	0.65329	0.65260	

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000				PHI= 0.0000					
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	1.2560-3	1.3041-3	1.3555-3	1.4105-3	1.4699-3	1.5342-3	1.6042-3	1.6807-3	1.7648-3	1.8578-3	1.9610-3	2.0764-3	2.2061-3
M, MOL WT	28.858	28.893	28.918	28.936	28.947	28.955	28.959	28.962	28.964	28.964	28.965	28.965	28.965
CP, CAL/(G*IK)	0.4018	0.3830	0.3674	0.3546	0.3441	0.3355	0.3283	0.3221	0.3167	0.3117	0.3070	0.3026	0.2982
GAMMA (S)	1.2247	1.2323	1.2397	1.2468	1.2536	1.2599	1.2658	1.2715	1.2770	1.2824	1.2878	1.2933	1.2988
SON VEL, M/SEC	994.0	978.5	962.7	946.4	929.6	912.2	894.2	875.5	856.3	836.3	815.7	794.4	772.3

MOLE FRACTIONS

AR	0.00929	0.00930	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00003	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00027	0.00028	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03558	0.03120	0.02700	0.02304	0.01937	0.01601	0.01298	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207	
NO2	0.00006	0.00006	0.00006	0.00006	0.00005	0.00005	0.00005	0.00004	0.00004	0.00004	0.00003	0.00003	0.00002	
H2	0.76020	0.76334	0.76612	0.76857	0.77073	0.77261	0.77425	0.77566	0.77686	0.77786	0.77869	0.77935	0.77985	
O	0.00739	0.00496	0.00322	0.00202	0.00122	0.00070	0.00038	0.00020	0.00010	0.00004	0.00002	0.00001	0.00000	
O2	0.18718	0.19084	0.19399	0.19670	0.19902	0.20102	0.20272	0.20418	0.20540	0.20642	0.20725	0.20792	0.20843	

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000				PHI= 0.0000					
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	2.3532-3	2.5213-3	2.7152-3	2.9415-3	3.2089-3	3.5298-3	3.9220-3	4.4122-3	5.0426-3	5.8830-3	7.0596-3	8.8245-3	1.1766-2
M, MOL WT	28.965	28.965	28.965	28.965	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964
CP, CAL/(G*IK)	0.2939	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402
GAMMA (S)	1.3044	1.3102	1.3161	1.3223	1.3287	1.3357	1.3440	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.2	557.5	523.6	486.8	446.1	400.3	347.2

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	
O2	0.20881	0.20908	0.20926	0.20937	0.20943	0.20946	0.20948	0.20948	0.20949	0.20949	0.20949	0.20949	0.20949	

ADD H2O(L)

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465					
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	3.5301-3	3.7823-3	4.0732-3	4.4127-3	4.8138-3	5.2952-3	5.8835-3	6.6190-3	7.5645-3	8.8253-3	1.0590-2	1.3238-2	1.7962-2
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	29.479
CP, CAL/(G)(K)	0.2992	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2366
GAMMA (SI)	1.2974	1.3031	1.3090	1.3150	1.3215	1.3285	1.3368	1.3466	1.3574	1.3688	1.3799	1.3893	1.3225
SON VEL,M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	334.5

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01735
H2O	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.00227
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77318	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17641	0.17666	0.17652	0.17693	0.17698	0.17701	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	2.5090-3	2.6058-3	2.7090-3	2.8196-3	2.9388-3	3.0677-3	3.2080-3	3.3613-3	3.5297-3	3.7157-3	3.9223-3	4.1531-3	4.4127-3
M, MOL WT	28.824	28.866	28.898	28.921	28.937	28.948	28.956	28.961	28.963	28.965	28.966	28.967	28.967
CP, CAL/(G)(K)	0.4217	0.4009	0.3832	0.3684	0.3562	0.3460	0.3375	0.3302	0.3239	0.3183	0.3131	0.3083	0.3037
GAMMA (SI)	1.2156	1.2230	1.2305	1.2378	1.2449	1.2516	1.2579	1.2639	1.2697	1.2754	1.2809	1.2864	1.2919
SON VEL,M/SEC	990.9	975.2	959.4	943.2	926.5	909.3	891.4	872.9	853.8	834.0	813.5	792.3	770.3

MOLE FRACTIONS

AR	0.00919	0.00920	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00162	0.00107	0.00068	0.00041	0.00024	0.00013	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.01916	0.01974	0.02016	0.02044	0.02062	0.02074	0.02081	0.02084	0.02086	0.02087	0.02088	0.02088	0.02088
H	0.00026	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00020	0.00014	0.00009	0.00006	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01618	0.01695	0.01759	0.01811	0.01853	0.01885	0.01910	0.01928	0.01941	0.01950	0.01955	0.01959	0.01961
NO	0.03243	0.02843	0.02461	0.02101	0.01767	0.01461	0.01185	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189
NO2	0.00008	0.00007	0.00007	0.00007	0.00006	0.00006	0.00006	0.00005	0.00005	0.00004	0.00004	0.00003	0.00003
N2	0.75315	0.75630	0.75906	0.76147	0.76357	0.76540	0.76698	0.76833	0.76947	0.77041	0.77119	0.77180	0.77227
O	0.00478	0.00321	0.00209	0.00131	0.00079	0.00045	0.00025	0.00013	0.00006	0.00003	0.00001	0.00000	0.00000
OH	0.00600	0.00477	0.00369	0.00279	0.00204	0.00145	0.00100	0.00066	0.00041	0.00025	0.00014	0.00007	0.00004
O2	0.15693	0.15996	0.16266	0.16506	0.16718	0.16904	0.17064	0.17202	0.17319	0.17416	0.17495	0.17557	0.17605

ADD H20(1)

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0	0.0	0.0
RHO, G/CC	1.1769-2	1.2610-2	1.3580-2	1.4711-2	1.6049-2	1.7654-2	1.9615-2	2.2067-2	2.5219-2	2.9423-2	3.5307-2	4.4640-2	6.2408-2						
M, MOL HT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G*1K)	0.3091	0.3047	0.3002	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2481	0.2409						
GAMMA (S)	1.2852	1.2905	1.2961	1.3020	1.3084	1.3154	1.3228	1.3306	1.3386	1.3465	1.3541	1.3618	1.3693						
SON VEL, M/SEC	743.8	720.1	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	373.1	326.0						

MOL FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(1)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11350	0.11370	0.11363	0.11391	0.11396	0.11398	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862										
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	6.0386-5	6.3388-5	6.6465-5	6.9632-5	7.2915-5	7.6355-5	8.0007-5	8.3931-5	8.8197-5	9.2880-5	9.8063-5	1.0384-4	1.1034-4						
M, MOL HT	27.749	28.088	26.360	28.569	28.719	28.821	28.886	28.926	28.949	28.961	28.968	28.971	28.973						
CP, CAL/(G*1K)	0.9591	0.8443	0.7330	0.6303	0.5421	0.4720	0.4203	0.3843	0.3602	0.3443	0.3334	0.3256	0.3196						
GAMMA (S)	1.1421	1.1465	1.1539	1.1647	1.1789	1.1954	1.2126	1.2284	1.2417	1.2524	1.2608	1.2677	1.2737						
SON VEL, M/SEC	978.9	957.3	937.8	920.5	905.0	890.6	876.3	861.1	844.6	826.5	807.1	786.4	764.7						

MOL FRACTIONS

AR	0.00859	0.00869	0.00878	0.00884	0.00889	0.00892	0.00894	0.00895	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.03355	0.02582	0.01855	0.01237	0.00765	0.00438	0.00233	0.00114	0.00052	0.00021	0.00008	0.00003	0.00001						
CO2	0.04333	0.05199	0.06002	0.06678	0.07192	0.07547	0.07770	0.07900	0.07968	0.08002	0.08017	0.08024	0.08026						
H	0.00878	0.00525	0.00298	0.00159	0.00080	0.00037	0.00016	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000						
H02	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2	0.00583	0.00433	0.00304	0.00202	0.00127	0.00075	0.00042	0.00022	0.00011	0.00005	0.00002	0.00001	0.00000						
H2O	0.05161	0.05777	0.06283	0.06680	0.06979	0.07197	0.07349	0.07453	0.07522	0.07566	0.07593	0.07608	0.07617						
NO	0.02172	0.01911	0.01654	0.01410	0.01184	0.00979	0.00795	0.00632	0.00491	0.00370	0.00270	0.00190	0.00128						
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
N2	0.70848	0.71857	0.72693	0.73355	0.73858	0.74225	0.74486	0.74670	0.74800	0.74893	0.74960	0.75009	0.75045						
O	0.02088	0.01400	0.00906	0.00566	0.00340	0.00195	0.00107	0.00055	0.00027	0.00012	0.00005	0.00002	0.00001						
OH	0.02239	0.01838	0.01455	0.01113	0.00823	0.00588	0.00405	0.00268	0.00169	0.00102	0.00058	0.00031	0.00015						
O2	0.07483	0.07606	0.07671	0.07714	0.07762	0.07826	0.07902	0.07983	0.08062	0.08131	0.08190	0.08236	0.08271						

ADD H2O(L)

CASE=	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327								
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	2.3542E-4	2.5224E-4	2.7164E-4	2.9429E-4	3.2103E-4	3.5313E-4	3.9237E-4	4.4141E-4	5.0448E-4	5.8955E-4	7.0627E-4	8.8283E-4	1.2548E-3				
M, MOL WT	28.976	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977
CP, CAL/(G)(K)	0.3187	0.3141	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.2480				
GAMMA (S)	1.2743	1.2794	1.2847	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.3801				
SON VEL, M/SEC	740.6	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	306.0				

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00998	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09439	0.09440	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74369	0.74363	0.74352	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
O2	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.05301	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

CASE=	0	0/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327								
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	1.8294E-4	1.9151E-4	2.0038E-4	2.0959E-4	2.1921E-4	2.2937E-4	2.4021E-4	2.5192E-4	2.6467E-4	2.7839E-4	2.9423E-4	3.1156E-4	3.3105E-4				
M, MOL WT	28.021	28.287	28.501	28.663	28.790	28.859	28.910	28.940	28.957	28.967	28.972	28.975	28.976				
CP, CAL/(G)(K)	0.8330	0.7423	0.6538	0.5720	0.5018	0.4461	0.4051	0.3766	0.3574	0.3445	0.3356	0.3289	0.3235				
GAMMA (S)	1.1485	1.1539	1.1621	1.1733	1.1873	1.2027	1.2179	1.2314	1.2425	1.2513	1.2583	1.2641	1.2693				
SON VEL, M/SEC	975.8	956.9	938.8	922.4	907.3	892.7	877.8	862.0	844.7	826.1	806.2	785.3	763.4				

MOLE FRACTIONS

AR	0.00859	0.00867	0.00874	0.00879	0.00882	0.00885	0.00886	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.03325	0.02491	0.01750	0.01147	0.00701	0.00398	0.00210	0.00103	0.00047	0.00019	0.00007	0.00002	0.00001				
CO2	0.06280	0.07205	0.08019	0.08677	0.09164	0.09494	0.09699	0.09817	0.09879	0.09910	0.09923	0.09929	0.09931				
H	0.00501	0.00296	0.00166	0.00088	0.00044	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000				
H2O	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00569	0.00412	0.00285	0.00137	0.00017	0.00069	0.00038	0.00020	0.00010	0.00004	0.00002	0.00001	0.00000				
H2O	0.07375	0.07911	0.08342	0.08674	0.08922	0.09099	0.09223	0.09306	0.09361	0.09395	0.09416	0.09429	0.09435				
NO	0.01836	0.01585	0.01350	0.01138	0.00948	0.00780	0.00632	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102				
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
N2	0.71030	0.71839	0.72504	0.73028	0.73424	0.73711	0.73914	0.74057	0.74158	0.74230	0.74283	0.74321	0.74349				
O	0.01018	0.00670	0.00428	0.00264	0.00157	0.00090	0.00049	0.00025	0.00012	0.00006	0.00002	0.00001	0.00000				
OH	0.01869	0.01489	0.01152	0.00867	0.00634	0.00449	0.00308	0.00203	0.00128	0.00077	0.00044	0.00023	0.00011				
O2	0.05335	0.05233	0.05128	0.05048	0.05006	0.05004	0.05031	0.05076	0.05127	0.05176	0.05219	0.05254	0.05282				

ADD H2O(L)

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792								
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	4.7088-4	5.0451-4	5.4332-4	5.8860-4	6.4211-4	7.0632-4	7.8480-4	8.8290-4	1.0090-3	1.1772-3	1.4126-3	1.7658-3	2.6061-3				
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979				
CP, CAL/(G*1K)	0.3228	0.3183	0.3137	0.3090	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.2400				
GAMMA IS1	1.2699	1.2746	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.3805				
SON VEL, M/SEC	739.3	715.5	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	303.0				

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.09558
H2O	0.11222	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.01566
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73684	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
O2	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.02365	0.02374	0.02381	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792								
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1				
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	3.6652-4	3.8337-4	4.0091-4	4.1922-4	4.3844-4	4.5877-4	4.8047-4	5.0389-4	5.2941-4	5.5715-4	5.8852-4	6.2318-4	6.6216-4				
M, MOL WT	28.070	28.312	28.511	28.666	28.781	28.86	28.912	28.943	28.961	28.970	28.975	28.977	28.978				
CP, CAL/(G*1K)	0.7923	0.7161	0.6406	0.5687	0.5041	0.4500	0.4086	0.3794	0.3598	0.3471	0.3385	0.3323	0.3273				
GAMMA IS1	1.1509	1.1559	1.1633	1.1734	1.1862	1.2009	1.2159	1.2294	1.2404	1.2488	1.2553	1.2606	1.2653				
SON VEL, M/SEC	977.0	957.4	939.2	922.4	906.9	892.0	877.1	861.2	843.9	825.2	805.2	784.1	762.1				

MOLE FRACTIONS

AR	0.00852	0.00860	0.00866	0.00870	0.00874	0.00876	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.03720	0.02827	0.02026	0.01361	0.00850	0.00492	0.00263	0.00130	0.00059	0.00024	0.00009	0.00003	0.00001				
CO2	0.07711	0.08703	0.09584	0.10313	0.10871	0.11261	0.11511	0.11657	0.11735	0.11774	0.11791	0.11798	0.11800				
H	0.00379	0.00226	0.00129	0.00069	0.00035	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000				
H2O	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00651	0.00478	0.00337	0.00226	0.00144	0.00086	0.00048	0.00025	0.00012	0.00006	0.00002	0.00001	0.00000				
H2O	0.09256	0.09770	0.10184	0.10504	0.10743	0.10914	0.11030	0.11107	0.11156	0.11185	0.11204	0.11214	0.11219				
NO	0.01422	0.01189	0.00982	0.00803	0.00653	0.00527	0.00422	0.00333	0.00258	0.00195	0.00142	0.00100	0.00067				
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
N2	0.70684	0.71415	0.72024	0.72509	0.72877	0.73143	0.73326	0.73449	0.73531	0.73587	0.73625	0.73652	0.73671				
O	0.00559	0.00357	0.00221	0.00132	0.00077	0.00043	0.00023	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000				
OH	0.01551	0.01207	0.00915	0.00675	0.00486	0.00334	0.00232	0.00152	0.00096	0.00058	0.00033	0.00017	0.00008				
O2	0.03214	0.02965	0.02732	0.02535	0.02390	0.02300	0.02259	0.02252	0.02266	0.02289	0.02313	0.02335	0.02352				

ADD H2O(L)

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	440.0	400.0	300.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	80.3	80.3
RHO, G/CC	9.4178-4	1.0091-3	1.0867-3	1.1773-3	1.2843-3	1.4127-3	1.5697-3	1.7659-3	2.0182-3	2.3546-3	2.8255-3	3.5318-3	5.3455-3	32.897	32.897
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981
CP, CAL/(G*1K)	0.3266	0.3217	0.3170	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.2590	0.4580	0.4580
GAMMA (S)	1.2661	1.2710	1.2760	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.3600	1.2003	1.2003
SON VEL, M/SEC	738.2	714.5	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	301.7	301.7	301.7

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13310	0.13314	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.12655	0.12657	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658	0.12658
ND	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73139	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1600.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2420.3	2420.3
RHO, G/CC	7.3315-4	7.6601-4	8.0043-4	8.3664-4	8.7494-4	9.1569-4	9.5939-4	1.0066-3	1.0580-3	1.1144-3	1.1768-3	1.2463-3	1.3243-3	1.3243-3	1.3243-3
M, MOL WT	28.074	28.285	28.462	28.605	28.718	28.803	28.866	28.909	28.939	28.957	28.969	28.975	28.978	28.978	28.978
CP, CAL/(G*1K)	0.7399	0.6775	0.6172	0.5609	0.5102	0.4663	0.4297	0.4004	0.3776	0.3605	0.3480	0.3388	0.3319	0.3319	0.3319
GAMMA (S)	1.1554	1.1602	1.1667	1.1749	1.1848	1.1959	1.2077	1.2194	1.2305	1.2403	1.2486	1.2554	1.2612	1.2612	1.2612
SON VEL, M/SEC	978.8	959.6	941.3	924.0	907.3	891.0	874.8	858.2	840.9	822.6	803.1	782.6	760.9	760.9	760.9

MOLE FRACTIONS

AR	0.00846	0.00852	0.00858	0.00862	0.00865	0.00868	0.00870	0.00871	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.01195	0.03340	0.02567	0.01902	0.01355	0.00926	0.00606	0.00377	0.00222	0.00124	0.00064	0.00031	0.00013	0.00013	0.00013
CO2	0.08704	0.09656	0.10510	0.11241	0.11840	0.12308	0.12657	0.12906	0.13074	0.13182	0.13246	0.13283	0.13301	0.13301	0.13301
H	0.00289	0.00177	0.00104	0.00059	0.00031	0.00016	0.00008	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00501	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00957	0.00587	0.00445	0.00329	0.00238	0.00167	0.00114	0.00075	0.00047	0.00028	0.00016	0.00009	0.00004	0.00004	0.00004
H2O	0.10777	0.11245	0.11623	0.11920	0.12148	0.12318	0.12440	0.12525	0.12582	0.12619	0.12641	0.12655	0.12662	0.12662	0.12662
ND	0.01004	0.00787	0.00599	0.00441	0.00314	0.00215	0.00142	0.00089	0.00053	0.00030	0.00016	0.00008	0.00004	0.00004	0.00004
N2	0.70353	0.70993	0.71533	0.71973	0.72321	0.72586	0.72781	0.72918	0.73009	0.73068	0.73104	0.73124	0.73125	0.73125	0.73125
O	0.00280	0.00168	0.00096	0.00052	0.00026	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01184	0.00887	0.00643	0.00449	0.00302	0.00195	0.00120	0.00071	0.00039	0.00020	0.00010	0.00004	0.00002	0.00002	0.00002
O2	0.01610	0.01307	0.01023	0.00771	0.00558	0.00388	0.00258	0.00163	0.00098	0.00056	0.00030	0.00014	0.00006	0.00006	0.00006

ADD H2O(L)

CASE=	0	0/F=100,0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465										
P, ATM	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0		
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	4.7069-3	5.0431-3	5.4310-3	5.8836-3	6.4184-3	7.0602-3	7.8447-3	8.8253-3	1.0086-2	1.1767-2	1.4120-2	1.7651-2	2.3964-2		
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	29.496	
CP, CAL/(G)(K)	0.2992	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2387		
GAMMA (S)	1.2975	1.3031	1.3090	1.3150	1.3215	1.3285	1.3368	1.3465	1.3574	1.3688	1.3799	1.3893	1.3927		
SON VEL,M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	335.7		

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01792
H2O	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01792
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77318	0.77321	0.77322	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17640	0.17665	0.17662	0.17692	0.17698	0.17701	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	0	0/F=100,0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465										
P, ATM	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	0.2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0		
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3		
RHO, G/CC	3.7665-3	3.9109-3	4.0650-3	4.2305-3	4.4088-3	4.6020-3	4.8122-3	5.0421-3	5.2947-3	5.5736-3	5.8834-3	6.2296-3	6.6190-3		
M, MOL WT	28.846	28.882	28.909	28.928	28.942	28.951	28.958	28.962	28.964	28.966	28.967	28.967	28.967	29.496	
CP, CAL/(G)(K)	0.4098	0.3919	0.3767	0.3638	0.3530	0.3439	0.3361	0.3294	0.3234	0.3180	0.3129	0.3082	0.3036		
GAMMA (S)	1.2196	1.2265	1.2333	1.2401	1.2466	1.2528	1.2588	1.2645	1.2701	1.2756	1.2810	1.2865	1.2919		
SON VEL,M/SEC	952.1	976.4	960.3	944.0	927.1	909.7	891.7	873.1	853.9	834.1	813.5	792.3	770.3		

MOLE FRACTIONS

AR	0.00919	0.00920	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00174	0.00088	0.00056	0.00034	0.00019	0.00011	0.00005	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01945	0.01994	0.02028	0.02052	0.02067	0.02076	0.02082	0.02085	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00019	0.00011	0.00006	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00003	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00017	0.00011	0.00008	0.00005	0.00003	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01652	0.01721	0.01779	0.01826	0.01864	0.01893	0.01915	0.01931	0.01943	0.01951	0.01956	0.01959	0.01961		
NO	0.03249	0.02847	0.02463	0.02102	0.01767	0.01461	0.01185	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189		
NO2	0.00009	0.00009	0.00009	0.00008	0.00008	0.00007	0.00007	0.00006	0.00006	0.00005	0.00005	0.00004	0.00004		
N2	0.75371	0.75669	0.75932	0.76164	0.76368	0.76547	0.76702	0.76835	0.76948	0.77042	0.77119	0.77180	0.77227		
O	0.00391	0.00262	0.00171	0.00107	0.00064	0.00037	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000		
OH	0.00548	0.00434	0.00336	0.00253	0.00185	0.00131	0.00090	0.00059	0.00037	0.00022	0.00013	0.00007	0.00003		
O2	0.15741	0.16030	0.16290	0.16522	0.16728	0.16910	0.17068	0.17204	0.17320	0.17416	0.17494	0.17557	0.17605		

ADD H2O(L)

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHD, G/CC	9.4145-3	1.0087-2	1.0863-2	1.1768-2	1.2838-2	1.4122-2	1.5691-2	1.7652-2	2.0174-2	2.3536-2	2.8243-2	3.5304-2	4.8933-2
M, MOL HT	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	30.115
CP, CAL/(G)(K)	0.3042	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.2750
GAMMA (S)	1.2911	1.2966	1.3023	1.3083	1.3147	1.3217	1.3301	1.3399	1.3508	1.3623	1.3737	1.3837	1.3271
SON VEL, M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	331.5

MOL FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.03803
H2	0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03883
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76517	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14464	0.14486	0.14562	0.14511	0.14516	0.14519	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3
RHD, G/CC	6.2765-3	6.5175-3	6.7748-3	7.0507-3	7.3482-3	7.6703-3	8.0208-3	8.4040-3	8.8251-3	9.2901-3	9.8066-3	1.0384-2	1.1033-2
M, MOL HT	28.842	28.880	28.908	28.928	28.943	28.952	28.959	28.964	28.966	28.968	28.969	28.970	28.970
CP, CAL/(G)(K)	0.4179	0.3989	0.3828	0.3694	0.3583	0.3490	0.3411	0.3343	0.3283	0.3229	0.3179	0.3132	0.3086
GAMMA (S)	1.2155	1.2224	1.2293	1.2360	1.2424	1.2485	1.2542	1.2597	1.2651	1.2703	1.2754	1.2806	1.2858
SON VEL, M/SEC	990.5	974.8	958.8	942.4	925.5	908.1	890.1	871.4	852.2	832.3	811.7	790.5	768.4

MOL FRACTIONS

AR	0.00910	0.00911	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00228	0.00150	0.00094	0.00057	0.00033	0.00018	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
CO2	0.03860	0.03944	0.04004	0.04044	0.04070	0.04086	0.04096	0.04101	0.04104	0.04105	0.04106	0.04106	0.04106
H	0.00020	0.00011	0.00006	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00005	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.00030	0.00020	0.00013	0.00009	0.00005	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.03494	0.03584	0.03659	0.03719	0.03766	0.03802	0.03830	0.03849	0.03863	0.03873	0.03879	0.03883	0.03885
NO	0.00290	0.00258	0.00213	0.00180	0.00159	0.00134	0.00107	0.00087	0.00067	0.00049	0.00036	0.00025	0.00017
NO2	0.00010	0.00009	0.00009	0.00009	0.00008	0.00008	0.00007	0.00007	0.00006	0.00006	0.00005	0.00004	0.00004
N2	0.74769	0.75050	0.75297	0.75513	0.75702	0.75866	0.76007	0.76129	0.76232	0.76317	0.76387	0.76443	0.76485
O	0.00273	0.00183	0.00119	0.00075	0.00045	0.00026	0.00014	0.00007	0.00004	0.00002	0.00001	0.00000	0.00000
OH	0.00666	0.00524	0.00403	0.00302	0.00220	0.00156	0.00107	0.00070	0.00044	0.00027	0.00015	0.00008	0.00004
O2	0.12815	0.13050	0.13267	0.13465	0.13645	0.13805	0.13946	0.14069	0.14173	0.14260	0.14331	0.14388	0.14431

ADD H2O(1)

CASE=	0	0/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862								
P, ATH	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	1.1770-4	1.2611-4	1.3581-4	1.4713-4	1.6050-4	1.7655-4	1.9617-4	2.2069-4	2.5222-4	2.9425-4	3.5310-4	4.4138-4	5.9292-4				
M, MOL WT	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	29.192			
CP, CAL/(G*IK)	0.3144	0.3096	0.3050	0.3003	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	1.8240				
GAMMA (S)	1.2792	1.2846	1.2902	1.2960	1.3024	1.3095	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.1429				
SON VEL,M/SEC	742.0	718.4	693.7	668.0	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	312.5				

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(1)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00745
H2O	0.07622	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.06981
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75070	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08314	0.08325	0.08332	0.08336	0.08338	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

CASE=	0	0/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862								
P, ATH	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	1.2202-4	1.2775-4	1.3365-4	1.3977-4	1.4616-4	1.5292-4	1.6014-4	1.6793-4	1.7643-4	1.8578-4	1.9613-4	2.0769-4	2.2068-4				
M, MOL WT	28.035	28.303	28.514	28.672	28.785	28.860	28.908	28.938	28.955	28.964	28.969	28.972	28.973				
CP, CAL/(G*IK)	0.8312	0.7348	0.6430	0.5606	0.4919	0.4385	0.3995	0.3722	0.3536	0.3408	0.3317	0.3248	0.3192				
GAMMA (S)	1.1495	1.1554	1.1642	1.1761	1.1905	1.2060	1.2211	1.2346	1.2457	1.2548	1.2621	1.2684	1.2740				
SON VEL,M/SEC	977.0	957.3	939.5	923.4	908.4	893.9	879.0	863.1	845.8	827.3	807.5	786.6	764.8				

MOLE FRACTIONS

AR	0.00896	0.00876	0.00882	0.00887	0.00891	0.00893	0.00895	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.02748	0.02043	0.01421	0.00923	0.00559	0.00315	0.00166	0.00081	0.00037	0.00015	0.00006	0.00002	0.00001				
CO2	0.05019	0.05798	0.06479	0.07021	0.07416	0.07680	0.07843	0.07936	0.07985	0.08009	0.08020	0.08025	0.08026				
H	0.00547	0.00323	0.00181	0.00096	0.00048	0.00022	0.00010	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00452	0.00327	0.00225	0.00117	0.00092	0.00054	0.00030	0.00016	0.00008	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.05665	0.06162	0.06563	0.06876	0.07110	0.07281	0.07402	0.07485	0.07540	0.07576	0.07598	0.07611	0.07619				
NO	0.02183	0.01913	0.01652	0.01408	0.01183	0.00979	0.00795	0.00632	0.00491	0.00370	0.00270	0.00190	0.00128				
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71585	0.72413	0.73091	0.73624	0.74028	0.74326	0.74543	0.74700	0.74815	0.74900	0.74963	0.75011	0.75045				
O	0.01477	0.00987	0.00639	0.00399	0.00240	0.00138	0.00076	0.00039	0.00019	0.00008	0.00003	0.00001	0.00000				
OH	0.01972	0.01594	0.01249	0.00948	0.00698	0.00497	0.00342	0.00226	0.00143	0.00086	0.00049	0.00026	0.00013				
O2	0.07481	0.07561	0.07616	0.07669	0.07734	0.07813	0.07899	0.07985	0.08065	0.08134	0.08191	0.08237	0.08271				

ADD H2OIL

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=			5.6604	PHI=			0.8792	
P, ATH	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	7.0631-4	7.5677-4	8.1498-4	8.8290-4	9.6316-4	1.0595-3	1.1772-3	1.3244-3	1.5135-3	1.7658-3	2.1190-3	2.6487-3	3.9321-3	
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	32.266
CP, CAL/(G*IK)	0.3227	0.3183	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.2502	0.5102
GAMMA (S)	1.2699	1.2746	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.3760	1.1960
SON VEL, M/SEC	739.3	715.5	690.9	665.2	639.4	610.4	580.9	549.7	516.6	480.2	440.4	395.6	304.1	

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2OIL	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10186
H2O	0.11222	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.01038
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73684	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00004	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02381	0.02384	0.02386	0.02387	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=			5.6604	PHI=			0.8792	
P, ATH	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3
RHO, G/CC	4.9021-4	5.1237-4	5.3547-4	5.5963-4	5.8504-4	6.1198-4	6.4080-4	6.7195-4	7.0592-4	7.4329-4	7.8470-4	8.3092-4	8.8268-4	
M, MOL WT	28.158	28.379	28.560	28.701	28.804	28.875	28.920	28.947	28.963	28.971	28.975	28.978	28.978	28.978
CP, CAL/(G*IK)	0.7562	0.6845	0.6137	0.5468	0.4873	0.4363	0.4011	0.3750	0.3575	0.3459	0.3380	0.3321	0.3272	0.3226
GAMMA (S)	1.1539	1.1593	1.1671	1.1776	1.1905	1.2049	1.2191	1.2317	1.2418	1.2496	1.2557	1.2608	1.2654	1.2699
SON VEL, M/SEC	976.7	957.6	939.9	923.5	908.1	893.3	878.1	861.9	844.4	825.4	805.3	784.2	762.2	

MOLE FRACTIONS

AR	0.00855	0.00862	0.00867	0.00871	0.00875	0.00877	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.03421	0.02571	0.01824	0.01212	0.00750	0.00431	0.00229	0.00113	0.00051	0.00021	0.00008	0.00003	0.00001	0.00001
CO2	0.08045	0.08986	0.09807	0.10476	0.10980	0.11328	0.11548	0.11676	0.11744	0.11777	0.11792	0.11798	0.11800	0.11800
H	0.00311	0.00185	0.00104	0.00056	0.00028	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00585	0.00428	0.00299	0.00200	0.00126	0.00075	0.00042	0.00022	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000
N2	0.09442	0.09910	0.10285	0.10575	0.10790	0.10943	0.11048	0.11118	0.11162	0.11189	0.11205	0.11215	0.11220	0.11220
NO	0.01399	0.01171	0.00968	0.00794	0.00647	0.00524	0.00420	0.00333	0.00258	0.00195	0.00142	0.00100	0.00067	0.00040
NO2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O	0.07917	0.11596	0.17157	0.22601	0.27937	0.33179	0.38346	0.43460	0.48536	0.53589	0.58626	0.63652	0.68671	0.73671
O2	0.00475	0.00304	0.00188	0.00113	0.00065	0.00037	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000
OH	0.01445	0.01121	0.00849	0.00627	0.00451	0.00317	0.00216	0.00142	0.00089	0.00054	0.00030	0.00016	0.00008	0.00004
O2	0.03101	0.02865	0.02649	0.02473	0.02348	0.02275	0.02245	0.02246	0.02263	0.02288	0.02313	0.02335	0.02352	0.02352

ADD H2O(L)

CASE= 0 O/F= 14.6540 F/A= 0.06824 PERCENT FUEL= 6.3882 PHI= 1.0000

P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0
RHO, G/CC	1.4127-3	1.5136-3	1.6301-3	1.7659-3	1.9265-3	2.1191-3	2.3546-3	2.6489-3	3.0273-3	3.5318-3	4.2382-3	5.2978-3	8.0416-3	0.0	0.0
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	32.993
CP, CAL/(G*1K)	0.3264	0.3216	0.3170	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.2536	0.2490	0.2450
GAMMA (S)	1.2663	1.2711	1.2761	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.3729	1.3860	1.4000
SON VEL, M/SEC	738.2	714.5	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	302.8	0.0	0.0

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13310	0.13314	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.12160
H2O	0.12665	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.00507
NO	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73140	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE= 0 O/F= 14.6540 F/A= 0.06824 PERCENT FUEL= 6.3882 PHI= 1.0000

P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3
RHO, G/CC	1.2275-3	1.2812-3	1.3376-3	1.3971-3	1.4602-3	1.5276-3	1.6000-3	1.6783-3	1.7637-3	1.8576-3	1.9614-3	2.0772-3	2.2072-3	2.3520-3	2.5140-3
M, MOL WT	28.203	28.385	28.538	28.661	28.757	28.830	28.883	28.920	28.945	28.961	28.971	28.976	28.979	28.980	28.981
CP, CAL/(G*1K)	0.6885	0.6331	0.5800	0.5306	0.4865	0.4485	0.4169	0.3915	0.3718	0.3569	0.3459	0.3376	0.3313	0.3260	0.3210
GAMMA (S)	1.1605	1.1657	1.1726	1.1810	1.1907	1.2015	1.2126	1.2235	1.2336	1.2424	1.2500	1.2563	1.2616	1.2660	1.2700
SON VEL, M/SEC	978.7	960.2	942.5	925.5	909.0	892.7	876.3	859.5	841.8	823.2	803.6	782.8	761.0	738.2	714.5

MOLE FRACTIONS

AR	0.00850	0.00855	0.00860	0.00864	0.00866	0.00869	0.00870	0.00871	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.03704	0.02922	0.02229	0.01641	0.01164	0.00792	0.00517	0.00321	0.00189	0.00105	0.00054	0.00026	0.00011	0.00005	0.00002
CO2	0.09254	0.10120	0.10893	0.11628	0.12249	0.12754	0.13254	0.13754	0.14254	0.14754	0.15254	0.15754	0.16254	0.16754	0.17254
H	0.00207	0.00126	0.00074	0.00042	0.00022	0.00011	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
H2O	0.00646	0.00499	0.00378	0.00280	0.00202	0.00142	0.00097	0.00063	0.00040	0.00024	0.00014	0.00007	0.00004	0.00002	0.00001
H2O	0.11068	0.11465	0.11795	0.12037	0.12239	0.12372	0.12475	0.12547	0.12595	0.12626	0.12646	0.12657	0.12663	0.12666	0.12668
NO	0.00939	0.00732	0.00554	0.00407	0.00289	0.00197	0.00130	0.00082	0.00049	0.00028	0.00015	0.00007	0.00003	0.00001	0.00000
N2	0.70709	0.71274	0.71747	0.72131	0.72433	0.72663	0.72831	0.72949	0.73028	0.73079	0.73109	0.73127	0.73136	0.73138	0.73140
O	0.00202	0.00120	0.00068	0.00037	0.00019	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01020	0.00759	0.00547	0.00381	0.00256	0.00165	0.00101	0.00059	0.00033	0.00017	0.00008	0.00004	0.00002	0.00001	0.00000
O2	0.01400	0.01125	0.00873	0.00653	0.00470	0.00325	0.00216	0.00136	0.00082	0.00045	0.00025	0.00012	0.00005	0.00002	0.00001

ADD H20(L)
ADD C(S)

	CASE= 0	O/F= 14.2857	F/A= 0.07000	PERCENT FUEL= 6.5421		PHI= 1.0258								
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	3.5141-3	3.7651-3	4.0548-3	4.3927-3	4.7920-3	5.2712-3	5.8570-3	6.5899-3	7.5442-3	8.8210-3	1.0594-2	1.3244-2	2.0245-2	
M, MOL WT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836
CP, CAL/(G*IK)	0.3261	0.3225	0.3188	0.3146	0.3101	0.3052	0.2995	0.2964	0.3054	0.2851	0.2688	0.2596	0.3405	
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2916	1.2990	1.3054	1.3032	1.3236	1.3439	1.3591	1.2315	
SON VEL, M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.6	548.7	512.4	477.6	439.1	394.9	304.1	

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00868	0.00869	0.00871	0.00872	0.00872	0.00867	0.00867
C (S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00502
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00006	0.00090	0.00200	0.00243	0.00251	0.00000	0.00000
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00427	0.00320	0.00202	0.00067	0.00007	0.00000	0.00000	0.00000	0.00000
CO2	0.12840	0.12876	0.12921	0.12978	0.13050	0.13141	0.13247	0.13362	0.13436	0.13415	0.13391	0.13385	0.13065	
H2	0.00278	0.00313	0.00359	0.00415	0.00488	0.00577	0.00683	0.00776	0.00573	0.00193	0.00035	0.00003	0.00000	
H20(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.12708
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12224	0.12118	0.12172	0.12360	0.12447	0.12466	0.00201	
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00003	0.00005	0.00005	0.00003	0.00001	0.00000	
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72666	0.72799	0.72949	0.73010	0.73022	0.72657	

	CASE= 0	O/F= 14.2857	F/A= 0.07000	PERCENT FUEL= 6.5421		PHI= 1.0258								
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	
RHO, G/CC	2.4628-3	2.5674-3	2.6776-3	2.7941-3	2.9178-3	3.0500-3	3.1919-3	3.3457-3	3.5137-3	3.6989-3	3.9045-3	4.1343-3	4.3927-3	
M, MOL WT	28.793	28.441	28.563	28.659	28.731	28.781	28.811	28.826	28.832	28.835	28.836	28.836	28.836	28.836
CP, CAL/(G*IK)	0.6289	0.5805	0.5340	0.4902	0.4495	0.4121	0.3803	0.3581	0.3459	0.3396	0.3356	0.3325	0.3294	
GAMMA (S)	1.1679	1.1739	1.1815	1.1908	1.2021	1.2154	1.2298	1.2422	1.2503	1.2551	1.2585	1.2615	1.2646	
SON VEL, M/SEC	980.3	962.6	945.6	929.4	913.7	898.6	883.6	867.4	849.2	829.2	808.8	786.4	763.8	

MOLE FRACTIONS

AR	0.00851	0.00856	0.00859	0.00862	0.00864	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867
CO	0.03444	0.02775	0.02200	0.01729	0.01367	0.01112	0.00956	0.00875	0.00837	0.00815	0.00797	0.00778	0.00755	
CO2	0.09868	0.10607	0.11239	0.11775	0.12352	0.12430	0.12600	0.12688	0.12729	0.12752	0.12770	0.12789	0.12812	
H	0.00140	0.00087	0.00052	0.00030	0.00017	0.00010	0.00005	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
H2O	0.00591	0.00471	0.00373	0.00297	0.00241	0.00203	0.00184	0.00179	0.00184	0.00194	0.00209	0.00227	0.00250	
H2O	0.11609	0.11929	0.12185	0.12382	0.12527	0.12626	0.12684	0.12711	0.12717	0.12711	0.12698	0.12681	0.12658	
N2	0.00762	0.00572	0.00410	0.00278	0.00175	0.00099	0.00049	0.00021	0.00008	0.00002	0.00001	0.00000	0.00000	
O	0.70906	0.71376	0.71764	0.72072	0.72306	0.72469	0.72570	0.72622	0.72644	0.72653	0.72656	0.72656	0.72657	
OH	0.00116	0.00066	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
O2	0.00791	0.00575	0.00403	0.00269	0.00170	0.00099	0.00053	0.00025	0.00011	0.00004	0.00001	0.00000	0.00000	
O2	0.0.321	0.00685	0.00478	0.00306	0.00173	0.00082	0.00031	0.00009	0.00002	0.00000	0.00000	0.00000	0.00000	

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000				PHI= 0.0000					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	2.5148-3	2.6102-3	2.7122-3	2.8219-3	2.9403-3	3.0687-3	3.2086-3	3.3616-3	3.5298-3	3.7156-3	3.9221-3	4.1528-3	4.4123-3
M, MOL WT	28.889	28.915	28.932	28.945	28.953	28.958	28.961	28.963	28.964	28.965	28.965	28.965	28.965
CP, CAL/(G)(K)	0.3846	0.3704	0.3585	0.3485	0.3401	0.3330	0.3268	0.3213	0.3162	0.3115	0.3069	0.3025	0.2982
GAMMA (S)	1.2312	1.2377	1.2440	1.2501	1.2559	1.2615	1.2669	1.2721	1.2773	1.2826	1.2879	1.2933	1.2988
SON VEL, M/SEC	996.1	980.3	964.1	947.5	930.4	912.7	894.5	875.7	856.4	836.4	815.7	794.4	772.3

MOLE FRACTIONS

AR	0.00930	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00028	0.00029	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03572	0.03127	0.02704	0.02706	0.01938	0.01601	0.01298	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207
NO2	0.00009	0.00009	0.00008	0.00008	0.00008	0.00007	0.00007	0.00006	0.00006	0.00005	0.00005	0.00004	0.00004
N2	0.76097	0.76387	0.76647	0.76879	0.77086	0.77268	0.77429	0.77568	0.77687	0.77787	0.77869	0.77935	0.77985
O	0.00524	0.00351	0.00228	0.00143	0.00086	0.00049	0.00027	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000
O2	0.18839	0.19165	0.19451	0.19702	0.19921	0.20112	0.20277	0.20419	0.20540	0.20642	0.20725	0.20791	0.20842

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000				PHI= 0.0000					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	4.7065-3	5.0426-3	5.4305-3	5.8830-3	6.4178-3	7.0596-3	7.8440-3	8.8245-3	1.0085-2	1.1766-2	1.4119-2	1.7649-2	2.3532-2
M, MOL WT	28.965	28.965	28.965	28.965	28.965	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964
CP, CAL/(G)(K)	0.2939	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402
GAMMA (S)	1.3044	1.3102	1.3161	1.3222	1.3287	1.3356	1.3440	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	613.2	589.2	557.5	523.6	486.8	446.1	400.3	347.2

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089
O2	0.20880	0.20907	0.20925	0.20936	0.20943	0.20946	0.20948	0.20948	0.20949	0.20949	0.20949	0.20949	0.20949

ADD H2O(L)

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465						
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	7.0603-3	7.5646-3	8.1465-3	8.8253-3	9.6276-3	1.0590-2	1.1767-2	1.3238-2	1.5129-2	1.7651-2	2.1181-2	2.6476-2	3.5966-2	
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	29.513
CP, CAL/(G*IK)	0.2992	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2377	
GAMMA (S)	1.2975	1.3031	1.3089	1.3150	1.3215	1.3285	1.3368	1.3465	1.3574	1.3688	1.3799	1.3893	1.3439	
SON VEL./M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	337.0	

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01849
H2	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.00113
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77318	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17640	0.17665	0.17662	0.17692	0.17698	0.17701	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465						
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3
RHO, G/CC	5.0244-3	5.2162-3	5.4213-3	5.6415-3	5.8790-3	6.1364-3	6.4166-3	6.7229-3	7.0597-3	7.4316-3	7.8446-3	8.3062-3	8.8254-3	
M, MOL WT	28.860	28.892	28.915	28.933	28.945	28.953	28.959	28.962	28.965	28.966	28.967	28.967	28.967	28.967
CP, CAL/(G*IK)	0.4026	0.3865	0.3727	0.3610	0.3511	0.3426	0.3353	0.3289	0.3231	0.3178	0.3128	0.3081	0.3036	
GAMMA (S)	1.2222	1.2287	1.2352	1.2415	1.2477	1.2536	1.2593	1.2649	1.2703	1.2757	1.2811	1.2865	1.2919	
SON VEL./M/SEC	992.9	977.1	960.9	944.4	927.4	909.9	891.9	873.2	854.0	834.1	813.6	792.3	770.3	

MOLE FRACTIONS

AR	0.00920	0.00921	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00117	0.00077	0.00048	0.00029	0.00017	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01963	0.02006	0.02036	0.02057	0.02070	0.02078	0.02083	0.02086	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00016	0.00009	0.00005	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00015	0.00010	0.00007	0.00004	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01674	0.01738	0.01792	0.01835	0.01871	0.01898	0.01918	0.01934	0.01944	0.01952	0.01956	0.01959	0.01961	0.01961
NO	0.00353	0.02849	0.02464	0.02103	0.01768	0.01461	0.01185	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189	0.00119
NO2	0.00011	0.00010	0.00010	0.00010	0.00009	0.00009	0.00008	0.00007	0.00007	0.00006	0.00005	0.00005	0.00004	0.00004
N2	0.75406	0.75693	0.75948	0.76175	0.76375	0.76551	0.76704	0.76836	0.76949	0.77042	0.77119	0.77180	0.77227	0.77277
O	0.00339	0.00227	0.00148	0.00093	0.00056	0.00032	0.00018	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
OH	0.00514	0.00406	0.00314	0.00236	0.00173	0.00122	0.00084	0.00055	0.00035	0.00021	0.00012	0.00006	0.00003	0.00003
O2	0.15770	0.16051	0.16304	0.16532	0.16734	0.16914	0.17070	0.17205	0.17320	0.17416	0.17494	0.17556	0.17604	

ADD H2O(L)

	CASE=	0	O/F=	50.0000	F/A=	0.02000	PERCENT FUEL=	1.9608	PHI=	0.2931									
P, ATM		50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA		734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K		1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F		2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC		1.1768-2	1.2609-2	1.3579-2	1.4710-2	1.6047-2	1.7652-2	1.9613-2	2.2065-2	2.5217-2	2.9420-2	3.5304-2	4.4130-2	6.1177-2					
M, MOL WT		28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	28.970	30.120					
CP, CAL/(G)(K)		0.3042	0.2999	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.2715					
GAMMA (S)		1.2911	1.2966	1.3023	1.3083	1.3147	1.3217	1.3301	1.3399	1.3507	1.3623	1.3737	1.3837	1.3303					
SON VEL,M/SEC		745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	331.9					

MOLE FRACTIONS

AR		0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2		0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2		0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887
NO		0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2		0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2		0.76517	0.76539	0.76552	0.76562	0.76568	0.76570	0.76571	0.76571	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572
OH		0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2		0.14463	0.14486	0.14501	0.14511	0.14516	0.14519	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	CASE=	0	O/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396									
P, ATM		0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA		7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K		2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F		4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3					
RHO, G/CC		6.0775-5	6.3698-5	6.6698-5	6.9794-5	7.3019-5	7.6416-5	8.0038-5	8.3945-5	8.8200-5	9.2877-5	9.8056-5	1.0384-4	1.1033-4					
M, MOL WT		27.927	28.225	28.460	28.635	28.760	28.844	28.898	28.931	28.950	28.960	28.966	28.969	28.971					
CP, CAL/(G)(K)		0.8786	0.7709	0.6691	0.5787	0.5035	0.4451	0.4025	0.3725	0.3521	0.3380	0.3281	0.3207	0.3148					
GAMMA (S)		1.1475	1.1532	1.1619	1.1738	1.1885	1.2047	1.2208	1.2354	1.2477	1.2578	1.2660	1.2729	1.2790					
SON VEL,M/SEC		978.0	957.7	939.4	923.1	908.1	893.7	879.1	863.5	846.6	828.3	808.8	788.1	766.4					

MOLE FRACTIONS

AR		0.00873	0.00882	0.00889	0.00895	0.00899	0.00901	0.00903	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO		0.02381	0.01797	0.01265	0.00829	0.00505	0.00287	0.00151	0.00074	0.00034	0.00014	0.00005	0.00002	0.00001					
CO2		0.03485	0.04132	0.04713	0.05186	0.05536	0.05772	0.05919	0.06003	0.06047	0.06069	0.06079	0.06083	0.06085					
H		0.00708	0.00423	0.00239	0.00128	0.00064	0.00030	0.00013	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000					
H2		0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
H2		0.00379	0.00281	0.00197	0.00130	0.00082	0.00048	0.00027	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000					
H2O		0.00308	0.04286	0.04681	0.04994	0.05233	0.05409	0.05535	0.05623	0.05682	0.05720	0.05744	0.05759	0.05767					
NO		0.02479	0.02197	0.01915	0.01643	0.01387	0.01150	0.00935	0.00744	0.00577	0.00436	0.00318	0.00223	0.00150					
NO2		0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000					
N2		0.71860	0.72780	0.73535	0.74132	0.74587	0.74925	0.75173	0.75354	0.75487	0.75587	0.75661	0.75716	0.75756					
O		0.02367	0.01600	0.01044	0.00656	0.00396	0.00228	0.00125	0.00065	0.00031	0.00014	0.00006	0.00002	0.00001					
OH		0.02047	0.01692	0.01348	0.01036	0.00770	0.00551	0.00380	0.00252	0.00159	0.00096	0.00054	0.00029	0.00014					
O2		0.09610	0.09928	0.10171	0.10369	0.10542	0.10697	0.10837	0.10961	0.11067	0.11155	0.11225	0.11280	0.11321					

ADD H2O(L)

CASE=	0	D/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862					
P, ATM	1.0009	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	2.3540-4	2.5221-4	2.7162-4	2.9425-4	3.2100-4	3.5310-4	3.9234-4	4.4138-4	5.0443-4	5.8850-4	7.0621-4	8.8276-4	1.2300-3
M, MOL WT	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	30.279
CP, CAL/(G)(K)	0.3142	0.3096	0.3049	0.3003	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.9941
GAMMA (S)	1.2794	1.2847	1.2902	1.2960	1.3024	1.3095	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.1628
SON VEL,M/SEC	742.1	718.4	693.8	668.0	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	309.5

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04309
H2	0.07622	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.03317
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75070	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08296	0.08314	0.08325	0.08332	0.08336	0.08338	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

CASE=	0	D/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862					
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	1.8393-4	1.9231-4	2.0098-4	2.1000-4	2.1947-4	2.2952-4	2.4029-4	2.5194-4	2.6467-4	2.7838-4	2.9421-4	3.1154-4	3.3102-4
M, MOL WT	28.173	28.405	28.586	28.720	28.815	28.878	28.918	28.943	28.957	28.966	28.970	28.972	28.974
CP, CAL/(G)(K)	0.7679	0.6811	0.5995	0.5276	0.4686	0.4231	0.3900	0.3667	0.3505	0.3392	0.3309	0.3244	0.3190
GAMMA (S)	1.1542	1.1610	1.1705	1.1827	1.1968	1.2115	1.2254	1.2375	1.2476	1.2559	1.2627	1.2687	1.2742
SON VEL,M/SEC	976.6	957.9	940.8	925.2	910.4	895.7	880.4	864.0	846.4	827.6	807.7	786.7	764.9

MOLE FRACTIONS

AR	0.00872	0.00879	0.00885	0.00889	0.00892	0.00894	0.00895	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897
CO	0.02414	0.01761	0.01205	0.00772	0.00463	0.00260	0.00136	0.00066	0.00030	0.00012	0.00005	0.00002	0.00000
CO2	0.05391	0.06109	0.06715	0.07185	0.07520	0.07741	0.07876	0.07952	0.07993	0.08012	0.08021	0.08025	0.08027
H	0.00413	0.00242	0.00135	0.00071	0.00035	0.00017	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00386	0.00276	0.00188	0.00122	0.00075	0.00044	0.00025	0.00013	0.00006	0.00003	0.00001	0.00000	0.00000
H2O	0.05912	0.06347	0.06697	0.06969	0.07173	0.07322	0.07428	0.07501	0.07549	0.07581	0.07601	0.07613	0.07619
NO	0.02185	0.01912	0.01651	0.01407	0.01183	0.00979	0.00795	0.00632	0.00491	0.00370	0.00270	0.00190	0.00128
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
N2	0.71942	0.72678	0.73278	0.73748	0.74106	0.74372	0.74569	0.74714	0.74822	0.74904	0.74965	0.75011	0.75046
O	0.01204	0.00804	0.00520	0.00325	0.00196	0.00113	0.00062	0.00032	0.00015	0.00007	0.00003	0.00001	0.00000
OH	0.01819	0.01460	0.01138	0.00862	0.00633	0.00451	0.00309	0.00204	0.00129	0.00077	0.00044	0.00023	0.00011
O2	0.07460	0.07529	0.07585	0.07647	0.07722	0.07808	0.07898	0.07986	0.08066	0.08135	0.08192	0.08237	0.08272

ADD H2O(L)

	CASE=	O	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327								
P, ATM			2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA			29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K			1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0
T, DEG F			2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	-80.3	-160.3	-240.3
RHO, G/CC			4.7084-4	5.0447-4	5.4328-4	5.8855-4	6.4206-4	7.0526-4	7.8474-4	8.8283-4	1.0090-3	1.1771-3	1.4125-3	1.7657-3	2.5546-3			
M, MOL WT			28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977
CP, CAL/(G)(K)			0.3186	0.3140	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.2487	0.2427	0.2367	0.2307
GAMMA (S)			1.2744	1.2795	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.3801	1.3918	1.4035	1.4152
SON VEL,M/SEC			740.6	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	306.7			

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09439	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74369	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05301	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

	CASE=	O	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327								
P, ATM			3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA			44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K			2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0
T, DEG F			4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3
RHO, G/CC			3.6876-4	3.8527-4	4.0242-4	4.2033-4	4.3918-4	4.5921-4	4.8070-4	5.0399-4	5.2942-4	5.5713-4	5.8848-4	6.2314-4	6.6210-4			
M, MOL WT			28.242	28.453	28.619	28.743	28.830	28.889	28.926	28.949	28.962	28.969	28.973	28.975	28.976	28.976	28.976	28.976
CP, CAL/(G)(K)			0.7351	0.6578	0.5839	0.5178	0.4627	0.4201	0.3890	0.3672	0.3523	0.3419	0.3342	0.3283	0.3232	0.3187	0.3144	0.3101
GAMMA (S)			1.1563	1.1630	1.1723	1.1842	1.1979	1.2119	1.2251	1.2364	1.2456	1.2531	1.2592	1.2646	1.2696	1.2744	1.2789	1.2833
SON VEL,M/SEC			976.3	957.9	941.0	925.4	910.5	895.7	880.2	863.5	845.7	826.6	806.5	785.4	763.5			

MOLE FRACTIONS

AR	0.00866	0.00872	0.00877	0.00881	0.00884	0.00886	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887	0.00887
CO	0.02668	0.01940	0.01326	0.00850	0.00509	0.00286	0.00150	0.00073	0.00033	0.00014	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.07012	0.07813	0.08484	0.09002	0.09373	0.09616	0.09765	0.09850	0.09894	0.09916	0.09926	0.09926	0.09926	0.09926	0.09926	0.09926	0.09926	0.09926
H	0.00309	0.00181	0.00101	0.00053	0.00026	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00433	0.00308	0.00210	0.00136	0.00084	0.00049	0.00027	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07811	0.08237	0.08576	0.08836	0.09029	0.09168	0.09265	0.09332	0.09375	0.09403	0.09421	0.09431	0.09436	0.09439	0.09441	0.09442	0.09442	0.09442
NO	0.00184	0.00156	0.00133	0.00112	0.00094	0.00078	0.00063	0.00050	0.00039	0.00029	0.00021	0.00015	0.00011	0.00008	0.00006	0.00005	0.00004	0.00003
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71608	0.72273	0.72814	0.73237	0.73555	0.73788	0.73957	0.74080	0.74169	0.74236	0.74285	0.74322	0.74352	0.74376	0.74395	0.74410	0.74421	0.74429
O	0.00708	0.00467	0.00299	0.00185	0.00111	0.00064	0.00035	0.00018	0.00009	0.00004	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
OH	0.01604	0.01267	0.00976	0.00732	0.00535	0.00379	0.00259	0.00171	0.00108	0.00065	0.00037	0.00021	0.00013	0.00009	0.00006	0.00004	0.00003	0.00002
O2	0.05164	0.05073	0.04999	0.04957	0.04950	0.04973	0.05017	0.05071	0.05126	0.05176	0.05220	0.05255	0.05285	0.05310	0.05326	0.05341	0.05347	0.05351

ADD H2O(L)

	CASE=	0	0/F=	16,6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792									
P, ATM		4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA		58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K		1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F		2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC		9.4175-4	1.0090-3	1.0866-3	1.1772-3	1.2842-3	1.4126-3	1.5696-3	1.7658-3	2.0181-3	2.3544-3	2.8253-3	3.5316-3	5.2582-3					
M, MOL WT		28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	32.360					
CP, CAL/(G)(K)		0.3227	0.3183	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.4542					
GAMMA (S)		1.2700	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.2067					
SON VEL,M/SEC		739.3	715.5	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	305.0					

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00990	0.00880	0.00850	0.00890	0.00880	0.00680	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11662	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10448
H2O	0.11222	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.00776
N0	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02375	0.02381	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

	CASE=	0	0/F=	16,6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792									
P, ATM		6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA		88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K		2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F		4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC		7.3820-4	7.7085-4	8.0494-4	8.4069-4	8.7840-4	9.1850-4	9.6152-4	1.0081-3	1.0590-3	1.1100-3	1.1771-3	1.2464-3	1.3243-3					
M, MOL WT		28.268	28.464	28.622	28.743	28.832	28.891	28.930	28.952	28.965	28.972	28.976	28.978	28.979					
CP, CAL/(G)(K)		0.7097	0.6438	0.5792	0.5190	0.4664	0.4238	0.3920	0.3697	0.3546	0.3444	0.3373	0.3317	0.3270					
GAMMA (S)		1.1582	1.1642	1.1726	1.1835	1.1963	1.2100	1.2232	1.2345	1.2435	1.2505	1.2562	1.2610	1.2655					
SON VEL,M/SEC		976.6	958.2	941.1	925.1	909.9	894.9	879.4	862.8	844.9	825.7	805.5	784.3	762.2					

MOLE FRACTIONS

AR	0.00858	0.00864	0.00869	0.00873	0.00875	0.00877	0.00878	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.03023	0.02238	0.01564	0.01025	0.00627	0.00357	0.00189	0.00092	0.00042	0.00017	0.00006	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001
CO2	0.08489	0.09354	0.10092	0.10681	0.11114	0.11409	0.11593	0.11698	0.11754	0.11782	0.11794	0.11799	0.11801	0.11801					
H	0.00235	0.00139	0.00078	0.00042	0.00021	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H02	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00502	0.00364	0.00253	0.00157	0.00105	0.00062	0.00034	0.00018	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09675	0.10085	0.10412	0.10662	0.10848	0.10980	0.11071	0.11131	0.11169	0.11193	0.11207	0.11216	0.11216	0.11220					
N0	0.01367	0.01145	0.00950	0.00782	0.00640	0.00521	0.00419	0.00332	0.00258	0.00195	0.00142	0.00100	0.00067	0.00043					
N02	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71214	0.71823	0.72323	0.72716	0.73011	0.73223	0.73371	0.73473	0.73543	0.73592	0.73627	0.73653	0.73671	0.73671					
O	0.00378	0.00242	0.00151	0.00091	0.00053	0.00030	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01305	0.01010	0.00764	0.00564	0.00407	0.00286	0.00195	0.00128	0.00081	0.00048	0.00027	0.00015	0.00007	0.00003					
O2	0.02949	0.02733	0.02544	0.02396	0.02297	0.02245	0.02229	0.02238	0.02260	0.02267	0.02313	0.02335	0.02352	0.02352					

ADD H20ILI

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000										
P, ATM	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	2.3545-3	2.5227-3	2.7168-3	2.9432-3	3.2108-3	3.5318-3	3.9243-3	4.4148-3	5.0455-3	5.8864-3	7.0637-3	8.8296-3	1.3434-2						
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981
CP, CAL/(G*IK)	0.3262	0.3215	0.3170	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.2606						
GAMMA (S)	1.2665	1.2712	1.2761	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.2258						
SON VEL, M/SEC	738.3	714.5	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	304.1						

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13311	0.13314	0.13315	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H20ILI	0.00000	0.00520	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.12364						
H20	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73140	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
OH	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000										
P, ATM	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	1.8471-3	1.9265-3	2.0101-3	2.0985-3	2.1924-3	2.2928-3	2.4009-3	2.5181-3	2.6460-3	2.7866-3	2.9423-3	3.1158-3	3.3109-3						
M, MOL WT	28.292	28.455	28.590	28.699	28.784	28.848	28.895	28.928	28.950	28.964	28.972	28.977	28.979						
CP, CAL/(G*IK)	0.6526	0.6021	0.5540	0.5096	0.4701	0.4362	0.4081	0.3855	0.3679	0.3545	0.3444	0.3369	0.3309						
GAMMA (S)	1.1646	1.1702	1.1772	1.1857	1.1953	1.2057	1.2162	1.2264	1.2358	1.2439	1.2509	1.2568	1.2619						
SON VEL, M/SEC	978.9	960.8	943.5	926.7	910.3	894.0	877.4	860.4	842.5	823.7	803.9	783.0	761.1						

MOLE FRACTIONS

AR	0.00852	0.00857	0.00861	0.00865	0.00867	0.00869	0.00871	0.00872	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00344	0.02621	0.01989	0.01458	0.01030	0.00700	0.00455	0.00283	0.00166	0.00092	0.00048	0.00023	0.00010						
CO2	0.09656	0.10453	0.11148	0.11728	0.12195	0.12555	0.12821	0.13009	0.13135	0.13216	0.13264	0.13291	0.13305						
H	0.00158	0.00097	0.00057	0.00032	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000						
H02	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2	0.00569	0.00439	0.00332	0.00246	0.00177	0.00125	0.00085	0.00056	0.00035	0.00021	0.00012	0.00006	0.00003						
H20	0.11267	0.11615	0.11895	0.12116	0.12284	0.12409	0.12499	0.12562	0.12604	0.12632	0.12648	0.12658	0.12663						
NO	0.00887	0.00689	0.00520	0.00381	0.00270	0.00184	0.00121	0.00076	0.00045	0.00026	0.00014	0.00007	0.00003						
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
N2	0.70960	0.71470	0.71896	0.72241	0.72511	0.72716	0.72865	0.72970	0.73041	0.73086	0.73113	0.73128	0.73136						
O	0.00156	0.00092	0.00052	0.00028	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00903	0.00670	0.00481	0.00334	0.00224	0.00144	0.00089	0.00052	0.00029	0.00015	0.00007	0.00003	0.00001						
O2	0.01247	0.00995	0.00767	0.00571	0.00410	0.00283	0.00187	0.00118	0.00071	0.00040	0.00021	0.00010	0.00005						

ADD H2O(L)
ADD C(S)

	CASE= 0	O/F= 14.2857	F/A= 0.07000	PERCENT FUEL= 6.5421				PHI= 1.0258					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	4.6855-3	5.0202-3	5.4064-3	5.8569-3	6.3894-3	7.0283-3	7.8093-3	8.7873-3	1.0062-2	1.1763-2	1.4126-2	1.7807-2	2.7009-2
M, MOL HT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.842	28.898	28.956	28.977	29.224	33.244
CP, CAL/(G)(K)	0.3261	0.3226	0.3188	0.3146	0.3101	0.3052	0.2996	0.2986	0.3045	0.2837	0.2685	1.5548	0.3299
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2916	1.2989	1.3038	1.3039	1.3248	1.3443	1.1910	1.2357
SON VEL./M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.6	548.3	512.4	477.7	439.2	368.2	304.5

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00667	0.00867	0.00867	0.00867	0.00868	0.00869	0.00871	0.00872	0.00872	0.00867	0.00867
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00502
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00105	0.00207	0.00244	0.00252	0.00000	0.00000
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00427	0.00320	0.00198	0.00060	0.00006	0.00000	0.00000	0.00000	0.00000
CO2	0.12840	0.12876	0.12921	0.12978	0.13051	0.13141	0.13248	0.13363	0.13432	0.13411	0.13390	0.13385	0.13065	0.13065
H2	0.00278	0.00313	0.00358	0.00415	0.00488	0.00577	0.00682	0.00763	0.00857	0.00969	0.01099	0.01244	0.01404	0.01580
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00831	0.12758
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12224	0.12124	0.12200	0.12373	0.12449	0.11636	0.00150	0.00150
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00003	0.00006	0.00005	0.00003	0.00001	0.00000	0.00000
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72672	0.72811	0.72958	0.73012	0.73023	0.72657	0.72657

	CASE= 0	O/F= 14.2857	F/A= 0.07000	PERCENT FUEL= 6.5421				PHI= 1.0258						
P, AT	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, F-1A	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	410.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	
RHO, G/CC	3.7036-3	3.8586-3	4.0221-3	4.1953-3	4.3796-3	4.5767-3	4.7888-3	5.0189-3	5.2707-3	5.5485-3	5.8568-3	6.2014-3	6.5890-3	
M, MOL HT	28.364	28.496	28.604	28.688	28.750	28.792	28.817	28.828	28.833	28.835	28.836	28.836	28.836	
CP, CAL/(G)(K)	0.5985	0.5544	0.5120	0.4720	0.4348	0.4008	0.3729	0.3545	0.3445	0.3391	0.3355	0.3324	0.3294	
GAMMA (S)	1.1722	1.1785	1.1863	1.1958	1.2071	1.2202	1.2337	1.2444	1.2512	1.2555	1.2587	1.2616	1.2646	
SON VEL./M/SEC	980.9	963.5	946.9	930.8	915.3	900.2	884.9	868.2	849.5	829.4	808.2	786.4	763.8	

MOLE FRACTIONS

AR	0.00853	0.00857	0.00860	0.00863	0.00865	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867
CO	0.03137	0.02527	0.02009	0.01591	0.01275	0.01058	0.00931	0.00866	0.00834	0.00815	0.00797	0.00778	0.00755	
CO2	0.10209	0.10881	0.11450	0.11937	0.12253	0.12489	0.12628	0.12698	0.12732	0.12753	0.12770	0.12789	0.12812	
H	0.00108	0.00067	0.00040	0.00024	0.00014	0.00008	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
H2O	0.00527	0.00422	0.00337	0.00271	0.00224	0.00193	0.00179	0.00177	0.00183	0.00194	0.00209	0.00227	0.00250	
H2O	0.11769	0.12050	0.12372	0.12443	0.12567	0.12650	0.12697	0.12716	0.12719	0.12711	0.12698	0.12681	0.12658	
NO	0.00708	0.00527	0.00374	0.00250	0.00155	0.00086	0.00041	0.00017	0.00006	0.00002	0.00001	0.00000	0.00000	
N2	0.71115	0.71538	0.71885	0.72159	0.72364	0.72504	0.72588	0.72629	0.72647	0.72653	0.72656	0.72657	0.72657	
O	0.00088	0.00050	0.00027	0.00013	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
OH	0.00693	0.00501	0.00349	0.00231	0.00144	0.00083	0.00044	0.00021	0.00009	0.00003	0.00001	0.00000	0.00000	
O2	0.00792	0.00580	0.00397	0.00247	0.00135	0.00061	0.00022	0.00006	0.00001	0.00000	0.00000	0.00000	0.00000	

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000				PHI= 0.0000					
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	3.7740-3	3.9166-3	4.0692-3	4.2335-3	4.4109-3	4.6033-3	4.8130-3	5.0425-3	5.2947-3	5.5735-3	5.8831-3	6.2292-3	6.6185-3
M, MOL WT	28.904	28.924	28.939	28.949	28.955	28.960	28.962	28.964	28.965	28.965	28.965	28.965	28.965
CP, CAL/(G*IK)	0.3770	0.3649	0.3546	0.3459	0.3384	0.3319	0.3261	0.3209	0.3160	0.3114	0.3069	0.3025	0.2982
GAMMA (S)	1.2343	1.2402	1.2460	1.2515	1.2569	1.2622	1.2673	1.2724	1.2775	1.2826	1.2879	1.2933	1.2988
SON VEL, M/SEC	997.1	981.1	964.7	948.0	930.7	912.9	894.6	875.8	856.4	836.4	815.7	794.4	772.3

MOLE FRACTIONS

AR	0.00930	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00028	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03577	0.03131	0.02706	0.02307	0.01938	0.01601	0.01298	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207
NO2	0.00011	0.00011	0.00010	0.00010	0.00009	0.00009	0.00008	0.00008	0.00007	0.00006	0.00006	0.00005	0.00004
N2	0.76131	0.76410	0.76662	0.76889	0.77091	0.77272	0.77430	0.77569	0.77687	0.77787	0.77869	0.77935	0.77985
O	0.00428	0.00287	0.00186	0.00117	0.00070	0.00040	0.00022	0.00011	0.00006	0.00002	0.00001	0.00000	0.00000
O2	0.18891	0.19200	0.19474	0.19729	0.19929	0.20116	0.20279	0.20420	0.20540	0.20641	0.20724	0.20790	0.20841

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000				PHI= 0.0000					
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	7.0597-3	7.5640-3	8.1458-3	8.8246-3	9.6268-3	1.0589-2	1.1766-2	1.3237-2	1.5128-2	1.7649-2	2.1179-2	2.6474-2	3.5298-2
M, MOL WT	28.965	28.965	28.965	28.965	28.965	28.964	28.964	28.964	28.964	28.964	28.964	28.964	28.964
CP, CAL/(G*IK)	0.2939	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402
GAMMA (S)	1.3044	1.3102	1.3161	1.3222	1.3287	1.3356	1.3440	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.2	557.5	523.6	486.8	446.1	400.3	347.2

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089
O2	0.20880	0.20907	0.20925	0.20936	0.20943	0.20946	0.20948	0.20948	0.20949	0.20949	0.20949	0.20949	0.20949

ADD H2O(LI)

	CASE= 0	O/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465													
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1890.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	9.4138E-2	1.0086E-2	1.0862E-2	1.1767E-2	1.2837E-2	1.4121E-2	1.5689E-2	1.7651E-2	2.0172E-2	2.3534E-2	2.8241E-2	3.5301E-2	4.7969E-2					
M, MDL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G*IK)	0.2992	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2668					
GAMMA (S)	1.2975	1.3031	1.3089	1.3150	1.3215	1.3285	1.3368	1.3465	1.3574	1.3688	1.3799	1.3893	1.3499					
SON VEL,M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	337.7					

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(LI)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01877
H2O	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.00085
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77318	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17640	0.17665	0.17661	0.17692	0.17698	0.17701	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

	CASE= 0	O/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901	PHI= 0.1465													
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3					
RHO, G/CC	6.2826E-3	6.5218E-3	6.7777E-3	7.0526E-3	7.3493E-3	7.6708E-3	8.0209E-3	8.4038E-3	8.8247E-3	9.2895E-3	9.8058E-3	1.0383E-2	1.1032E-2					
M, MDL WT	28.870	28.899	28.920	28.936	28.947	28.954	28.960	28.963	28.965	28.966	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G*IK)	0.3975	0.3827	0.3700	0.3591	0.3498	0.3417	0.3347	0.3285	0.3229	0.3177	0.3128	0.3081	0.3036					
GAMMA (S)	1.2340	1.2302	1.2364	1.2425	1.2484	1.2541	1.2597	1.2651	1.2705	1.2758	1.2812	1.2865	1.2920					
SON VEL,M/SEC	993.5	977.6	961.4	944.8	927.7	910.1	892.0	873.3	854.0	834.1	813.6	792.3	770.3					

MOLE FRACTIONS

AR	0.00920	0.00921	0.00922	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00105	0.00069	0.00043	0.00026	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.01976	0.02014	0.02042	0.02060	0.02072	0.02079	0.02083	0.02086	0.02087	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H	0.00013	0.00008	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00013	0.00009	0.00006	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01690	0.01750	0.01801	0.01842	0.01876	0.01901	0.01921	0.01935	0.01945	0.01952	0.01957	0.01959	0.01961					
NO	0.03256	0.02850	0.02465	0.02104	0.01768	0.01461	0.01185	0.00941	0.00729	0.00550	0.00401	0.00281	0.00189					
NO2	0.00012	0.00012	0.00011	0.00011	0.00010	0.00010	0.00009	0.00008	0.00008	0.00007	0.00006	0.00006	0.00005					
N2	0.75429	0.75709	0.75959	0.76182	0.76380	0.76554	0.76706	0.76837	0.76949	0.77043	0.77119	0.77180	0.77227					
O	0.00303	0.00203	0.00132	0.00083	0.00050	0.00029	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000					
OH	0.00488	0.00386	0.00298	0.00224	0.00164	0.00116	0.00079	0.00052	0.00033	0.00020	0.00011	0.00006	0.00003					
O2	0.15790	0.16065	0.16314	0.16538	0.16739	0.16916	0.17071	0.17206	0.17320	0.17415	0.17494	0.17556	0.17604					

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	1.1769-4	1.2610-4	1.3580-4	1.4711-4	1.6049-4	1.7654-4	1.9615-4	2.2067-4	2.5219-4	2.9423-4	3.5307-4	4.4134-4	5.8845-4						
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G)(K)	0.3096	0.3049	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.2461						
GAMMA (S)	1.2847	1.2903	1.2960	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.3864						
SON VEL, M/SEC	743.7	720.0	695.3	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	345.5						

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06085	0.06086	0.06086	0.06096	0.06096	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O	0.05771	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75814	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11384	0.11392	0.11397	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396										
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	1.2265-4	1.2824-4	1.3401-4	1.4001-4	1.4631-4	1.5300-4	1.6018-4	1.6785-4	1.7643-4	1.8577-4	1.9612-4	2.0767-4	2.2066-4						
M, MOL WT	28.180	28.411	28.590	28.722	28.814	28.876	28.916	28.940	28.955	28.963	28.967	28.970	28.971						
CP, CAL/(G)(K)	0.7609	0.6720	0.5903	0.5194	0.4619	0.4178	0.3856	0.3627	0.3466	0.3353	0.3266	0.3200	0.3144						
GAMMA (S)	1.1558	1.1630	1.1729	1.1854	1.1997	1.2145	1.2285	1.2408	1.2512	1.2599	1.2671	1.2735	1.2793						
SON VEL, M/SEC	977.2	958.6	941.7	926.2	911.5	896.8	881.5	865.2	847.7	829.0	809.1	788.3	766.4						

MOLE FRACTIONS

AR	0.00881	0.00888	0.00893	0.00898	0.00900	0.00902	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.01919	0.01399	0.00956	0.00612	0.00367	0.00206	0.00108	0.00053	0.00024	0.00010	0.00004	0.00001	0.00000						
CO2	0.04001	0.04569	0.05049	0.05421	0.05686	0.05860	0.05965	0.06026	0.06058	0.06074	0.06081	0.06084	0.06085						
H	0.00441	0.00260	0.00145	0.00077	0.00038	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000						
H2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2O	0.00293	0.00212	0.00145	0.00095	0.00059	0.00035	0.00019	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000						
H2O	0.04195	0.34583	0.04899	0.05148	0.05337	0.05478	0.05579	0.05650	0.05698	0.05729	0.05749	0.05761	0.05768						
NO	0.02508	0.02213	0.01924	0.01618	0.01389	0.01151	0.00936	0.00744	0.00578	0.00436	0.00318	0.00223	0.00150						
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000						
N2	0.72508	0.73260	0.73872	0.74355	0.74727	0.75008	0.75220	0.75379	0.75500	0.75593	0.75664	0.75717	0.75757						
O	0.01686	0.01136	0.00739	0.00464	0.00280	0.00162	0.00089	0.00046	0.00022	0.00010	0.00004	0.00001	0.00000						
OH	0.01814	0.01474	0.01161	0.00885	0.00654	0.00467	0.00321	0.00212	0.00134	0.00081	0.00046	0.00024	0.00012						
O2	0.09752	0.10005	0.10213	0.10395	0.10561	0.10713	0.10850	0.10971	0.11074	0.11159	0.11228	0.11281	0.11321						

ADD H2O(L)

CASE=	0	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327				
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	7.0626-4	7.5671-4	8.1492-4	8.8283-4	9.6309-4	1.0594-3	1.1771-3	1.3242-3	1.5134-3	1.7657-3	2.1188-3	2.6485-3	3.8544-3	
M, MOL WT	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	31.628
CP, CAL/(G)(K)	0.3185	0.3140	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.5066	
GAMMA (S)	1.2745	1.2795	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.2029	
SON VEL,M/SEC	740.6	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	308.0	

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00988	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09439	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.01059
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74369	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05302	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

CASE=	0	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327				
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	
RHO, G/CC	4.9302-4	5.1473-4	5.3732-4	5.6097-4	5.8592-4	6.1249-4	6.4106-4	6.7205-4	7.0594-4	7.4336-4	7.8464-4	8.3085-4	8.8281-4	
M, MOL WT	28.319	28.510	28.659	28.770	28.847	28.899	28.932	28.952	28.963	28.970	28.973	28.975	28.976	
CP, CAL/(G)(K)	0.6998	0.6275	0.5593	0.4990	0.4495	0.4114	0.3836	0.3641	0.3506	0.3410	0.3338	0.3281	0.3231	
GAMMA (S)	1.1597	1.1669	1.1766	1.1886	1.2019	1.2153	1.2276	1.2381	1.2467	1.2537	1.2596	1.2648	1.2697	
SON VEL,M/SEC	976.4	958.6	942.1	926.7	911.8	896.8	881.0	864.1	846.0	826.8	806.6	785.5	763.5	

MOLE FRACTIONS

AR	0.00868	0.00874	0.00879	0.00882	0.00884	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.02418	0.01738	0.01176	0.00747	0.00445	0.00249	0.00130	0.00063	0.00029	0.00012	0.00004	0.00001	0.00000	0.00000
CO2	0.07288	0.08034	0.08647	0.09114	0.09442	0.09657	0.09787	0.09860	0.09899	0.09918	0.09927	0.09930	0.09932	0.09932
H	0.00252	0.00147	0.00082	0.00043	0.00021	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00385	0.00272	0.00184	0.00119	0.00073	0.00043	0.00024	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000
H2O	0.07964	0.08351	0.08657	0.08892	0.09066	0.09192	0.09280	0.09341	0.09381	0.09406	0.09422	0.09432	0.09437	
NO	0.01804	0.01557	0.01331	0.01126	0.00942	0.00777	0.00631	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102	
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000
N2	0.71811	0.72424	0.72920	0.73307	0.73599	0.73814	0.73972	0.74087	0.74173	0.74238	0.74286	0.74323	0.74350	
O	0.00609	0.00402	0.00257	0.00160	0.00096	0.00055	0.00030	0.00016	0.00008	0.00003	0.00001	0.00001	0.00000	
OH	0.01502	0.01184	0.00911	0.00683	0.00498	0.00353	0.00242	0.00159	0.00100	0.00060	0.00034	0.00018	0.00009	
O2	0.05094	0.05013	0.04953	0.04926	0.04931	0.04963	0.05013	0.05069	0.05126	0.05177	0.05220	0.05255	0.05282	

ADD H2O(L)

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	1.4126-3	1.5135-3	1.6300-3	1.7658-3	1.9263-3	2.1190-3	2.3544-3	2.6487-3	3.0271-3	3.5316-3	4.2379-3	5.2974-3	7.5103-3						
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)	0.3226	0.3182	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.2510	0.2453	0.2399	0.2350	0.2303	0.2259	0.2217
GAMMA (S)	1.2700	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.3765	1.3900	1.4043	1.4194	1.4353	1.4520	1.4695
SON VEL, M/SEC	739.3	715.5	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	363.3						

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00930	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11862	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10708
H2O	0.11222	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.00516
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02375	0.02380	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	1.2356-3	1.2889-3	1.3447-3	1.4033-3	1.4655-3	1.5317-3	1.6031-3	1.6805-3	1.7651-3	1.8534-3	1.9618-3	2.0773-3	2.2072-3						
M, MOL WT	28.389	28.555	28.688	28.789	28.860	28.909	28.939	28.958	28.968	28.974	28.977	28.978	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)	0.6577	0.5984	0.5412	0.4889	0.4442	0.4087	0.3825	0.3642	0.3517	0.3429	0.3365	0.3314	0.3269	0.3228	0.3190	0.3155	0.3123	0.3093	0.3066
GAMMA (S)	1.1639	1.1706	1.1796	1.1907	1.2032	1.2159	1.2276	1.2374	1.2453	1.2515	1.2567	1.2613	1.2656	1.2703	1.2751	1.2800	1.2850	1.2901	1.2953
SON VEL, M/SEC	977.0	959.3	942.8	927.2	912.1	896.9	880.9	863.8	845.5	826.1	805.6	784.4	762.2						

MOLE FRACTIONS

AR	0.00862	0.00867	0.00871	0.00874	0.00876	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.02561	0.01861	0.01278	0.00825	0.00498	0.00280	0.00147	0.00072	0.00032	0.00013	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.09000	0.09767	0.10405	0.10899	0.11255	0.11492	0.11638	0.11721	0.11765	0.11786	0.11795	0.11799	0.11801						
H	0.00165	0.00097	0.00054	0.00029	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00412	0.00295	0.00203	0.00133	0.00082	0.00048	0.00027	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09927	0.10273	0.10546	0.10755	0.10910	0.11019	0.11094	0.11145	0.11177	0.11197	0.11210	0.11217	0.11220						
NO	0.01328	0.01115	0.00929	0.00769	0.00633	0.00517	0.00418	0.00331	0.00257	0.00195	0.00142	0.00100	0.00067						
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71540	0.72070	0.72501	0.72837	0.73088	0.73268	0.73396	0.73486	0.73549	0.73595	0.73629	0.73653	0.73672						
O	0.00284	0.00182	0.00114	0.00069	0.00041	0.00023	0.00013	0.00007	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01145	0.00885	0.00669	0.00494	0.00357	0.00251	0.00171	0.00113	0.00071	0.00043	0.00024	0.00013	0.00006						
O2	0.02772	0.02584	0.02428	0.02314	0.02244	0.02214	0.02213	0.02231	0.02258	0.02286	0.02313	0.02335	0.02352						

ADD H2O(L)

CASE=	0	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2050.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	3.5317-3	3.7841-3	4.0752-3	4.4148-3	4.8161-3	5.2977-3	5.8864-3	6.6222-3	7.5682-3	8.8296-3	1.0595-2	1.3244-2	2.0174-2
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	33.108
CP, CAL/(G)(K)	0.3260	0.3214	0.3169	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2590	0.3392
GAMMA (S)	1.2666	1.2713	1.2761	1.2814	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3600	1.2336
SON VEL, M/SEC	738.3	714.6	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.1	304.9

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13312	0.13314	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.12466
H2O	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.02020
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73140	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
O2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	O/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	2.4677-3	2.5727-3	2.6833-3	2.8003-3	2.9249-3	3.0583-3	3.2021-3	3.3580-3	3.5283-3	3.7157-3	3.9231-3	4.1545-3	4.4145-3
M, MOL WT	28.349	28.499	28.623	28.723	28.801	28.860	28.903	28.932	28.952	28.965	28.973	28.977	28.979
CP, CAL/(G)(K)	0.6293	0.5822	0.5373	0.4962	0.4597	0.4284	0.4025	0.3816	0.3653	0.3529	0.3435	0.3364	0.3307
GAMMA (S)	1.1776	1.1733	1.1805	1.1889	1.1984	1.2085	1.2186	1.2283	1.2372	1.2449	1.2515	1.2572	1.2621
SON VEL, M/SEC	979.2	961.4	944.2	927.6	911.2	894.8	878.2	861.0	843.0	824.0	805.0	787.1	761.2

MOLE FRACTIONS

AR	0.00854	0.00859	0.00862	0.00865	0.00868	0.00870	0.00871	0.00872	0.00872	0.00873	0.00873	0.00873	0.00873
CO	0.03104	0.02423	0.01832	0.01340	0.00945	0.00641	0.00416	0.00258	0.00152	0.00084	0.00044	0.00021	0.00009
CO2	0.09921	0.10671	0.11319	0.11858	0.12289	0.12620	0.12863	0.13035	0.13151	0.13224	0.13268	0.13293	0.13306
H	0.00131	0.00080	0.00047	0.00026	0.00014	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00520	0.00401	0.00303	0.00224	0.00162	0.00114	0.00077	0.00051	0.00032	0.00019	0.00011	0.00006	0.00003
H2O	0.11392	0.11710	0.11965	0.12165	0.12318	0.12432	0.12514	0.12572	0.12610	0.12635	0.12650	0.12659	0.12664
NO	0.00852	0.00650	0.00497	0.00363	0.00257	0.00175	0.00115	0.00072	0.00043	0.00024	0.00013	0.00006	0.00003
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71122	0.71597	0.71992	0.72311	0.72561	0.72750	0.72887	0.72984	0.73049	0.73090	0.73115	0.73130	0.73137
O	0.00129	0.00077	0.00043	0.00023	0.00012	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00827	0.00612	0.00439	0.00304	0.00203	0.00131	0.00080	0.00047	0.00026	0.00014	0.00007	0.00003	0.00001
O2	0.01146	0.00910	0.00699	0.00519	0.00371	0.00256	0.00169	0.00106	0.00064	0.00036	0.00019	0.00009	0.00004

ADD C(S)
ADD H2O(L)

CASE=	0	0/F= 12.5000	F/A= 0.08000	PERCENT FUEL= 7.4074				PHI= 1.1723					
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	1.1393-2	1.2207-2	1.3146-2	1.4242-2	1.5539-2	1.7125-2	1.9210-2	2.1863-2	2.5145-2	2.9410-2	3.5317-2	4.9265-2	6.8959-2
M, MOL WT	28.046	28.046	28.046	28.047	28.052	28.104	28.374	28.704	28.887	28.960	28.980	32.340	33.951
CP, CAL/(G)(K)	0.3338	0.3313	0.3290	0.3271	0.3289	0.3715	0.4436	0.3838	0.3203	0.2910	0.2758	0.7620	0.3184
GAMMA (S)	1.2695	1.2720	1.2746	1.2769	1.2772	1.2586	1.2334	1.2549	1.2910	1.3143	1.3320	1.1921	1.2310
SON VEL, M/SEC	751.4	726.6	700.9	674.0	645.3	610.2	570.3	539.3	510.0	475.8	437.1	350.1	300.7

MOLE FRACTIONS

AR	0.00836	0.00836	0.00836	0.00836	0.00836	0.00838	0.00846	0.00855	0.00861	0.00859	0.00852	0.00837	0.00836
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00474	0.01311	0.03138	0.03236
CH4	0.00000	0.00000	0.00000	0.00001	0.00008	0.00096	0.00574	0.01162	0.01490	0.01378	0.00986	0.00051	0.00000
CO	0.04457	0.04258	0.04011	0.03704	0.03310	0.02691	0.01479	0.00450	0.00079	0.00007	0.00000	0.00000	0.00000
CO2	0.10480	0.10680	0.10927	0.11234	0.11623	0.12182	0.13059	0.13676	0.13816	0.13492	0.12936	0.11764	0.11701
H2	0.02015	0.02214	0.02459	0.02761	0.03123	0.03388	0.02738	0.01493	0.00598	0.00166	0.00027	0.00001	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00053	0.14158
H2O	0.12199	0.12000	0.11754	0.11448	0.11069	0.10641	0.10460	0.10697	0.11034	0.11668	0.12488	0.04074	0.00057
NH3	0.00001	0.00001	0.00002	0.00004	0.00007	0.00015	0.00023	0.00023	0.00019	0.00012	0.00006	0.00000	0.00000
N2	0.70012	0.70012	0.70012	0.70013	0.70024	0.70149	0.70820	0.71643	0.72102	0.71944	0.71393	0.70083	0.70012

CASE=	0	0/F= 11.1111	F/A= 0.09000	PERCENT FUEL= 8.2569				PHI= 1.3189					
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	5.7154-5	6.0082-5	6.3023-5	6.5985-5	6.9013-5	7.2176-5	7.5548-5	7.9196-5	8.3183-5	8.7575-5	9.2448-5	9.7889-5	1.0401-4
M, MOL WT	26.363	26.623	26.891	27.073	27.182	27.244	27.277	27.294	27.303	27.307	27.310	27.310	27.311
CP, CAL/(G)(K)	1.0989	0.9263	0.7568	0.6085	0.4994	0.4314	0.3928	0.3715	0.3596	0.3526	0.3402	0.3450	0.3426
GAMMA (S)	1.1384	1.1449	1.1568	1.1754	1.1985	1.2205	1.2375	1.2490	1.2564	1.2613	1.2648	1.2675	1.2698
SON VEL, M/SEC	1004.6	982.6	964.3	950.0	938.0	925.6	911.7	893.9	874.8	854.2	832.5	809.9	786.4

MOLE FRACTIONS

AR	0.00776	0.00786	0.00794	0.00799	0.00803	0.00804	0.00805	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806
CO	0.10853	0.10235	0.09692	0.09289	0.09028	0.08864	0.08746	0.08639	0.08526	0.08397	0.08247	0.08071	0.07861
CO2	0.04737	0.05567	0.06270	0.06731	0.07106	0.07307	0.07445	0.07562	0.07681	0.07812	0.07963	0.08140	0.08350
H	0.02069	0.01378	0.00901	0.00580	0.00366	0.00225	0.00133	0.00075	0.00040	0.00020	0.00009	0.00004	0.00001
H2	0.03234	0.02975	0.02788	0.02638	0.02681	0.02726	0.02805	0.02904	0.03020	0.03152	0.03305	0.03484	0.03695
H2O	0.09679	0.10727	0.11514	0.12033	0.12335	0.12469	0.12498	0.12460	0.12378	0.12263	0.12118	0.11943	0.11734
NO	0.00701	0.00493	0.00316	0.00182	0.00095	0.00045	0.00019	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000
N2	0.64610	0.65603	0.66356	0.66871	0.67187	0.67363	0.67458	0.67506	0.67531	0.67543	0.67548	0.67551	0.67552
O	0.00706	0.00378	0.00181	0.00077	0.00028	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01782	0.01302	0.00881	0.00550	0.00317	0.00169	0.00084	0.00039	0.00017	0.00006	0.00002	0.00001	0.00000
O2	0.00855	0.00555	0.00307	0.00141	0.00054	0.00018	0.00005	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000

	CASE= 0	O/F= 0.0000	F/A= 0.0000	PERCENT FUEL= 0.0000	PHI= 0.0000													
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.?	2420.3					
RHO, G/CC	5.0335-3	5.2231-3	5.4264-3	5.6451-3	5.8815-3	6.1380-3	6.4175-3	6.7234-3	7.0597-3	7.4313-3	7.8442-3	8.3056-3	8.8247-3					
M, MOL WT	28.912	28.930	28.943	28.951	28.957	28.961	28.963	28.964	28.965	28.965	28.965	28.965	28.965					
CP, CAL/(G)(K)	0.3724	0.3615	0.3522	0.3443	0.3373	0.3312	0.3258	0.3207	0.3159	0.3113	0.3069	0.3025	0.2982					
GAMMA (S)	1.2363	1.2418	1.2472	1.2524	1.2575	1.2626	1.2676	1.2725	1.2776	1.2827	1.2879	1.2933	1.2988					
SON VEL, M/SEC	997.7	981.6	965.1	948.3	930.9	913.1	894.7	875.9	856.4	836.4	815.8	794.4	772.3					

MOLE FRACTIONS

AR	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00028	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03581	0.03133	0.02707	0.02208	0.01938	0.01601	0.01298	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207					
NO2	0.00013	0.00013	0.00012	0.00011	0.00011	0.00010	0.00010	0.00009	0.00008	0.00007	0.00007	0.00006	0.00005					
N2	0.76152	0.76424	0.76671	0.76894	0.77095	0.77274	0.77431	0.77569	0.77687	0.77787	0.77869	0.77934	0.77985					
O	0.00371	0.00249	0.00162	0.00101	0.00061	0.00035	0.00019	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000					
O2	0.18923	0.19221	0.19487	0.19723	0.19933	0.20118	0.20279	0.20420	0.20539	0.20640	0.20723	0.20789	0.20841					

	CASE= 0	O/F= 0.0000	F/A= 0.00000	PERCENT FUEL= 0.0000	PHI= 0.0000													
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	9.4130-3	1.0085-2	1.0861-2	1.1766-2	1.2836-2	1.4119-2	1.5688-2	1.7649-2	2.0170-2	2.3532-2	2.8238-2	3.5298-2	4.7064-2					
M, MOL WT	28.965	28.965	28.965	28.965	28.965	28.965	28.964	28.964	28.964	28.964	28.964	28.964	28.964					
CP, CAL/(G)(K)	0.2939	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402					
GAMMA (S)	1.3044	1.3102	1.3161	1.3222	1.3287	1.3356	1.3439	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999					
SON VEL, M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.2	557.5	523.6	486.8	446.1	400.3	347.2					

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
NO2	0.00004	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000					
N2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78088	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089					
O2	0.20879	0.20906	0.20925	0.20936	0.20942	0.20946	0.20947	0.20948	0.20948	0.20948	0.20949	0.20949	0.20949					

ADD H2O(L)

	CASE= 0	O/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465					
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	1.1767-2	1.2608-2	1.3578-2	1.4709-2	1.6046-2	1.7651-2	1.9612-2	2.2063-2	2.5215-2	2.9418-2	3.5301-2	4.4126-2	5.9971-2
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	29.526
CP, CAL/(G*IK)	0.2992	0.2949	0.2906	0.2863	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2492	0.2448	0.2632
GAMMA (S)	1.2955	1.3031	1.3089	1.3150	1.3215	1.3285	1.3368	1.3465	1.3574	1.2688	1.2799	1.3893	1.3537
SON VEL,M/SEC	747.4	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	338.2

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01894
H2O	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.00068
NO	0.00120	0.00072	0.00039	0.00020	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00004	0.00003	0.00003	0.00002	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77318	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17639	0.17664	0.17661	0.17692	0.17698	0.17701	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2950.3	2780.3	2600.3	2420.3
RHO, G/CC	6.1142-5	6.3980-5	6.6903-5	6.9934-5	7.3107-5	7.6468-5	8.0065-5	8.3956-5	8.8203-5	9.2874-5	9.8051-5	1.0383-4	1.1032-4
M, MOL WT	28.096	28.350	28.547	28.693	28.795	28.864	28.908	28.935	28.951	28.960	28.965	28.967	28.968
CP, CAL/(G*IK)	0.7944	0.6974	0.6085	0.5317	0.4694	0.4215	0.3864	0.3614	0.3439	0.3315	0.3225	0.3155	0.3097
GAMMA (S)	1.1545	1.1614	1.1713	1.1839	1.1986	1.2142	1.2292	1.2427	1.2541	1.2637	1.2717	1.2786	1.2848
SON VEL,M/SEC	978.1	959.0	941.8	926.1	911.4	896.9	881.9	866.0	848.7	830.3	810.6	789.9	768.1

MOLE FRACTIONS

AR	0.00887	0.00895	0.00901	0.00905	0.00909	0.00911	0.00912	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.01514	0.01124	0.00780	0.00505	0.00305	0.00172	0.00091	0.00044	0.00020	0.00008	0.00003	0.00001	0.00000
CO2	0.02469	0.02894	0.03266	0.03562	0.03777	0.03919	0.04007	0.04057	0.04084	0.04097	0.04103	0.04105	0.04106
H	0.00535	0.00321	0.00182	0.00097	0.00049	0.00023	0.00010	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000
HO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00217	0.00162	0.00114	0.00076	0.00048	0.00028	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000
H2O	0.02423	0.02762	0.03048	0.03279	0.03458	0.03593	0.03692	0.03762	0.03810	0.03842	0.03862	0.03874	0.03880
NO	0.02782	0.02475	0.02164	0.01862	0.01574	0.01306	0.01062	0.00845	0.00656	0.00495	0.00361	0.00254	0.00170
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
O	0.72870	0.73697	0.74373	0.74909	0.75323	0.75638	0.75876	0.76056	0.76193	0.76298	0.76378	0.76438	0.76484
O2	0.02638	0.01791	0.01173	0.00739	0.00447	0.00258	0.00142	0.00073	0.00035	0.00016	0.00006	0.00002	0.00001
OH	0.01724	0.01437	0.01153	0.00892	0.00665	0.00478	0.00330	0.00219	0.00139	0.00083	0.00047	0.00025	0.00012
O2	0.11939	0.12440	0.12844	0.13173	0.13445	0.13671	0.13860	0.14016	0.14143	0.14245	0.14325	0.14386	0.14432

ADD H2O(L)

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396								
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0
RHO, G/CC	2.3538-4	2.5219-4	2.7159-4	2.9423-4	3.2098-4	3.5307-4	3.9230-4	4.4134-4	5.0439-4	5.8845-4	7.0615-4	8.8268-4	1.2057-3				
M, MOL HT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G)(K)	0.3095	0.3049	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.2443	0.2388	0.2333	0.2278	0.2223
GAMMA (S)	1.2849	1.2904	1.2960	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.3881	1.3978	1.4075	1.4172	1.4269
SON VEL, M/SEC	743.7	720.0	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	353.0	308.0	263.0	218.0	173.0

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.02391
H2O	0.05771	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.03383
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11384	0.11392	0.11397	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396								
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3
RHO, G/CC	1.8476-4	1.9295-4	2.0143-4	2.1030-4	2.1966-4	2.2962-4	2.4034-4	2.5196-4	2.6467-4	2.7877-4	2.9419-4	3.1151-4	3.3100-4				
M, MOL HT	28.301	28.498	28.650	28.761	28.839	28.891	28.924	28.945	28.957	28.964	28.968	28.970	28.971	28.971	28.971	28.971	28.971
CP, CAL/(G)(K)	0.7033	0.6244	0.5529	0.4919	0.4428	0.4054	0.3779	0.3581	0.3440	0.3337	0.3259	0.3196	0.3143	0.3096	0.3054	0.3017	0.2983
GAMMA (S)	1.1612	1.1690	1.1794	1.1919	1.2057	1.2194	1.2322	1.2434	1.2529	1.2609	1.2677	1.2738	1.2794	1.2845	1.2891	1.2928	1.2965
SON VEL, M/SEC	977.3	959.6	943.4	928.1	913.4	898.4	882.8	866.1	848.2	829.3	809.3	788.3	766.5	744.7	723.0	701.2	679.4

MOLE FRACTIONS

AR	0.00884	0.00891	0.00895	0.00899	0.00901	0.00903	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.01670	0.01196	0.00805	0.00509	0.00303	0.00169	0.00088	0.00043	0.00019	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.04275	0.04790	0.05213	0.05532	0.05755	0.05900	0.05987	0.06037	0.06063	0.06076	0.06082	0.06084	0.06085	0.06086	0.06086	0.06086	0.06085
H	0.00332	0.00195	0.00108	0.00057	0.00028	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00250	0.00178	0.00121	0.00078	0.00048	0.00028	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.04385	0.04727	0.05004	0.05221	0.05388	0.05511	0.05600	0.05663	0.05706	0.05734	0.05752	0.05762	0.05768	0.05771	0.05772	0.05773	0.05773
NO	0.02521	0.02219	0.01927	0.01650	0.01390	0.01152	0.00936	0.00745	0.00578	0.00436	0.00318	0.00223	0.00150				
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72816	0.73485	0.74028	0.74458	0.74791	0.75046	0.75241	0.75391	0.75507	0.75596	0.75665	0.75718	0.75757	0.75781	0.75796	0.75804	0.75808
O	0.01380	0.00929	0.00604	0.00379	0.00229	0.00132	0.00072	0.00037	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01678	0.01354	0.01060	0.00806	0.00594	0.00423	0.00291	0.00192	0.00121	0.00073	0.00041	0.00022	0.00011				
O2	0.09806	0.10035	0.10231	0.10408	0.10571	0.10721	0.10857	0.10976	0.11077	0.11161	0.11229	0.11282	0.11322				

ADD H20(IL)

CASE=	0	0/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862								
P, ATH	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	-80.3	-160.3	-240.3	-320.3
RHO, G/CC	4.7080-4	5.0443-4	5.4323-4	5.8950-4	6.4200-4	7.0621-4	7.8467-4	8.8276-4	1.0089-3	1.1770-3	1.4124-3	1.7655-3	2.5042-3	3.8283-3	5.8283-3	8.8283-3	13.8283-3
M, MOL HT	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G)(K)	0.3141	0.3095	0.3049	0.3003	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.2465	0.2407	0.2349	0.2291	0.2233
GAMMA (S)	1.2795	1.2847	1.2902	1.2960	1.3024	1.3095	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.3815	1.3875	1.3915	1.3945	1.3965
SON VEL, M/SEC	742.1	718.4	693.8	668.1	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	347.0	297.0	247.0	197.0	147.0

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H20(IL)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07623	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07629
N0	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75070	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08297	0.08314	0.08325	0.08332	0.08336	0.08338	0.08338	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

CASE=	0	0/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862								
P, ATH	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3
RHO, G/CC	3.7039-4	3.8653-4	4.0334-4	4.2095-4	4.3956-4	4.5942-4	4.8080-4	5.0401-4	5.2941-4	5.5710-4	5.8843-4	6.2309-4	6.6205-4	7.0445-4	7.5045-4	8.0015-4	8.5365-4
M, MOL HT	28.367	28.546	28.684	28.785	28.855	28.902	28.932	28.950	28.961	28.968	28.971	28.973	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G)(K)	0.6764	0.6044	0.5386	0.4823	0.4370	0.4025	0.3773	0.3593	0.3464	0.3298	0.3239	0.3188	0.3143	0.3100	0.3059	0.3020	0.2982
GAMMA (S)	1.1630	1.1710	1.1813	1.1935	1.2067	1.2197	1.2315	1.2417	1.2503	1.2574	1.2636	1.2692	1.2744	1.2791	1.2830	1.2863	1.2891
SON VEL, M/SEC	977.0	959.6	943.5	928.4	913.5	898.3	882.4	865.4	847.3	828.1	807.9	786.9	764.9	742.9	720.9	698.9	676.9

MOLE FRACTIONS

AR	0.00878	0.00883	0.00888	0.00891	0.00893	0.00894	0.00895	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.01895	0.01343	0.00897	0.00564	0.00334	0.00186	0.00097	0.00047	0.00021	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.05964	0.06565	0.07050	0.07411	0.07661	0.07822	0.07919	0.07974	0.08002	0.08017	0.08023	0.08026	0.08027	0.08027	0.08027	0.08027	0.08027
H	0.00253	0.00147	0.00082	0.00043	0.00021	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H02	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00290	0.00204	0.00137	0.00038	0.00054	0.00032	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.06262	0.06609	0.06895	0.07100	0.07261	0.07379	0.07464	0.07523	0.07563	0.07589	0.07605	0.07615	0.07620	0.07620	0.07620	0.07620	0.07620
N0	0.02185	0.01910	0.01649	0.01406	0.01183	0.00979	0.00795	0.00633	0.00491	0.00370	0.00270	0.00190	0.00128	0.00078	0.00042	0.00020	0.00010
N02	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72443	0.73046	0.73533	0.73916	0.74211	0.74434	0.74604	0.74733	0.74832	0.74908	0.74967	0.75012	0.75046	0.75074	0.75097	0.75112	0.75046
O	0.00848	0.00567	0.00367	0.00230	0.00138	0.00080	0.00044	0.00023	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01572	0.01251	0.00969	0.00731	0.00536	0.00380	0.00261	0.00172	0.00109	0.00065	0.00037	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000
O2	0.07407	0.07472	0.07540	0.07618	0.07708	0.07803	0.07899	0.07989	0.08069	0.08137	0.08194	0.08238	0.08272	0.08297	0.08314	0.08325	0.08332

ADD H2O(L)

CASE=	0	0/F= 16.6667	F/A= 0.06000	PERCENT FUEL= 5.6604				PHI= 0.8792					
P, ATM	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	2.3544-3	2.5226-3	2.7166-3	2.9430-3	3.2106-3	3.5316-3	3.9240-3	4.4145-3	5.0452-3	5.8860-3	7.0632-3	8.8290-3	1.3214-2
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	32.530
CP, CAL/(G)(K)	0.3226	0.3182	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.3552
GAMMA ISI	1.2700	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.2349
SON VEL, M/SEC	739.3	715.6	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	307.7

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00990	0.00880	0.00860	0.00890	0.00880	0.00680	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11801	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10915
H2O	0.11222	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.00309
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02380	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F= 16.6667	F/A= 0.06000	PERCENT FUEL= 5.6604				PHI= 0.8792					
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	1.8588-3	1.9375-3	2.0201-3	2.1072-3	2.1996-3	2.2985-3	2.4051-3	2.5210-3	2.6478-3	2.7876-3	2.9428-3	3.1160-3	3.3108-3
M, MOL WT	28.471	28.617	28.732	28.818	28.879	28.920	28.945	28.961	28.970	28.974	28.977	28.978	28.979
CP, CAL/(G)(K)	0.6210	0.5666	0.5149	0.4684	0.4293	0.3988	0.3764	0.3607	0.3497	0.3420	0.3361	0.3312	0.3268
GAMMA ISI	1.1686	1.1759	1.1852	1.1962	1.2083	1.2201	1.2306	1.2394	1.2465	1.2522	1.2570	1.2614	1.2657
SON VEL, M/SEC	977.5	960.4	944.3	928.9	913.7	898.2	881.9	864.4	845.9	826.3	805.8	784.4	762.3

MOLE FRACTIONS

AR	0.00865	0.00869	0.00872	0.00875	0.00877	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.02228	0.01598	0.01083	0.00690	0.00413	0.00231	0.00121	0.00059	0.00026	0.00011	0.00004	0.00001	0.00000
CO2	0.09367	0.10056	0.10618	0.11046	0.11348	0.11546	0.11667	0.11735	0.11771	0.11789	0.11797	0.11800	0.11801
H	0.00124	0.00073	0.00041	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00350	0.00249	0.00170	0.00110	0.00068	0.00040	0.00022	0.00011	0.00006	0.00002	0.00001	0.00000	0.00000
H2O	0.10098	0.10359	0.10637	0.10817	0.10951	0.11045	0.11110	0.11154	0.11182	0.11200	0.11211	0.11217	0.11221
NO	0.01299	0.01094	0.00915	0.00761	0.00629	0.00515	0.00417	0.00331	0.00257	0.00195	0.00142	0.00100	0.00067
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
N2	0.71765	0.72239	0.72621	0.72917	0.73138	0.73298	0.73412	0.73494	0.73553	0.73597	0.73629	0.73654	0.73672
O	0.00227	0.00146	0.00092	0.00056	0.00033	0.00019	0.00010	0.00005	0.00003	0.00001	0.00000	0.00000	0.00000
OH	0.01032	0.00796	0.00602	0.00445	0.00322	0.00227	0.00155	0.00102	0.00064	0.00039	0.00022	0.00012	0.00006
O2	0.02643	0.02479	0.02349	0.02259	0.02210	0.02195	0.02204	0.02227	0.02256	0.02286	0.02313	0.02335	0.02352

ADD H2O(L)
ADD C(S)

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000						
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	4.7090-3	5.0454-3	5.4336-3	5.8864-3	6.4215-3	7.0637-3	7.8485-3	8.8296-3	1.0091-2	1.1773-2	1.4127-2	1.7848-2	2.6914-2		
M, MOL HT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981
CP, CAL/(G*IK)	0.3259	0.3214	0.3169	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2581	0.2506	0.2431	0.2356
GAMMA (S)	1.2667	1.2713	1.2761	1.2815	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3607	1.3742	1.3882	1.4027
SON VEL,M/SEC	738.3	714.6	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	397.7	353.3	307.5	260.5

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13312	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
O2	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000						
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3
RHO, G/CC	3.7111-3	3.8666-3	4.0309-3	4.2050-3	4.3907-3	4.5898-3	4.8047-3	5.0380-3	5.2931-3	5.5739-3	5.8849-3	6.2319-3	6.6218-3		
M, MOL HT	28.422	28.555	28.666	28.754	28.823	28.875	28.912	28.938	28.956	28.967	28.974	28.978	28.980	28.980	28.980
CP, CAL/(G*IK)	0.5394	0.5566	0.5161	0.4791	0.4464	0.4185	0.3954	0.3768	0.3622	0.3510	0.3424	0.3359	0.3304	0.3250	0.3204
GAMMA (S)	1.1718	1.1778	1.1850	1.1934	1.2026	1.2122	1.2217	1.2308	1.2390	1.2462	1.2523	1.2576	1.2624	1.2668	1.2714
SON VEL,M/SEC	979.7	962.2	945.3	928.8	912.4	896.0	879.2	861.7	843.5	824.4	804.3	783.2	761.2	738.1	714.9

MOLE FRACTIONS

AR	0.00856	0.00860	0.00864	0.00868	0.00868	0.00870	0.00871	0.00872	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.02789	0.02166	0.01631	0.01188	0.00835	0.00585	0.00367	0.00227	0.00134	0.00074	0.00038	0.00018	0.00008	0.00004	0.00002
CO2	0.10270	0.10954	0.11540	0.12024	0.12408	0.12702	0.12917	0.13069	0.13171	0.13235	0.13274	0.13296	0.13307	0.13312	0.13316
H	0.00100	0.00061	0.00036	0.00020	0.00011	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00457	0.00353	0.00267	0.00197	0.00142	0.00100	0.00068	0.00045	0.00028	0.00017	0.00010	0.00005	0.00003	0.00002	0.00001
H2O	0.11550	0.11829	0.12053	0.12228	0.12362	0.12462	0.12533	0.12583	0.12617	0.12639	0.12652	0.12660	0.12664	0.12666	0.12668
NO	0.00802	0.00619	0.00465	0.00339	0.00239	0.00163	0.00107	0.00067	0.00040	0.00023	0.00012	0.00006	0.00003	0.00002	0.00001
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71330	0.71759	0.72114	0.72401	0.72624	0.72793	0.72915	0.73002	0.73059	0.73096	0.73118	0.73131	0.73138	0.73141	0.73143
O	0.00099	0.00059	0.00033	0.00018	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00730	0.00538	0.00385	0.00266	0.00178	0.00114	0.00070	0.00041	0.00023	0.00012	0.00006	0.00003	0.00001	0.00000	0.00000
O2	0.01014	0.00800	0.00612	0.00452	0.00323	0.00222	0.00146	0.00092	0.00055	0.00031	0.00017	0.00008	0.00004	0.00002	0.00001

ADD H2O(L)
ADD C(S)

CASE=	0	0/F=	14.2857	F/A=	0.07000	PERCENT FUEL=	6.5421	PHI=	1.0258									
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	9.3710-3	1.0040-2	1.0813-2	1.1714-2	1.2779-2	1.4057-2	1.5619-2	1.7582-2	2.0138-2	2.3531-2	2.8252-2	3.8132-2	5.4065-2					
M, MOL WT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836
CP, CAL/(G*IK)	0.3261	0.3226	0.3188	0.3146	0.3102	0.3053	0.3002	0.3057	0.3009	0.2810	0.2678	0.8998	0.3140					
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2916	1.2985	1.2989	1.3065	1.3273	1.3451	1.1939	1.2425					
SON VEL,M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.5	547.2	512.8	478.1	439.3	356.2	305.2					

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00870	0.00871	0.00872	0.00869	0.00867				
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00343	0.00502				
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00028	0.00139	0.00219	0.00246	0.00080	0.00000				
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00427	0.00319	0.00183	0.00045	0.00005	0.00000	0.00000	0.00000	0.00000				
CO2	0.12840	0.12876	0.12921	0.12978	0.13051	0.13141	0.13249	0.13366	0.13422	0.13455	0.13485	0.13389	0.13167	0.13065				
H2	0.00278	0.00313	0.00355	0.00415	0.00487	0.00577	0.00679	0.00703	0.00393	0.00121	0.00021	0.00001	0.00001	0.00000				
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00352	0.12833				
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12224	0.12148	0.12262	0.12398	0.12454	0.05415	0.00075	0.00075				
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00006	0.00008	0.00006	0.00003	0.00000	0.00000	0.00000				
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72659	0.72698	0.72861	0.72976	0.73015	0.72773	0.72657				

CASE=	0	0/F=	14.2857	F/A=	0.07000	PERCENT FUEL=	6.5421	PHI=	1.0258									
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC	6.1898-3	6.4446-3	6.7139-3	6.9997-3	7.3043-3	7.6307-3	7.9827-3	8.3654-3	8.7847-3	9.2475-3	9.7614-3	1.0336-2	1.0982-2					
M, MOL WT	28.443	28.556	28.648	28.719	28.770	28.803	28.822	28.830	28.834	28.835	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.836
CP, CAL/(G*IK)	0.5646	0.5252	0.4874	0.4517	0.4183	0.3885	0.3654	0.3510	0.3432	0.3386	0.3353	0.3324	0.3294					
GAMMA (S)	1.1776	1.1842	1.1922	1.2018	1.2131	1.2257	1.2377	1.2466	1.2521	1.2558	1.2588	1.2616	1.2646					
SON VEL,M/SEC	981.8	964.9	948.5	932.7	917.3	902.1	886.3	868.9	849.8	829.5	808.3	786.4	763.8					

MOLE FRACTIONS

AR	0.00856	0.00859	0.00862	0.00864	0.00865	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867				
CO	0.02788	0.02249	0.01798	0.01441	0.01178	0.01005	0.00907	0.00858	0.00832	0.00814	0.00797	0.00778	0.00778	0.00778				
CO2	0.10595	0.11188	0.11681	0.12077	0.12358	0.12547	0.12654	0.12707	0.12735	0.12753	0.12770	0.12789	0.12812					
H	0.00078	0.00049	0.00029	0.00017	0.00010	0.00006	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.00458	0.00369	0.00298	0.00244	0.00206	0.00183	0.00174	0.00175	0.00183	0.00194	0.00212	0.00229	0.00227	0.00250				
H2O	0.11943	0.12179	0.12366	0.12508	0.12609	0.12674	0.12709	0.12721	0.12721	0.12721	0.12712	0.12699	0.12681	0.12658				
NO	0.00641	0.00472	0.00330	0.00217	0.00131	0.00070	0.00033	0.00013	0.00005	0.00002	0.00000	0.00000	0.00000	0.00000				
N2	0.71346	0.71716	0.72018	0.72253	0.72425	0.72539	0.72605	0.72636	0.72649	0.72654	0.72656	0.72657	0.72657	0.72657				
O	0.00061	0.00035	0.00018	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
OH	0.00584	0.00420	0.00289	0.00190	0.00117	0.00066	0.00034	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000				
O2	0.00648	0.00465	0.00309	0.00186	0.00097	0.00041	0.00014	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000				

ADD C151
ADD H20IL1

CASE=	0	O/F= 11.1111	F/A= 0.09000	PERCENT FUEL= 8.2569				PHI= 1.3189					
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	1.1094-4	1.1887-4	1.2801-4	1.3868-4	1.5129-4	1.6642-4	1.8492-4	2.0871-4	2.4507-4	2.9179-4	3.5271-4	4.4151-4	6.5478-4
M, MOL WT	27.311	27.311	27.311	27.311	27.311	27.311	27.311	27.402	28.153	28.732	28.942	28.983	32.237
CP, CAL/(G11K1)	0.3404	0.3385	0.3369	0.3356	0.3349	0.3350	0.3383	0.4534	0.5858	0.3868	0.3016	0.2732	1.7549
GAMMA (S)	1.2719	1.2738	1.2755	1.2768	1.2776	1.2775	1.2756	1.2284	1.1964	1.2545	1.3061	1.3363	1.7549
SON VEL, M/SEC	762.1	736.8	710.5	683.0	654.1	623.6	591.2	546.1	497.3	466.7	433.1	391.6	296.0

MOLE FRACTIONS

AR	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00807	0.00809	0.00824	0.00829	0.00825	0.00817	0.00807
C151	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00910	0.02310	0.03412	0.04535	0.05727
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00004	0.00166	0.01070	0.01385	0.01177	0.00654	0.00027
CO	0.07611	0.07309	0.06942	0.06492	0.05938	0.05252	0.04403	0.03186	0.00814	0.00065	0.00002	0.00000	0.00000
CO2	0.08601	0.08903	0.09270	0.09719	0.10274	0.10959	0.11806	0.12914	0.13765	0.12901	0.12003	0.11234	0.10466
H2	0.03946	0.04248	0.04615	0.05064	0.05619	0.06304	0.07138	0.07743	0.04883	0.01648	0.00292	0.00020	0.00000
H2OIL1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.09508
H2O	0.11484	0.11182	0.10815	0.10366	0.09811	0.09125	0.08284	0.07404	0.08731	0.11435	0.13144	0.14303	0.05876
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00003	0.00004	0.00004	0.00002	0.00001	0.00000
N2	0.67552	0.67552	0.67552	0.67552	0.67552	0.67552	0.67558	0.67776	0.68999	0.69424	0.69143	0.68436	0.67589

CASE=	0	O/F= 11.1111	F/A= 0.09000	PERCENT FUEL= 8.2569				PHI= 1.3189					
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	1.1564-4	1.2113-4	1.2668-4	1.3235-4	1.3824-4	1.4446-4	1.5115-4	1.5842-4	1.6638-4	1.7516-4	1.8490-4	1.9578-4	2.0802-4
M, MOL WT	26.569	26.837	27.028	27.151	27.224	27.265	27.287	27.299	27.305	27.308	27.310	27.311	27.311
CP, CAL/(G11K1)	0.9182	0.7708	0.6343	0.5252	0.4510	0.4059	0.3801	0.3652	0.3565	0.3512	0.3475	0.3448	0.3425
GAMMA (S)	1.1474	1.1570	1.1723	1.1924	1.2135	1.2312	1.2440	1.2526	1.2584	1.2623	1.2652	1.2677	1.2699
SON VEL, M/SEC	1002.7	983.8	968.3	955.5	943.1	929.3	913.2	895.1	875.4	854.5	832.7	810.0	786.5

MOLE FRACTIONS

AR	0.00785	0.00792	0.00798	0.00802	0.00804	0.00805	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806
CO	0.10424	0.09886	0.09459	0.09155	0.08977	0.08847	0.08742	0.08639	0.08527	0.08398	0.08248	0.08071	0.07861
CO2	0.05346	0.06044	0.06584	0.06921	0.07183	0.07336	0.07455	0.07565	0.07681	0.07812	0.07953	0.08140	0.08350
H	0.01411	0.00946	0.00625	0.00407	0.00258	0.00159	0.00094	0.00053	0.00028	0.00014	0.00006	0.00003	0.00001
H2	0.03009	0.02808	0.02687	0.02646	0.02666	0.02725	0.02808	0.02907	0.03022	0.03154	0.03306	0.03484	0.03695
H2O	0.10582	0.11379	0.11941	0.12290	0.12472	0.12539	0.12532	0.12476	0.12385	0.12266	0.12119	0.11944	0.11734
NO	0.00586	0.00394	0.00241	0.00134	0.00068	0.00032	0.00014	0.00005	0.00001	0.00000	0.00000	0.00000	0.00000
N2	0.65423	0.66183	0.66731	0.67089	0.67303	0.67422	0.67486	0.67520	0.67537	0.67545	0.67549	0.67551	0.67552
O	0.00415	0.00213	0.00097	0.00040	0.00014	0.00005	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01428	0.01005	0.00658	0.00400	0.00227	0.00120	0.00060	0.00028	0.00012	0.00005	0.00002	0.00000	0.00000
O2	0.00590	0.00351	0.00177	0.00076	0.00028	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000

ADD C1S1
ADD H2O1L1

CASE=	0	0/F=	10.0000	F/A=	0.10000	PERCENT FUEL=	9.0909	PHI=	1.4654								
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1980.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	3.2449-4	3.4767-4	3.7441-4	4.0561-4	4.4249-4	4.8679-4	5.4231-4	6.2859-4	7.4180-4	8.7808-4	1.0588-3	1.3247-3	2.1050-3				
M, MOL WT	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626	26.626
CP, CAL/(G11K1)	0.3459	0.3444	0.3432	0.3425	0.3428	0.3474	0.4414	0.8300	0.4999	0.3558	0.2964	0.2759	0.7405				
GAMMA (S)	1.2751	1.2767	1.2779	1.2786	1.2785	1.2756	1.2368	1.1644	1.2158	1.2681	1.3087	1.3313	1.1531				
SON VEL,M/SEC	772.8	747.1	720.2	692.2	662.7	631.1	588.8	530.6	499.1	468.5	433.4	390.8	288.5				

MOLE FRACTIONS

AR	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00781	0.00796	0.00805	0.00807	0.00802	0.00792	0.00779				
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01075	0.03187	0.04237	0.05401	0.06649	0.08143				
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00006	0.00136	0.01099	0.01638	0.01793	0.01443	0.00812	0.00003			
CO	0.10313	0.09959	0.09531	0.09009	0.08366	0.07565	0.06396	0.02884	0.00446	0.00036	0.00001	0.00000	0.00000	0.00000			
CO2	0.07085	0.07439	0.07868	0.08390	0.09032	0.09829	0.10914	0.12724	0.12698	0.11898	0.11056	0.10220	0.09254				
H2	0.05982	0.06336	0.06764	0.07286	0.07927	0.08706	0.09394	0.07213	0.03447	0.01072	0.00185	0.00013	0.00000				
H2O(L1)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2O	0.10581	0.10226	0.09758	0.09276	0.08634	0.07845	0.06936	0.07506	0.10372	0.12492	0.13965	0.15194	0.17181				
NH3	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00004	0.00007	0.00008	0.00006	0.00003	0.00001	0.00000				
N2	0.65260	0.65260	0.65260	0.65260	0.65260	0.65260	0.65438	0.66695	0.67399	0.67600	0.67144	0.66320	0.65264				

CASE=	0	0/F=	10.0000	F/A=	0.10000	PERCENT FUEL=	9.0909	PHI=	1.4654								
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	2.2830-4	2.3809-4	2.4816-4	2.5870-4	2.6987-4	2.8184-4	2.9481-4	3.0894-4	3.2443-4	3.4158-4	3.6053-4	3.8174-4	4.0561-4				
M, MOL WT	26.626	26.375	26.473	26.535	26.573	26.596	26.610	26.618	26.622	26.624	26.625	26.626	26.626				
CP, CAL/(G11K1)	0.6943	0.5855	0.5040	0.4483	0.4121	0.3891	0.3745	0.3653	0.3592	0.3551	0.3521	0.3497	0.3474				
GAMMA (S)	1.1710	1.1865	1.2040	1.2208	1.2350	1.2459	1.2539	1.2596	1.2637	1.2668	1.2693	1.2714	1.2734				
SON VEL,M/SEC	1019.5	1004.9	991.5	977.9	963.0	946.5	928.4	909.0	888.5	867.0	844.7	821.6	797.6				

MOLE FRACTIONS

AR	0.00767	0.00772	0.00775	0.00776	0.00778	0.00778	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779				
CO	0.12430	0.12218	0.12064	0.11948	0.11850	0.11755	0.11653	0.11537	0.11404	0.11250	0.11078	0.10858	0.10609				
CO2	0.04707	0.05016	0.05234	0.05370	0.05513	0.05624	0.05735	0.05856	0.05991	0.06147	0.06320	0.06540	0.06789				
H	0.01185	0.00820	0.00556	0.00367	0.00234	0.00144	0.00085	0.00048	0.00025	0.00013	0.00006	0.00002	0.00001				
H2	0.04249	0.04220	0.04246	0.04310	0.04397	0.04499	0.04613	0.04739	0.04880	0.05040	0.05223	0.05436	0.05686				
H2O	0.11030	0.11483	0.11761	0.11905	0.11956	0.11942	0.11882	0.11787	0.11664	0.11514	0.11336	0.11125	0.10877				
NO	0.00303	0.00185	0.00105	0.00055	0.00027	0.00013	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000				
N2	0.64129	0.64550	0.64831	0.65008	0.65116	0.65180	0.65217	0.65238	0.65249	0.65255	0.65258	0.65259	0.65260				
O	0.00153	0.00071	0.00030	0.00012	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
OH	0.00886	0.00585	0.00364	0.00215	0.00120	0.00063	0.00031	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000				
O2	0.00161	0.00079	0.00034	0.00013	0.00005	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				

CASE=	0	O/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000										
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	6.2931-3	6.5298-3	6.7836-3	7.0568-3	7.3522-3	7.6727-3	8.0220-3	8.4043-3	8.8247-3	9.2892-3	9.8053-3	1.0382-2	1.1031-2						
M, MOL WT	28.918	28.934	28.945	28.953	28.958	28.961	28.963	28.964	28.965	28.965	28.965	28.965	28.965						
CP, CAL/(G)(K)	0.3692	0.3592	0.3506	0.3432	0.3366	0.3308	0.3255	0.3205	0.3158	0.3113	0.3069	0.3025	0.2982						
GAMMA (SI	1.2376	1.2428	1.2480	1.2530	1.2580	1.2629	1.2677	1.2726	1.2776	1.2827	1.2879	1.2933	1.2988						
SON VEL.,M/SEC	998.2	982.0	965.4	948.5	931.0	913.2	894.8	875.9	856.4	836.4	815.7	794.4	772.3						

MOLE FRACTIONS

AR	0.00931	0.00931	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.00029	0.00029	0.00029	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.03583	0.03134	0.02708	0.02308	0.01939	0.01601	0.01298	0.01030	0.00798	0.00601	0.00438	0.00308	0.00207						
NO2	0.00015	0.00014	0.00013	0.00013	0.00012	0.00011	0.00011	0.00010	0.00009	0.00008	0.00007	0.00006	0.00006						
N2	0.76166	0.76433	0.76677	0.76898	0.77097	0.77275	0.77432	0.77569	0.77687	0.77787	0.77869	0.77934	0.77985						
O	0.00332	0.00223	0.00144	0.00090	0.00054	0.00031	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000						
O2	0.18944	0.19235	0.19496	0.19728	0.19936	0.20119	0.20280	0.20419	0.20539	0.20640	0.20722	0.20789	0.20840						

CASE=	0	O/F=	0.0000	F/A=	0.00000	PERCENT FUEL=	0.0000	PHI=	0.0000										
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	1.1766-2	1.2607-2	1.3576-2	1.4708-2	1.6045-2	1.7649-2	1.9610-2	2.2061-2	2.5213-2	2.9415-2	3.5298-2	4.4122-2	5.8830-2						
M, MOL WT	28.965	28.965	28.965	28.965	28.965	28.965	28.964	28.964	28.964	28.964	28.964	28.964	28.964						
CP, CAL/(G)(K)	0.2939	0.2898	0.2856	0.2815	0.2773	0.2730	0.2681	0.2626	0.2569	0.2512	0.2461	0.2422	0.2402						
GAMMA (SI	1.3044	1.3101	1.3161	1.3222	1.3287	1.3356	1.3439	1.3536	1.3644	1.3757	1.3865	1.3952	1.3999						
SON VEL.,M/SEC	749.4	725.6	700.8	674.9	647.7	619.2	589.2	557.5	523.6	486.8	446.1	400.3	347.2						

MOLE FRACTIONS

AR	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932	0.00932
CO2	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
NO	0.00131	0.00078	0.00043	0.00021	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00005	0.00004	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.78023	0.78050	0.78067	0.78078	0.78084	0.78087	0.78088	0.78089	0.78089	0.78089	0.78089	0.78089	0.78089						
O2	0.20879	0.20906	0.20924	0.20936	0.20942	0.20946	0.20947	0.20948	0.20948	0.20948	0.20949	0.20949	0.20949						

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931							
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0		
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	1.1768-4	1.2609-4	1.3579-4	1.4710-4	1.6047-4	1.7652-4	1.9613-4	2.2065-4	2.5217-4	2.9420-4	3.5304-4	4.4130-4	5.8840-4		
M, MOL WT	28.969	28.969	28.969	28.969	28.969	28.969	28.969	28.969	28.969	28.970	28.970	28.970	28.970		
CP, CAL/(G)(K)	0.3047	0.3001	0.2956	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.2442		
GAMMA (S)	1.2907	1.2964	1.3022	1.3083	1.3147	1.3218	1.3302	1.3399	1.3508	1.3623	1.3737	1.3837	1.3907		
SON VEL,M/SEC	745.4	721.7	697.0	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	346.0		

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O	0.03884	0.03886	0.03886	0.03867	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76516	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572
OH	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14488	0.14503	0.14512	0.14517	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931							
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0		
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3		
RHO, G/CC	1.2323-4	1.2867-4	1.3432-4	1.4022-4	1.4644-4	1.5308-4	1.6021-4	1.6796-4	1.7643-4	1.8576-4	1.9611-4	2.0766-4	2.2065-4		
M, MOL WT	28.314	28.508	28.656	28.764	28.840	28.890	28.923	28.943	28.955	28.962	28.966	28.968	28.969		
CP, CAL/(G)(K)	0.6899	0.6116	0.5418	0.4827	0.4355	0.3994	0.3727	0.3534	0.3394	0.3291	0.3212	0.3149	0.3095		
GAMMA (S)	1.1638	1.1721	1.1827	1.1954	1.2092	1.2231	1.2360	1.2474	1.2572	1.2655	1.2727	1.2791	1.2851		
SON VEL,M/SEC	978.2	960.7	944.6	929.4	914.7	899.8	884.1	867.5	849.7	830.8	810.9	790.0	768.2		

MOLE FRACTIONS

AR	0.00893	0.00900	0.00904	0.00908	0.00910	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.01204	0.00866	0.00584	0.00370	0.00220	0.00123	0.00064	0.00031	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000
CO2	0.02810	0.03175	0.03477	0.03707	0.03867	0.03972	0.04035	0.04071	0.04090	0.04099	0.04104	0.04105	0.04106		
H	0.00334	0.00197	0.00111	0.00059	0.00029	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00168	0.00122	0.00084	0.00055	0.00034	0.00020	0.00011	0.00006	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
H2O	0.02694	0.02974	0.03206	0.03322	0.03537	0.03646	0.03726	0.03783	0.03823	0.03849	0.03866	0.03876	0.03881		
NO	0.02826	0.02500	0.02179	0.01870	0.01578	0.01308	0.01064	0.00846	0.00656	0.00495	0.00361	0.00254	0.00170		
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73425	0.74100	0.74652	0.75093	0.75438	0.75707	0.75915	0.76078	0.76204	0.76303	0.76380	0.76440	0.76484		
O	0.01887	0.01276	0.00833	0.00524	0.00317	0.00183	0.00100	0.00052	0.00025	0.00011	0.00005	0.00002	0.00001		
OH	0.01538	0.01259	0.00997	0.00764	0.00566	0.00405	0.00279	0.00185	0.00117	0.00070	0.00040	0.00021	0.00010		
O2	0.12219	0.12628	0.12969	0.13256	0.13500	0.13708	0.13884	0.14031	0.14152	0.14250	0.14327	0.14387	0.14432		

ADD H20IL1

	CASE=	0	O/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862									
P, ATM		3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA		44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K		1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0
T, DEG F		2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0	0.0
RHO, G/CC		7.0620-4	7.5665-4	8.1485-4	8.8276-4	9.6301-4	1.0593-3	1.1770-3	1.3241-3	1.5133-3	1.7655-3	2.1186-3	2.6483-3	3.2783-3	4.0000-3	4.8000-3	5.6000-3	6.4000-3	7.2000-3
M, MOL HT		28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G1K1)		0.3140	0.3095	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.2466	0.2409	0.2352	0.2295	0.2238	0.2181
GAMMA (S)		1.2795	1.2848	1.2902	1.2956	1.3010	1.3064	1.3119	1.3173	1.3228	1.3282	1.3337	1.3391	1.3446	1.3501	1.3556	1.3611	1.3666	1.3721
SON VEL,M/SEC		742.1	718.4	693.8	668.1	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	352.0	307.0	262.0	217.0	172.0	127.0

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2OIL1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.07623	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75070	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.08297	0.08314	0.08325	0.08332	0.08336	0.08338	0.08338	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

	CASE=	0	O/F=	25.0000	F/A=	0.04000	PERCENT FUEL=	3.8462	PHI=	0.5862									
P, ATM		4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA		58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K		2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0	1100.0
T, DEG F		4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3	1520.3
RHO, G/CC		4.9501-4	5.1625-4	5.3841-4	5.6169-4	5.8635-4	6.1272-4	6.4116-4	6.7207-4	7.0592-4	7.4321-4	7.8459-4	8.3079-4	8.8274-4	9.4000-4	1.0000-3	1.1000-3	1.2000-3	1.3000-3
M, MOL HT		28.433	28.594	28.717	28.806	28.869	28.910	28.936	28.953	28.963	28.968	28.971	28.973	28.974	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G1K1)		0.6439	0.5775	0.5176	0.4669	0.4264	0.3957	0.3731	0.3568	0.3450	0.3362	0.3294	0.3237	0.3187	0.3140	0.3095	0.3050	0.3005	0.2960
GAMMA (S)		1.1668	1.1752	1.1857	1.1977	1.2104	1.2226	1.2337	1.2432	1.2512	1.2580	1.2639	1.2693	1.2745	1.2797	1.2849	1.2901	1.2953	1.3005
SON VEL,M/SEC		977.4	960.5	944.8	929.7	914.7	899.3	883.1	865.9	847.6	828.3	808.0	786.9	765.0	743.1	721.2	699.3	677.4	655.5

MOLE FRACTIONS

AR	0.00880	0.00885	0.00889	0.00892	0.00893	0.00895	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.01702	0.01194	0.00791	0.00494	0.00291	0.00161	0.00084	0.00041	0.00018	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.06175	0.06728	0.07165	0.07487	0.07707	0.07848	0.07933	0.07980	0.08006	0.08018	0.08024	0.08026	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H	0.00206	0.00120	0.00066	0.00035	0.00017	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00257	0.00179	0.00120	0.00077	0.00047	0.00027	0.00015	0.00008	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.06384	0.06700	0.06951	0.07145	0.07292	0.07399	0.07477	0.07531	0.07567	0.07591	0.07606	0.07616	0.07621	0.07621	0.07621	0.07621	0.07621	0.07621	0.07621
NO	0.02184	0.01908	0.01648	0.01406	0.01183	0.00979	0.00795	0.00633	0.00491	0.00370	0.00271	0.00190	0.00128	0.00080	0.00048	0.00028	0.00016	0.00009	0.00005
N2O	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72616	0.73171	0.73619	0.73972	0.74245	0.74455	0.74615	0.74739	0.74835	0.74910	0.74968	0.75013	0.75046	0.75070	0.75085	0.75093	0.75097	0.75099	0.75100
O	0.00733	0.00490	0.00317	0.00199	0.00120	0.00069	0.00038	0.00020	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01476	0.01171	0.00906	0.00682	0.00499	0.00354	0.00243	0.00160	0.00101	0.00061	0.00034	0.00018	0.00009	0.00005	0.00003	0.00002	0.00001	0.00001	0.00001
O2	0.07383	0.07451	0.07525	0.07609	0.07704	0.07802	0.07899	0.07990	0.08070	0.08138	0.08194	0.08238	0.08272	0.08297	0.08312	0.08319	0.08323	0.08325	0.08326

ADD H2O(L)

	CASE=	0	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327									
P, ATM		6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA		88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K		1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F		2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC		1.4125-3	1.5134-3	1.6298-3	1.7657-3	1.9262-3	2.1188-3	2.3542-3	2.6485-3	3.0269-3	3.5313-3	4.2376-3	5.2970-3	7.7539-3					
M, MOL HT		28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	31.813
CP, CAL/(G)(K)		0.3184	0.3140	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.2482					
GAMMA (S)		1.2746	1.2795	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.2304					
SON VEL, M/SEC		740.7	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	310.6					

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00998	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09440	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442
N2	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.74370	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05302	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

	CASE=	0	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327									
P, ATM		10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA		147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K		2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F		4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC		1.2412-3	1.2934-3	1.3480-3	1.4057-3	1.4669-3	1.5325-3	1.6034-3	1.6806-3	1.7651-3	1.8533-3	1.9517-3	2.0772-3	2.2070-3					
M, MOL HT		28.519	28.656	28.760	28.836	28.889	28.924	28.946	28.959	28.967	28.972	28.974	28.976	28.976	28.976	28.976	28.976	28.976	28.976
CP, CAL/(G)(K)		0.6046	0.5474	0.4955	0.4516	0.4165	0.3900	0.3705	0.3565	0.3464	0.3387	0.3327	0.3275	0.3228					
GAMMA (S)		1.1714	1.1798	1.1901	1.2016	1.2134	1.2244	1.2342	1.2425	1.2494	1.2552	1.2604	1.2652	1.2699					
SON VEL, M/SEC		977.9	961.4	945.8	930.7	915.5	899.7	883.1	865.5	846.9	827.3	806.9	785.6	763.5					

MOLE FRACTIONS

AR	0.00874	0.00878	0.00882	0.00884	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.01724	0.01199	0.00789	0.00491	0.00288	0.00159	0.00083	0.00040	0.00018	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.08051	0.08623	0.09069	0.09393	0.09614	0.09755	0.09839	0.09886	0.09911	0.09923	0.09929	0.09931	0.09932	0.09932	0.09931	0.09932	0.09931	0.09932	0.09932
H	0.00131	0.00076	0.00042	0.00022	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00261	0.00181	0.00121	0.00077	0.00047	0.00027	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.08359	0.08642	0.08864	0.09034	0.09161	0.09254	0.09319	0.09364	0.09394	0.09414	0.09426	0.09434	0.09438	0.09438	0.09438	0.09438	0.09438	0.09438	0.09438
N2	0.01775	0.01536	0.01318	0.01119	0.00939	0.00776	0.00630	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102						
N2O	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
O	0.72338	0.72809	0.73187	0.73481	0.73706	0.73877	0.74007	0.74106	0.74183	0.74242	0.74288	0.74324	0.74350						
O	0.00378	0.00250	0.00161	0.00100	0.00060	0.00035	0.00019	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01212	0.00950	0.00728	0.00545	0.00397	0.00281	0.00192	0.00127	0.00080	0.00048	0.00027	0.00014	0.00007						
O2	0.04893	0.04852	0.04837	0.04850	0.04888	0.04942	0.05004	0.05067	0.05126	0.05178	0.05221	0.05256	0.05282						

ADD H20(L)

CASE=	0	D/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATH	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0	0.0	0.0	0.0	0.0	0.0
RHO, G/CC	3.5316-3	3.7839-3	4.0745-3	4.4145-3	4.8158-3	5.2974-3	5.8860-3	6.6218-3	7.5677-3	8.8290-3	1.0595-2	1.3244-2	1.9845-2	3.2568	5.2568	8.2568	13.2568	21.2568	32.568
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)	0.3225	0.3182	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2571	0.2511	0.2458	0.2411	0.2367	0.2326	0.2287	0.2250
GAMMA (S)	1.2701	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.3761	1.3887	1.4015	1.4145	1.4277	1.4411	1.4546
SON VEL, M/SEC	739.3	715.6	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	348.8	300.0	250.0	200.0	150.0	100.0	50.0

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.11223	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224
N0	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02380	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	D/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATH	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3
RHO, G/CC	2.4829-3	2.5868-3	2.6960-3	2.8114-3	2.9340-3	3.0654-3	3.2072-3	3.3615-3	3.5306-3	3.719-3	3.9237-3	4.1547-3	4.4144-3	4.7000-3	5.0125-3	5.3625-3	5.7487-3	6.1715-3	6.6315-3
M, MOL WT	28.524	28.656	28.760	28.837	28.891	28.927	28.949	28.963	28.971	28.975	28.977	28.978	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)	0.5972	0.5462	0.4981	0.4555	0.4201	0.3927	0.3727	0.3585	0.3486	0.3414	0.3358	0.3311	0.3267	0.3231	0.3197	0.3166	0.3136	0.3107	0.3079
GAMMA (S)	1.1720	1.1796	1.1891	1.2000	1.2116	1.2227	1.2325	1.2407	1.2472	1.2526	1.2573	1.2615	1.2658	1.2701	1.2744	1.2787	1.2830	1.2873	1.2916
SON VEL, M/SEC	979.0	961.3	945.4	930.1	914.8	899.1	882.5	864.8	846.1	826.4	805.8	784.4	762.3	740.0	717.5	695.0	672.5	650.0	627.5

MOLE FRACTIONS

AR	0.00866	0.00870	0.00873	0.00876	0.00877	0.00878	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.02011	0.01429	0.00960	0.00607	0.00361	0.00201	0.00105	0.00051	0.00023	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.09605	0.10241	0.10752	0.11136	0.11405	0.11579	0.11685	0.11744	0.11775	0.11790	0.11797	0.11800	0.11801	0.11801	0.11801	0.11801	0.11801	0.11801	0.11801
H	0.00102	0.00059	0.00033	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H02	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00312	0.00220	0.00149	0.00077	0.00059	0.00035	0.00019	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.10206	0.10479	0.10693	0.10856	0.10976	0.11061	0.11120	0.11160	0.11186	0.11202	0.11212	0.11218	0.11221	0.11221	0.11221	0.11221	0.11221	0.11221	0.11221
N0	0.01280	0.01080	0.00905	0.00755	0.00626	0.00514	0.00416	0.00331	0.00257	0.00195	0.00142	0.00100	0.00067	0.00040	0.00025	0.00015	0.00009	0.00005	0.00003
N02	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.71908	0.72345	0.72695	0.72966	0.73169	0.73316	0.73422	0.73499	0.73556	0.73598	0.73630	0.73654	0.73672	0.73685	0.73695	0.73703	0.73709	0.73714	0.73718
O	0.00193	0.00125	0.00078	0.00048	0.00029	0.00016	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00957	0.00739	0.00559	0.00414	0.00299	0.00211	0.00144	0.00095	0.00060	0.00036	0.00020	0.00011	0.00005	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001
O2	0.02559	0.02411	0.02299	0.02226	0.02189	0.02183	0.02198	0.02225	0.02255	0.02286	0.02313	0.02335	0.02352	0.02366	0.02378	0.02388	0.02396	0.02403	0.02409

ADD H2O(L)
ADD C(S)

CASE=	0	D/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000										
P, ATM	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	-80.3	-260.3	-440.3	-620.3	-800.3	-980.3
RHO, G/CC	7.0635-3	7.5682-3	8.1504-3	8.8296-3	9.6323-3	1.0596-2	1.1773-2	1.3244-2	1.5136-2	1.7659-2	2.1191-2	2.7959-2	4.0395-2						
M, MOL WT	28.980	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981
CP, CAL/(G*IK)	0.3257	0.3213	0.3169	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2584	0.2510	0.2436	0.2362	0.2288	0.2214	0.2140	0.2066
GAMMA (S)	1.2668	1.2713	1.2761	1.2815	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3605	1.3738	1.3875	1.4016	1.4161	1.4310	1.4463	1.4620
SON VEL, M/SEC	738.4	714.6	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	396.3	349.3	300.0	248.0	193.0	135.0	74.0	10.0

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13313	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
O2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	D/F=	14.6540	F/A=	0.06824	PERCENT FUEL=	6.3882	PHI=	1.0000										
P, ATM	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000	40.000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0
T, DEG F	4980.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3
RHO, G/CC	4.9562-3	5.1620-3	5.3795-3	5.6105-3	5.8571-3	6.1217-3	6.4076-3	6.7183-3	7.0581-3	7.4321-3	7.8467-3	8.3093-3	8.8291-3						
M, MOL WT	28.468	28.591	28.693	28.774	28.837	28.884	28.918	28.942	28.958	28.968	28.974	28.978	28.980	28.980	28.980	28.980	28.980	28.980	28.980
CP, CAL/(G*IK)	0.5801	0.5401	0.5024	0.4682	0.4380	0.4122	0.3909	0.3737	0.3602	0.3497	0.3417	0.3354	0.3302	0.3250	0.3200	0.3150	0.3100	0.3050	0.3000
GAMMA (S)	1.1748	1.1809	1.1882	1.1964	1.2054	1.2147	1.2238	1.2324	1.2402	1.2470	1.2528	1.2579	1.2625	1.2670	1.2715	1.2760	1.2805	1.2850	1.2895
SON VEL, M/SEC	980.2	962.9	946.1	929.7	913.3	896.8	879.8	862.3	843.9	824.6	804.4	783.3	761.3	739.0	716.0	692.0	667.0	641.0	614.0

MOLE FRACTIONS

AR	0.00858	0.00861	0.00865	0.00867	0.00869	0.00870	0.00871	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.02582	0.01998	0.01500	0.01090	0.00766	0.00517	0.00336	0.00208	0.00122	0.00068	0.00035	0.00017	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000
CO2	0.10498	0.11139	0.11683	0.12130	0.12484	0.12754	0.12951	0.13090	0.13183	0.13242	0.13278	0.13298	0.13308	0.13313	0.13316	0.13316	0.13316	0.13316	0.13316
H	0.00083	0.00051	0.00030	0.00017	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00418	0.00322	0.00243	0.00180	0.00130	0.00091	0.00062	0.00041	0.00026	0.00015	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.11650	0.11904	0.12108	0.12268	0.12390	0.12480	0.12545	0.12591	0.12622	0.12641	0.12654	0.12661	0.12665	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00768	0.00592	0.00443	0.00323	0.00228	0.00155	0.00102	0.00064	0.00038	0.00021	0.00011	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00011	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71464	0.71863	0.72193	0.72458	0.72665	0.72820	0.72933	0.73013	0.73066	0.73100	0.73120	0.73132	0.73138	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143
O	0.00082	0.00048	0.00027	0.00015	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00667	0.00491	0.00350	0.00242	0.00161	0.00104	0.00064	0.00037	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.00927	0.00729	0.00555	0.00410	0.00292	0.00200	0.00132	0.00083	0.00050	0.00028	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000

ADD H2O(LI)
ADD C(S)

CASE=	0	0/F=	14.2857	F/A=	0.07000	PERCENT FUEL=				6.5421	PHI=	1.0258					
P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	1.1714-2	1.2550-2	1.3516-2	1.4642-2	1.5973-2	1.7571-2	1.9524-2	2.1981-2	2.5178-2	2.9416-2	3.5316-2	4.8293-2	6.7593-2				
M, MOL WT	28.836	28.836	28.836	28.836	28.836	28.836	28.836	28.859	28.924	28.966	28.979	31.702	33.279				
CP, CAL/(GIIK)	0.3261	0.3226	0.3188	0.3146	0.3102	0.3053	0.3006	0.3078	0.2995	0.2803	0.2676	0.7606	0.3108				
GAMMA (S)	1.2679	1.2716	1.2758	1.2804	1.2857	1.2916	1.2983	1.2974	1.3076	1.3280	1.3453	1.1981	1.2440				
SON VEL,M/SEC	740.5	716.5	691.5	665.6	638.6	610.3	580.4	546.8	512.9	478.2	439.3	354.5	305.4				

MOLE FRACTIONS

AR	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00867	0.00868	0.00870	0.00871	0.00872	0.00868	0.00867				
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00403	0.00502			
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00037	0.00149	0.00222	0.00246	0.00050	0.00000				
CO	0.00727	0.00692	0.00647	0.00590	0.00517	0.00426	0.00318	0.00175	0.00041	0.00004	0.00000	0.00000	0.00000				
CO2	0.12840	0.12876	0.12921	0.12978	0.13051	0.13141	0.13249	0.13367	0.13419	0.13403	0.13389	0.13129	0.13065				
H2	0.00278	0.00313	0.00359	0.00415	0.00487	0.00577	0.00677	0.00674	0.00358	0.00109	0.00019	0.00001	0.00000				
H2O(LI)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08547	0.12848			
H2O	0.12630	0.12595	0.12550	0.12493	0.12420	0.12330	0.12225	0.12161	0.12279	0.12404	0.12455	0.04273	0.00060				
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00003	0.00007	0.00009	0.00006	0.00004	0.00000	0.00000				
N2	0.72657	0.72657	0.72657	0.72657	0.72657	0.72657	0.72660	0.72711	0.72875	0.72980	0.73016	0.72729	0.72657				

CASE=	0	0/F=	12.5000	F/A=	0.08000	PERCENT FUEL=				7.4074	PHI=	1.1723					
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	5.8070-5	6.1135-5	6.4261-5	6.7446-5	7.0696-5	7.4043-5	7.7555-5	8.1320-5	8.5420-5	8.9932-5	9.4935-5	1.0052-4	1.0681-4				
M, MOL WT	26.684	27.089	27.420	27.672	27.845	27.948	28.001	28.026	28.037	28.042	28.044	28.046	28.046				
CP, CAL/(GIIK)	1.1422	1.0019	0.8607	0.7188	0.5843	0.4767	0.4092	0.3740	0.3567	0.3478	0.3427	0.3393	0.3364				
GAMMA (S)	1.1349	1.1381	1.1443	1.1555	1.1738	1.1987	1.2230	1.2405	1.2510	1.2572	1.2612	1.2642	1.2669				
SON VEL,M/SEC	995.1	971.1	949.8	931.6	917.2	905.6	893.8	879.1	861.4	841.6	820.4	798.2	775.2				

MOLE FRACTIONS

AR	0.00795	0.00807	0.00817	0.00825	0.00830	0.00833	0.00835	0.00835	0.00836	0.00836	0.00836	0.00836	0.00836				
CO	0.08961	0.08070	0.07183	0.06402	0.05817	0.05452	0.05251	0.05135	0.05048	0.04963	0.04867	0.04755	0.04621				
CO2	0.05251	0.06358	0.07422	0.08336	0.09014	0.09434	0.09652	0.09792	0.09885	0.09973	0.10069	0.10182	0.10316				
H	0.01751	0.01127	0.00706	0.00433	0.00262	0.00156	0.00091	0.00051	0.00027	0.00014	0.00006	0.00003	0.00001				
H02	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000				
H2	0.02318	0.01991	0.01710	0.01498	0.01368	0.01317	0.01324	0.01367	0.01431	0.01510	0.01604	0.01717	0.01852				
H2O	0.09318	0.10403	0.11284	0.11946	0.12392	0.12647	0.12760	0.12783	0.12754	0.12692	0.12605	0.12496	0.12363				
NO	0.00952	0.00723	0.00512	0.00330	0.00189	0.00095	0.00042	0.00017	0.00006	0.00002	0.00001	0.00000	0.00000				
N2	0.66137	0.67262	0.68193	0.68914	0.69417	0.69721	0.69879	0.69954	0.69987	0.70002	0.70008	0.70010	0.70011				
O	0.00948	0.00548	0.00289	0.00136	0.00056	0.00020	0.00006	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000				
OH	0.02026	0.01543	0.01102	0.00731	0.00445	0.00247	0.00125	0.00058	0.00025	0.00010	0.00003	0.00001	0.00000				
O2	0.01541	0.01165	0.00782	0.00449	0.00211	0.00079	0.00024	0.00006	0.00001	0.00000	0.00000	0.00000	0.00000				

C	1.000000	H	1.966699	0.000000	0.000000	0.000000	100.00000000	-5059.80	L	298.150	F	0.80700
AR	1.000000		0.000000	0.000000	0.000000	0.000000	0.01285800	0.00	G	0.000	0	0.00000
C	1.000000	O	2.000000	0.000000	0.000000	0.000000	0.00045600	0.00	G	0.000	0	0.00000
N	2.000000		0.000000	0.000000	0.000000	0.000000	0.75525296	0.00	G	0.000	0	0.00000
O	2.000000		0.000000	0.000000	0.000000	0.000000	0.23143297	0.00	G	0.000	0	0.00000

CASE=	0	O/F=	100.0000	F/A=	0.01000	PERCENT FUEL=	0.9901	PHI=	0.1465	0.5000	0.5000	0.5000	0.5000	0.5000
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3
RHO, G/CC	6.1517-5	6.4264-5	6.7106-5	7.0071-5	7.3196-5	7.6521-5	8.0095-5	8.3971-5	8.8208-5	9.2873-5	9.8046-5	1.0382-4	1.1031-4	1.1791-4
M, MOL WT	28.268	28.476	28.634	28.749	28.830	28.884	28.918	28.939	28.952	28.959	28.963	28.965	28.966	28.966
CP, CAL/(G)(K)	0.7036	0.6209	0.5473	0.4854	0.4359	0.3980	0.3700	0.3497	0.3351	0.3244	0.3163	0.3099	0.3044	0.3000
GAMMA (S)	1.1640	1.1723	1.1832	1.1962	1.2105	1.2250	1.2398	1.2510	1.2615	1.2704	1.2781	1.2849	1.2912	1.2970
SON VEL, M/SEC	979.1	961.4	945.1	930.0	915.3	900.6	885.2	868.8	851.2	832.5	812.7	791.8	770.1	748.0

MOLE FRACTIONS	0.00901	0.00907	0.00913	0.00916	0.00919	0.00920	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
AR	0.00729	0.00535	0.00367	0.00236	0.00141	0.00079	0.00042	0.00020	0.00009	0.00004	0.00001	0.00000	0.00000	0.00000
CO	0.01309	0.01518	0.01697	0.01837	0.01937	0.02003	0.02043	0.02065	0.02078	0.02084	0.02086	0.02088	0.02088	0.02088
H	0.00338	0.00206	0.00118	0.00064	0.00032	0.00015	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H02	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00086	0.00066	0.00048	0.00033	0.00021	0.00013	0.00007	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.01051	0.01251	0.01419	0.01559	0.01673	0.01760	0.01826	0.01874	0.01907	0.01930	0.01944	0.01953	0.01958	0.01958
N0	0.03085	0.02747	0.02405	0.02070	0.01750	0.01452	0.01181	0.00939	0.00729	0.00549	0.00401	0.00281	0.00189	0.00119
N02	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73915	0.74637	0.75230	0.75706	0.76081	0.76374	0.76602	0.76780	0.76919	0.77027	0.77112	0.77177	0.77226	0.77266
O	0.02904	0.01975	0.01296	0.00818	0.00495	0.00286	0.00157	0.00081	0.00039	0.00017	0.00007	0.00003	0.00001	0.00000
OH	0.01197	0.01016	0.00827	0.00647	0.00486	0.00352	0.00244	0.00163	0.00103	0.00062	0.00035	0.00019	0.00009	0.00004
O2	0.14472	0.15138	0.15678	0.16113	0.16463	0.16744	0.16969	0.17148	0.17290	0.17401	0.17489	0.17555	0.17605	0.17650

ADD H20(L)

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931									
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	2.3536-4	2.5217-4	2.7157-4	2.9420-4	3.2095-4	3.5304-4	3.9227-4	4.4130-4	5.0435-4	5.8840-4	7.0609-4	8.8261-4	1.1820-3				
M, MOL WT	28.969	28.969	28.969	28.970	28.970	28.969	28.969	28.969	28.969	28.970	28.970	28.970	29.096				
CP, CAL/(G)(K)	0.3046	0.3000	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	1.0066				
GAMMA (S)	1.2908	1.2965	1.3023	1.3083	1.3147	1.3218	1.3302	1.3399	1.3508	1.3623	1.3737	1.3837	1.1695				
SON VEL./M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	316.6				

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00436
H2O	0.03884	0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03451
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76516	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572	0.76572
OH	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14488	0.14503	0.14512	0.14517	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931									
P, ATM	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	1.8552-4	1.9350-4	2.0182-4	2.1056-4	2.1982-4	2.2971-4	2.4038-4	2.5197-4	2.6467-4	2.7835-4	2.9417-4	3.1149-4	3.3097-4				
M, MOL WT	28.416	28.581	28.706	28.797	28.860	28.902	28.930	28.947	28.957	28.963	28.966	28.968	28.969				
CP, CAL/(G)(K)	0.6394	0.5710	0.5106	0.4602	0.4200	0.3893	0.3664	0.3497	0.3373	0.3279	0.3206	0.3146	0.3093				
GAMMA (S)	1.1697	1.1784	1.1893	1.2017	1.2147	1.2275	1.2393	1.2497	1.2586	1.2664	1.2732	1.2794	1.2852				
SON VEL./M/SEC	978.9	962.1	946.4	931.3	916.5	901.2	885.2	868.2	850.2	831.1	811.1	790.1	768.2				

MOLE FRACTIONS

AR	0.00897	0.00902	0.00906	0.00909	0.00911	0.00912	0.00913	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.01040	0.00736	0.00490	0.00308	0.00182	0.00101	0.00053	0.00026	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00001	0.00000	0.00000
CO2	0.02988	0.03316	0.03579	0.03774	0.03909	0.03996	0.04048	0.04077	0.04093	0.04101	0.04104	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H	0.00252	0.00148	0.00083	0.00044	0.00022	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00144	0.00103	0.00070	0.00046	0.00028	0.00017	0.00009	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.02829	0.03077	0.03283	0.03447	0.03575	0.03672	0.03743	0.03794	0.03829	0.03853	0.03868	0.03877	0.03882				
NO	0.02845	0.02512	0.02186	0.01874	0.01580	0.01309	0.01064	0.00846	0.00656	0.00495	0.00361	0.00254	0.00170				
NO2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
O	0.73685	0.74288	0.74781	0.75177	0.75491	0.75738	0.75933	0.76088	0.76210	0.76306	0.76382	0.76440	0.76484				
O	0.01549	0.01045	0.00682	0.00429	0.00259	0.00149	0.00082	0.00042	0.00020	0.00009	0.00004	0.00001	0.00000				
OH	0.01427	0.01155	0.00912	0.00696	0.00514	0.00367	0.00253	0.00167	0.00106	0.00064	0.00036	0.00019	0.00009				
O2	0.12342	0.12712	0.13025	0.13295	0.13527	0.13726	0.13895	0.14038	0.14156	0.14252	0.14328	0.14388	0.14433				

ADD H2O(L)

	CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396								
P, ATM		2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA		29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K		1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0				
T, DEG F		2240.3	2060.3	*880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3				
RHO, G/CC	4.	7076-4	5.0439-4	5.4319-4	5.8845-4	6.4195-4	7.0615-4	7.8461-4	8.8268-4	1.0088-3	1.1769-3	1.4123-3	1.7654-3	2.4548-3				
M, MOL WT		28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	30.214				
CP, CAL/(G*IK)		0.3094	0.3048	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.6202				
GAMMA (S)		1.2850	1.2904	1.2960	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.1969				
SON VEL./M/SEC		743.7	720.0	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	314.3				

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04112
H2	0.05772	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.01662
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11364	0.11392	0.11397	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

	CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=	2.9126	PHI=	0.4396								
P, ATM		3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA		44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K		2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0				
T, DEG F		4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3				
RHO, G/CC	3.	7170-4	3.8750-4	4.0401-4	4.2139-4	4.3982-4	4.5956-4	4.8086-4	5.0402-4	5.2940-4	5.5736-4	5.8839-4	6.2304-4	6.6200-4				
M, MOL WT		28.467	28.618	28.732	28.815	28.872	28.911	28.936	28.951	28.960	28.966	28.969	28.971	28.971				
CP, CAL/(G*IK)		0.6213	0.5576	0.5014	0.4544	0.4171	0.3887	0.3675	0.3520	0.3406	0.3318	0.3249	0.3192	0.3140				
GAMMA (S)		1.1708	1.1795	1.1902	1.2023	1.2147	1.2267	1.2376	1.2470	1.2552	1.2622	1.2685	1.2742	1.2797				
SON VEL./M/SEC		978.5	961.9	946.3	931.3	916.3	900.8	884.5	867.2	849.0	829.7	809.5	788.5	766.5				

MOLE FRACTIONS

AR	0.00890	0.00894	0.00898	0.00900	0.00902	0.00903	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.01291	0.00901	0.00594	0.00370	0.00217	0.00120	0.00063	0.00030	0.00014	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.04689	0.05111	0.05441	0.05683	0.05847	0.05952	0.06015	0.06051	0.06070	0.06079	0.06083	0.06085	0.06085	0.06085	0.06085	0.06085	0.06085	0.06085
H	0.00203	0.00118	0.00065	0.00034	0.00017	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
HO2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00187	0.00131	0.00088	0.00057	0.00035	0.00020	0.00011	0.00006	0.00003	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.04656	0.04930	0.05152	0.05326	0.05459	0.05558	0.05631	0.05682	0.05717	0.05741	0.05755	0.05764	0.05769	0.05769				
NO	0.02536	0.02228	0.01932	0.01653	0.01392	0.01153	0.00937	0.00745	0.00578	0.00436	0.00318	0.00224	0.00150	0.00100				
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73244	0.73792	0.74239	0.74596	0.74877	0.75097	0.75270	0.75407	0.75515	0.75600	0.75667	0.75719	0.75758	0.75758				
O	0.00979	0.00658	0.00428	0.00269	0.00162	0.00093	0.00051	0.00026	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000				
OH	0.01456	0.01164	0.00905	0.00685	0.00503	0.00357	0.00245	0.00162	0.00102	0.00061	0.00035	0.00018	0.00009	0.00000				
O2	0.09866	0.10069	0.10254	0.10426	0.10586	0.10734	0.10867	0.10983	0.11082	0.11164	0.11230	0.11282	0.11322	0.11322				

ADD H20(L)

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862											
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	9.4160-4	1.0089-3	1.0865-3	1.1770-3	1.2840-3	1.4124-3	1.5693-3	1.7655-3	2.0177-3	2.3540-3	2.8248-3	3.5310-3	5.0525-3						
M, MOL WT	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G*IK)	0.3140	0.3095	0.3049	0.3002	0.2954	0.2902	0.2843	0.2779	0.2712	0.2644	0.2580	0.2523	0.4448						
GAMMA (SI)	1.2796	1.2848	1.2902	1.2961	1.3024	1.3095	1.3179	1.3276	1.3386	1.3503	1.3622	1.3733	1.2234						
SON VEL./SEC	742.1	718.4	693.8	668.1	641.2	613.0	583.4	552.1	518.5	482.2	442.1	397.0	313.3						

MOLE FRACTIONS

AR	0.00897	0.00897	0.00897	0.00997	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO2	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027	0.08027
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.06818						
H2O	0.07623	0.07624	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.07625	0.00807						
NO	0.00081	0.00048	0.00027	0.00013	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
N2	0.75070	0.75087	0.75098	0.75105	0.75109	0.75111	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112	0.75112
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
O2	0.08297	0.08314	0.08325	0.08332	0.08336	0.08338	0.08338	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339	0.08339

	CASE= 0	O/F= 25.0000	F/A= 0.04000	PERCENT FUEL= 3.8462				PHI= 0.5862											
P, ATM	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
P, PSIA	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4800.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	7.4466-4	7.7597-4	8.0874-4	8.4330-4	8.8003-4	9.1940-4	9.6193-4	1.0082-3	1.0589-3	1.1149-3	1.1769-3	1.2462-3	1.3241-3						
M, MOL WT	28.515	28.653	28.757	28.833	28.885	28.920	28.942	28.956	28.964	28.969	28.972	28.973	28.974	28.974	28.974	28.974	28.974	28.974	28.974
CP, CAL/(G*IK)	0.6028	0.5439	0.4917	0.4481	0.4136	0.3874	0.3680	0.3538	0.3433	0.3353	0.3289	0.3234	0.3185						
GAMMA (SI)	1.1724	1.1811	1.1917	1.2033	1.2152	1.2264	1.2363	1.2449	1.2523	1.2586	1.2643	1.2695	1.2746						
SON VEL./SEC	978.3	962.0	946.5	931.4	916.2	900.5	884.0	866.4	847.9	828.5	808.1	787.0	765.0						

MOLE FRACTIONS

AR	0.00883	0.00887	0.00840	0.00892	0.00894	0.00895	0.00896	0.00896	0.00896	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897	0.00897
CO	0.01454	0.01006	0.00659	0.00408	0.00239	0.00132	0.00069	0.00033	0.00015	0.00006	0.00002	0.00001	0.00000						
CO2	0.06446	0.06932	0.07308	0.07580	0.07763	0.07880	0.07950	0.07989	0.08009	0.08020	0.08024	0.08026	0.08027						
H	0.00154	0.00089	0.00049	0.00026	0.00013	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000						
HO2	0.00003	0.00002	0.00002	0.00031	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000						
H2	0.00215	0.00149	0.00099	0.00063	0.00039	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000						
H2O	0.06537	0.06813	0.07032	0.07202	0.07330	0.07425	0.07493	0.07541	0.07573	0.07595	0.07608	0.07616	0.07621						
NO	0.02182	0.01907	0.01647	0.01406	0.01183	0.00979	0.00795	0.00633	0.00491	0.00370	0.00271	0.00190	0.00128						
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001						
N2	0.72830	0.73324	0.73724	0.74040	0.74287	0.74480	0.74629	0.74747	0.74839	0.74912	0.74969	0.75013	0.75046						
O	0.00597	0.00399	0.00259	0.00162	0.00098	0.00056	0.00031	0.00016	0.00008	0.00003	0.00001	0.00001	0.00000						
OH	0.01348	0.01066	0.00823	0.00619	0.00452	0.00321	0.00220	0.00145	0.00091	0.00055	0.00031	0.00016	0.00008						
O2	0.07349	0.07423	0.07506	0.07599	0.07699	0.07802	0.07901	0.07991	0.08071	0.08139	0.08195	0.08239	0.08272						

ADD H20IL1

CASE=	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327										
P, ATH	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
P, PSIA	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0	147.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	2.3542-3	2.5224-3	2.7164-3	2.9428-3	3.2103-3	3.5313-3	3.9237-3	4.4141-3	5.0447-3	5.8855-3	7.0627-3	8.8283-3	1.2953-2					
M, MOL WT	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977
CP, CAL/(G)(K)	0.3184	0.3139	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.2486					
GAMMA (S)	1.2746	1.2795	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.2467					
SON VEL,M/SEC	740.7	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	312.3					

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09440	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74370	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05302	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

CASE=	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL=	4.7619	PHI=	0.7327										
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC	1.8664-3	1.9435-3	2.0244-3	2.1101-3	2.2014-3	2.2994-3	2.4055-3	2.5211-3	2.6477-3	2.7875-3	2.9425-3	3.1158-3	3.3106-3					
M, MOL WT	28.588	28.705	28.794	28.858	28.902	28.932	28.950	28.962	28.969	28.973	28.975	28.976	28.976					
CP, CAL/(G)(K)	0.5700	0.5189	0.4735	0.4356	0.4056	0.3829	0.3662	0.3540	0.3449	0.3380	0.3323	0.3273	0.3228					
GAMMA (S)	1.1768	1.1855	1.1957	1.2067	1.2176	1.2277	1.2365	1.2439	1.2503	1.2557	1.2607	1.2654	1.2700					
SON VEL,M/SEC	978.9	962.9	947.5	932.3	916.9	900.8	883.9	866.0	847.2	827.5	806.9	785.6	763.6					

MOLE FRACTIONS

AR	0.00876	0.00880	0.00883	0.00885	0.00886	0.00887	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.01468	0.01009	0.00657	0.00406	0.00237	0.00131	0.00068	0.00033	0.00015	0.00006	0.00002	0.00001	0.00000					
CO2	0.09831	0.08830	0.09212	0.09486	0.09670	0.09786	0.09855	0.09894	0.09915	0.09925	0.09929	0.09931	0.09932					
H	0.00098	0.00057	0.00031	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000					
H2O	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000					
H2	0.00218	0.00151	0.00100	0.00063	0.00039	0.00022	0.00012	0.00006	0.00003	0.00001	0.00001	0.00001	0.00000					
H2O	0.08496	0.08743	0.08936	0.09084	0.09195	0.09275	0.09333	0.09373	0.09399	0.09417	0.09428	0.09435	0.09438					
NO	0.01763	0.01528	0.01313	0.01117	0.00938	0.00776	0.00630	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102					
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001					
N2	0.72521	0.72940	0.73276	0.73539	0.73742	0.73898	0.74019	0.74113	0.74186	0.74244	0.74289	0.74324	0.74351					
O	0.00306	0.00203	0.00131	0.00082	0.00049	0.00028	0.00016	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000					
OH	0.01099	0.00861	0.00660	0.00493	0.00359	0.00254	0.00174	0.00115	0.00072	0.00043	0.00025	0.00013	0.00006					
O2	0.04818	0.04794	0.04798	0.04827	0.04875	0.04936	0.05002	0.05067	0.05126	0.05178	0.05221	0.05256	0.05282					

ADD H20(L)

	CASE=	O/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	0	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA		293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K		1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0					
T, DEG F		2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3					
RHO, G/CC	4.7088-3	5.0451-3	5.4332-3	5.8860-3	6.4211-3	7.0632-3	7.8480-3	8.8290-3	1.0090-2	1.1772-2	1.4126-2	1.7658-2	2.6475-2						
M, MOL WT		28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)		0.3225	0.3182	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2775	0.2706	0.2635	0.2571	0.3227					
GAMMA (S)		1.2701	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3637	1.2484					
SON VEL,M/SEC		739.3	715.6	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	395.6	309.1					

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11802	0.11802	0.11862	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.00154
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02380	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

	CASE=	O/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	0	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
P, PSIA		440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K		2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0					
T, DEG F		4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3					
RHO, G/CC	3.7329-3	3.8868-3	4.0488-3	4.2204-3	4.4032-3	4.5994-3	4.8116-3	5.0427-3	5.2961-3	5.5735-3	5.8856-3	6.2321-3	6.6217-3						
M, MOL WT		28.589	28.704	28.794	28.859	28.905	28.935	28.954	28.965	28.972	28.975	28.977	28.978	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G)(K)		0.5665	0.5200	0.4770	0.4395	0.4088	0.3854	0.3682	0.3560	0.3472	0.3406	0.3354	0.3309	0.3266					
GAMMA (S)		1.1769	1.1849	1.1944	1.2051	1.2160	1.2261	1.2349	1.2422	1.2481	1.2531	1.2575	1.2617	1.2658					
SON VEL,M/SEC		979.0	962.6	947.0	931.6	916.2	900.2	883.3	865.3	846.4	826.6	805.9	784.5	762.3					

MOLE FRACTIONS

AR	0.00868	0.00872	0.00874	0.00876	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.01732	0.01215	0.00807	0.00505	0.00298	0.00165	0.00086	0.00042	0.00019	0.00008	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.09911	0.10475	0.10919	0.11247	0.11473	0.11618	0.11705	0.11754	0.11780	0.11792	0.11798	0.11800	0.11801	0.11801	0.11801	0.11801	0.11801	0.11801	0.11801
H	0.00076	0.00044	0.00025	0.00013	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00263	0.00185	0.00124	0.00030	0.00049	0.00028	0.00016	0.00008	0.00004	0.00002	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.10340	0.10577	0.10763	0.10904	0.11008	0.11081	0.11133	0.11167	0.11190	0.11204	0.11213	0.11219	0.11219	0.11219	0.11219	0.11219	0.11219	0.11219	0.11219
NO	0.01254	0.01061	0.00894	0.00749	0.00623	0.00512	0.00416	0.00331	0.00257	0.00195	0.00142	0.00100	0.00076	0.00057	0.00042	0.00031	0.00021	0.00014	0.00009
NO2	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72087	0.72477	0.72787	0.73027	0.73206	0.73338	0.73434	0.73506	0.73559	0.73600	0.73631	0.73654	0.73672	0.73681	0.73684	0.73685	0.73685	0.73685	0.73685
O	0.00154	0.00100	0.00063	0.00039	0.00023	0.00013	0.00007	0.00004	0.00002	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00861	0.00665	0.00503	0.00373	0.00270	0.00190	0.00130	0.00086	0.00054	0.00032	0.00018	0.00010	0.00005	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001
O2	0.02450	0.02327	0.02238	0.02185	0.02165	0.02170	0.02192	0.02222	0.02255	0.02286	0.02313	0.02335	0.02352	0.02365	0.02371	0.02374	0.02375	0.02375	0.02375

ADD H2O(L)
ADD C(S)

CASE=	0	0/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	9.4180-3	1.0091-2	1.0867-2	1.1773-2	1.2843-2	1.4127-2	1.5697-2	1.7659-2	2.0182-2	2.3546-2	2.8255-2	3.8069-2	5.3875-2
M, MOL WT	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	31.238	33.156
CP, CAL/(G)(K)	0.3256	0.3213	0.3169	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2510	0.2127
GAMMA (S)	1.2669	1.2714	1.2762	1.2815	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.1981	1.2449
SON VEL,M/SEC	738.4	714.6	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	357.1	306.0

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13313	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.07225	0.12592
H2O	0.12666	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.05443	0.00076
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
O2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE=	0	0/F= 14.6540	F/A= 0.06824	PERCENT FUEL= 6.3882				PHI= 1.0000					
P, ATM	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	6.2025-3	6.4583-3	6.7289-3	7.0165-3	7.3238-3	7.6539-3	8.0107-3	8.3986-3	8.8231-3	9.2905-3	9.8085-3	1.0387-2	1.1036-2
M, MOL WT	28.502	28.617	28.712	28.788	28.846	28.891	28.923	28.945	28.960	28.969	28.975	28.978	28.980
CP, CAL/(G)(K)	0.5461	0.5282	0.4926	0.4603	0.4319	0.4077	0.3876	0.3715	0.3587	0.3488	0.3411	0.3351	0.3301
GAMMA (S)	1.1771	1.1833	1.1905	1.1987	1.2075	1.2165	1.2253	1.2336	1.2410	1.2475	1.2532	1.2581	1.2626
SON VEL,M/SEC	980.5	963.4	946.8	930.3	913.9	897.3	880.3	862.6	844.2	824.8	804.5	783.4	761.3

MOLE FRACTIONS

AR	0.00859	0.00862	0.00865	0.00867	0.00869	0.00870	0.00871	0.00872	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.02430	0.01876	0.01406	0.01020	0.00715	0.00483	0.00313	0.00194	0.00114	0.00063	0.00033	0.00016	0.00007
CO2	0.10665	0.11273	0.11787	0.12207	0.12539	0.12791	0.12976	0.13105	0.13192	0.13247	0.13280	0.13299	0.13309
H	0.00072	0.00044	0.00026	0.00014	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00389	0.00300	0.00227	0.00168	0.00121	0.00085	0.00058	0.00038	0.00024	0.00014	0.00008	0.00004	0.00002
H2O	0.11722	0.11958	0.12147	0.12296	0.12409	0.12493	0.12554	0.12596	0.12625	0.12643	0.12655	0.12661	0.12665
NO	0.00742	0.00571	0.00427	0.00311	0.00219	0.00149	0.00098	0.00061	0.00037	0.00021	0.00011	0.00005	0.00002
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.71562	0.71939	0.72250	0.72500	0.72694	0.72840	0.72946	0.73021	0.73071	0.73102	0.73122	0.73133	0.73138
O	0.00071	0.00042	0.00023	0.00013	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00622	0.00457	0.00326	0.00225	0.00150	0.00096	0.00059	0.00034	0.00019	0.00010	0.00005	0.00002	0.00001
O2	0.00864	0.00678	0.00515	0.00379	0.00270	0.00185	0.00122	0.00076	0.00046	0.00026	0.00014	0.00007	0.00003

ADD C1S1
ADD H2O(L)

CASE=	0	0/F=	12.5000	F/A=	0.08000	PERCENT FUEL= 7.4074				PHI= 1.1723				
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	
RHO, G/CC	1.1393-4	1.2207-4	1.3146-4	1.4241-4	1.5536-4	1.7089-4	1.8988-4	2.1369-4	2.4634-4	2.9202-4	3.5274-4	4.4148-4	6.4182-4	
M, MOL WT	28.046	28.046	28.046	28.046	28.046	28.046	28.046	28.055	28.300	28.755	28.945	28.981	31.599	
CP, CAL/(G)(K)	0.3338	0.3313	0.3289	0.3266	0.3245	0.3226	0.3205	0.3289	0.4557	0.3749	0.2956	0.2692	1.7738	
GAMMA (S)	1.2695	1.2720	1.2746	1.2771	1.2794	1.2815	1.2840	1.2809	1.2306	1.2610	1.3130	1.3428	1.1342	
SON VEL,M/SEC	751.3	726.6	700.9	674.0	645.9	616.4	585.3	551.1	503.1	467.7	434.3	392.5	299.2	

MOLE FRACTIONS

AR	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836	0.00843	0.00855	0.00852	0.00844	0.00836
C1S1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00239	0.01259	0.02230	0.03185
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00016	0.00452	0.01139	0.00952	0.00515	0.00026
CO	0.04458	0.04259	0.04013	0.03708	0.03329	0.02858	0.02286	0.01608	0.00644	0.00068	0.00002	0.00000	0.00000	0.00000
CO2	0.10480	0.10679	0.10925	0.11229	0.11609	0.12079	0.12651	0.13318	0.13977	0.13831	0.13010	0.12346	0.11734	
H2	0.02015	0.02214	0.02460	0.02765	0.03144	0.03615	0.04185	0.04802	0.04077	0.01511	0.00266	0.00018	0.00000	
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08014
H2O	0.12200	0.12001	0.11755	0.11450	0.11071	0.10600	0.10029	0.09384	0.09359	0.10745	0.12313	0.13312	0.16156	
NH3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00003	0.00003	0.00002	0.00001	0.00000	
N2	0.70011	0.70012	0.70012	0.70012	0.70012	0.70012	0.70012	0.70012	0.70644	0.71608	0.71345	0.70733	0.70049	

CASE=	0	0/F=	12.5000	F/A=	0.08000	PERCENT FUEL= 7.4074				PHI= 1.1723				
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	
RHO, G/CC	1.1762-4	1.2344-4	1.2939-4	1.3547-4	1.4174-4	1.4826-4	1.5519-4	1.6268-4	1.7086-4	1.7987-4	1.8987-4	2.0105-4	2.1361-4	
M, MOL WT	27.025	27.348	27.604	27.792	27.913	27.981	28.016	28.032	28.040	28.043	28.045	28.045	28.046	
CP, CAL/(G)(K)	0.9831	0.8627	0.7396	0.6175	0.5100	0.4331	0.3882	0.3648	0.3528	0.3462	0.3421	0.3390	0.3363	
GAMMA (S)	1.1413	1.1461	1.1548	1.1692	1.1900	1.2135	1.2329	1.2457	1.2534	1.2582	1.2616	1.2644	1.2670	
SON VEL,M/SEC	991.5	970.0	951.0	935.1	922.3	910.7	897.2	880.9	862.2	841.9	820.5	798.3	775.2	

MOLE FRACTIONS

AR	0.00805	0.00815	0.00823	0.00828	0.00832	0.00834	0.00835	0.00835	0.00836	0.00836	0.00836	0.00836	0.00836	0.00836
CO	0.08309	0.07458	0.06677	0.06049	0.05618	0.05364	0.05220	0.05126	0.05046	0.04962	0.04868	0.04755	0.04621	
CO2	0.06086	0.07108	0.08025	0.08723	0.09249	0.09539	0.09702	0.09804	0.09889	0.09974	0.10069	0.10182	0.10316	
H	0.01161	0.00749	0.00473	0.00294	0.00181	0.00109	0.00064	0.00036	0.00019	0.00010	0.00005	0.00002	0.00001	
H02	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
H2	0.02038	0.01758	0.01536	0.01385	0.01307	0.01291	0.01316	0.01365	0.01431	0.01510	0.01605	0.01717	0.01852	
H2O	0.10239	0.11109	0.11789	0.12278	0.12586	0.12747	0.12807	0.12804	0.12763	0.12695	0.12607	0.12497	0.12363	
NO	0.00848	0.00622	0.00422	0.00260	0.00142	0.00069	0.00030	0.00012	0.00004	0.00001	0.00000	0.00000	0.00000	
N2	0.67039	0.67958	0.68698	0.69247	0.69609	0.69816	0.69922	0.69972	0.69994	0.70005	0.70009	0.70011	0.70011	
O	0.00532	0.00331	0.00168	0.00076	0.00030	0.00010	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	
OH	0.01679	0.01240	0.00859	0.00553	0.00327	0.00178	0.00089	0.00041	0.00018	0.00007	0.00002	0.00001	0.00000	
O2	0.01204	0.00852	0.00529	0.00277	0.00119	0.00042	0.00012	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	

ADD C(S)
ADD H2O(L)

CASE=	0	0/F=	10.0000	F/A=	0.10000	PERCENT FUEL=				9.0909	PHI=				1.4654	
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0			
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3			
RHO, G/CC	6.4897-4	6.9533-4	7.4882-4	8.1123-4	8.8500-4	9.7392-4	1.0906-3	1.2724-3	1.4914-3	1.7590-3	2.1182-3	2.6494-3	4.2600-3			
M, MOL WT	26.626	26.626	26.626	26.627	26.628	26.639	26.846	27.843	28.556	28.868	28.968	28.968	34.956			
CP, CAL/(G*IK)	0.3459	0.3444	0.3432	0.3426	0.3434	0.3582	0.5706	0.7061	0.4482	0.3371	0.2919	0.2755	0.5251			
GAMMA (S)	1.2751	1.2767	1.2779	1.2786	1.2782	1.2705	1.2066	1.1782	1.2299	1.2784	1.3126	1.3318	1.1709			
SON VEL,M/SEC	772.8	747.1	720.2	692.2	662.6	629.7	579.9	530.5	500.7	470.0	434.0	390.9	289.0			

MOLE FRACTIONS

AR	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00786	0.00801	0.00808	0.00808	0.00802	0.00792	0.00779			
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01686	0.03329	0.04332	0.05410	0.06650	0.08146		
CH4	0.00000	0.00000	0.00000	0.00000	0.00001	0.00022	0.00409	0.01398	0.01833	0.01858	0.01453	0.00812	0.00001			
CO	0.10313	0.09959	0.09531	0.09008	0.08364	0.07540	0.05990	0.02037	0.00314	0.00025	0.00001	0.00000	0.00000	0.00000		
CO2	0.07085	0.07439	0.07868	0.08390	0.09033	0.09845	0.11143	0.12766	0.12563	0.11831	0.11041	0.10219	0.09251			
H2	0.05982	0.06336	0.06764	0.07285	0.07924	0.08670	0.08791	0.05736	0.02577	0.00771	0.00131	0.00009	0.00000			
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15681			
H2O	0.10581	0.10226	0.09758	0.09276	0.08635	0.07851	0.07078	0.08480	0.10914	0.12682	0.14002	0.15196	0.00880			
NH3	0.00000	0.00000	0.00001	0.00001	0.00002	0.00004	0.00008	0.00010	0.00010	0.00007	0.00004	0.00001	0.00000			
N2	0.65260	0.65260	0.65260	0.65260	0.65262	0.65289	0.65795	0.67086	0.67654	0.67686	0.67157	0.66320	0.65261			

CASE=	0	0/F=	10.0000	F/A=	0.10000	PERCENT FUEL=				9.0909	PHI=				1.4654	
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8			
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0			
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3			
RHO, G/CC	4.5880-4	4.7761-4	4.9722-4	5.1794-4	5.4006-4	5.6388-4	5.8972-4	6.1793-4	6.4890-4	6.8309-4	7.2107-4	7.6349-4	8.1122-4			
M, MOL WT	26.353	26.454	26.520	26.563	26.585	26.605	26.615	26.620	26.623	26.625	26.626	26.626	26.626			
CP, CAL/(G*IK)	0.5905	0.5136	0.4582	0.4206	0.3958	0.3797	0.3693	0.3624	0.3577	0.3543	0.3517	0.3496	0.3476			
GAMMA (S)	1.1865	1.2021	1.2177	1.2314	1.2424	1.2508	1.2569	1.2613	1.2647	1.2673	1.2696	1.2716	1.2734			
SON VEL,M/SEC	1023.8	1010.0	996.3	981.6	965.6	948.2	929.4	909.6	888.8	867.2	844.8	821.6	797.6			

MOLE FRACTIONS

AR	0.00771	0.00774	0.00776	0.00777	0.00778	0.00778	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779	0.00779
CO	0.12322	0.12161	0.12040	0.11942	0.11851	0.11758	0.11655	0.11539	0.11405	0.11250	0.11070	0.10858	0.10609			
CO2	0.04898	0.05125	0.05289	0.05475	0.05523	0.05627	0.05736	0.05855	0.05991	0.06147	0.06328	0.06540	0.06789			
H	0.00833	0.00579	0.00393	0.00260	0.00166	0.00102	0.00060	0.00034	0.00018	0.00009	0.00004	0.00002	0.00001			
H2	0.04200	0.04206	0.04250	0.04320	0.04408	0.04507	0.04619	0.04743	0.04882	0.05041	0.05223	0.05436	0.05686			
H2O	0.11449	0.11748	0.11919	0.11996	0.12007	0.11969	0.11896	0.11794	0.11668	0.11516	0.11336	0.11126	0.10877			
N0	0.00226	0.00134	0.00075	0.00039	0.00019	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000			
N2	0.64478	0.64770	0.64963	0.65084	0.65159	0.65204	0.65230	0.65244	0.65252	0.65256	0.65258	0.65259	0.65260			
O	0.00080	0.00037	0.00015	0.00006	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000			
OH	0.00654	0.00424	0.00261	0.00153	0.00085	0.00045	0.00022	0.00010	0.00004	0.00002	0.00001	0.00000	0.00000			
O2	0.00089	0.00042	0.00018	0.00007	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000			

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465					
P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	1.1767-4	1.2607-4	1.3577-4	1.4709-4	1.6046-4	1.7651-4	1.9612-4	2.2063-4	2.5215-4	2.9418-4	3.5301-4	4.4126-4	5.8835-4
M, MOL WT	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967	28.967
CP, CAL/(G*IK)	0.2996	0.2950	0.2907	0.2864	0.2820	0.2774	0.2723	0.2666	0.2606	0.2546	0.2482	0.2428	0.2422
GAMMA (S)	1.2971	1.3030	1.3089	1.3151	1.3215	1.3285	1.3369	1.3466	1.3574	1.3688	1.3799	1.3893	1.3952
SON VEL, M/SEC	747.3	723.6	698.9	673.0	645.9	617.5	587.7	556.1	522.2	485.5	445.0	399.4	346.6

MOLE FRACTIONS

AR	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923	0.00923
CO2	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088	0.02088
H2O	0.01960	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962	0.01962
N2	0.00120	0.00072	0.00033	0.00000	0.00009	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.77262	0.77287	0.77303	0.77313	0.77319	0.77321	0.77322	0.77323	0.77323	0.77323	0.77323	0.77323	0.77323
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.17642	0.17667	0.17683	0.17693	0.17699	0.17702	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703	0.17703

CASE=	0	0/F=100.0000	F/A= 0.01000	PERCENT FUEL= 0.9901				PHI= 0.1465					
P, ATM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
P, PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	1.2382-4	1.2911-4	1.3462-4	1.4042-4	1.4657-4	1.5315-4	1.6025-4	1.6798-4	1.7644-4	1.8576-4	1.9610-4	2.0764-4	2.2063-4
M, MOL WT	28.448	28.604	28.721	28.806	28.865	28.905	28.930	28.946	28.956	28.961	28.964	28.966	28.966
CP, CAL/(G*IK)	0.6154	0.5503	0.4936	0.4467	0.4094	0.3808	0.3593	0.3434	0.3315	0.3225	0.3153	0.3094	0.3042
GAMMA (S)	1.1745	1.1836	1.1947	1.2072	1.2202	1.2329	1.2446	1.2550	1.2641	1.2720	1.2790	1.2854	1.2914
SON VEL, M/SEC	980.4	963.8	948.3	933.3	918.4	903.1	887.1	870.1	852.0	833.0	812.9	792.0	770.1

MOLE FRACTIONS

AR	0.00907	0.00912	0.00915	0.00918	0.00920	0.00921	0.00922	0.00922	0.00923	0.00923	0.00923	0.00923	0.00923
CO	0.00574	0.00408	0.00273	0.00172	0.00102	0.00057	0.00030	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000
CO2	0.01477	0.01654	0.01797	0.01905	0.01979	0.02027	0.02056	0.02072	0.02081	0.02085	0.02087	0.02088	0.02088
H	0.00213	0.00128	0.00072	0.00039	0.00019	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
H2O	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00069	0.00051	0.00036	0.00024	0.00015	0.00009	0.00005	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000
H2O	0.01210	0.01373	0.01513	0.01629	0.01723	0.01795	0.01849	0.01889	0.01916	0.01935	0.01947	0.01954	0.01959
HC	0.03138	0.02779	0.02423	0.02030	0.01756	0.01455	0.01182	0.00940	0.00729	0.00549	0.00401	0.00281	0.00189
NO2	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.74368	0.74963	0.75454	0.75853	0.76173	0.76429	0.76633	0.76797	0.76927	0.77032	0.77114	0.77178	0.77227
O	0.02082	0.01410	0.00922	0.00580	0.00351	0.00202	0.00111	0.00057	0.00028	0.00012	0.00005	0.00002	0.00001
OH	0.01083	0.00899	0.00720	0.00557	0.00416	0.00299	0.00207	0.00137	0.00087	0.00052	0.00030	0.00016	0.00008
O2	0.14877	0.15421	0.15871	0.16241	0.16546	0.16795	0.16999	0.17165	0.17299	0.17406	0.17491	0.17556	0.17606

ADD H2O(L)

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000	1,5000
P, PSIA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3
RHO, G/CC	3.5304-4	3.7826-4	4.0736-4	4.4130-4	4.8142-4	5.2956-4	5.8840-4	6.6195-4	7.5652-4	8.8261-4	1.0591-3	1.3239-3	1.7942-3
M, MOL WT	28.969	28.969	28.969	28.970	28.970	28.970	28.969	28.969	28.969	28.970	28.970	28.970	29.445
CP, CAL/(G*IK)	0.3045	0.3000	0.2955	0.2911	0.2865	0.2818	0.2764	0.2704	0.2642	0.2579	0.2522	0.2474	0.2451
GAMMA (S)	1.2909	1.2965	1.3023	1.3083	1.3147	1.3218	1.3302	1.3399	1.3508	1.3633	1.3737	1.3837	1.1878
SON VEL,M/SEC	745.5	721.8	697.1	671.3	644.3	615.9	586.2	554.7	520.9	484.3	444.0	398.6	317.2

MOLE FRACTIONS

AR	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO2	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106	0.04106
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01613
H2	0.03885	0.03886	0.03886	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.03887	0.02273
NO	0.00108	0.00065	0.00036	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.76516	0.76539	0.76554	0.76563	0.76568	0.76570	0.76571	0.76571	0.76571	0.76572	0.76572	0.76572	0.76572
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.14465	0.14488	0.14563	0.14512	0.14517	0.14520	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521	0.14521

	CASE= 0	O/F= 50.0000	F/A= 0.02000	PERCENT FUEL= 1.9608				PHI= 0.2931					
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3
RHO, G/CC	2.4790-4	2.5841-4	2.6938-4	2.8094-4	2.9321-4	3.0636-4	3.2055-4	3.3599-4	3.5290-4	3.7155-4	3.9223-4	4.1532-4	4.4129-4
M, MOL WT	28.479	28.626	28.736	28.816	28.872	28.910	28.934	28.949	28.958	28.963	28.966	28.968	28.969
CP, CAL/(G*IK)	0.6079	0.5458	0.4915	0.4464	0.4106	0.3832	0.3627	0.3474	0.3360	0.3272	0.3202	0.3144	0.3092
GAMMA (S)	1.1739	1.1829	1.1937	1.2058	1.2183	1.2304	1.2414	1.2511	1.2595	1.2669	1.2735	1.2795	1.2853
SON VEL,M/SEC	979.6	963.1	947.6	932.6	917.6	902.1	885.9	868.7	850.5	831.3	811.2	790.1	768.3

MOLE FRACTIONS

AR	0.00899	0.00903	0.00907	0.00909	0.00911	0.00912	0.00913	0.00914	0.00914	0.00914	0.00914	0.00914	0.00914
CO	0.00923	0.00653	0.00431	0.00269	0.00158	0.00088	0.00046	0.00022	0.00010	0.00004	0.00002	0.00001	0.00000
CO2	0.03104	0.03405	0.03642	0.03816	0.03934	0.04010	0.04056	0.04081	0.04095	0.04101	0.04104	0.04106	0.04106
H	0.00206	0.00120	0.00067	0.00035	0.00018	0.00008	0.00004	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00128	0.00091	0.00062	0.00040	0.00025	0.00015	0.00008	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000
H2O	0.02914	0.03143	0.03331	0.03482	0.03599	0.03688	0.03754	0.03801	0.03834	0.03855	0.03869	0.03878	0.03882
NO	0.02856	0.02519	0.02190	0.01876	0.01581	0.01310	0.01064	0.00846	0.00656	0.00495	0.00361	0.00254	0.00170
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73846	0.74402	0.74859	0.75228	0.75523	0.75757	0.75944	0.76094	0.76213	0.76308	0.76383	0.76441	0.76484
O	0.01345	0.00907	0.00591	0.00372	0.00224	0.00129	0.00071	0.00037	0.00018	0.00008	0.00003	0.00001	0.00000
OH	0.01350	0.01091	0.00856	0.00651	0.00480	0.00343	0.00236	0.00156	0.00098	0.00059	0.00034	0.00018	0.00009
O2	0.12415	0.12762	0.13060	0.13319	0.13543	0.13737	0.13903	0.14042	0.14159	0.14253	0.14329	0.14388	0.14433

ADD H20(L)

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=			2.9126	PHI=					0.4396		
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	400.0	300.0	300.0	300.0	300.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	260.3	80.3	80.3	80.3	80.3
RHO, G/CC	7.0614-4	7.5658-4	8.1478-4	8.8268-4	9.6293-4	1.0592-3	1.1769-3	1.3240-3	1.5132-3	1.7654-3	2.1184-3	2.6480-3	3.7038-3	3.7038-3	3.7038-3	3.7038-3	3.7038-3
M, MOL WT	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972	28.972
CP, CAL/(G)(K)	0.3093	0.3048	0.3003	0.2957	0.2910	0.2860	0.2804	0.2742	0.2677	0.2612	0.2551	0.2499	0.2499	0.2499	0.2499	0.2499	0.2499
GAMMA (S)	1.2850	1.2904	1.2961	1.3020	1.3084	1.3154	1.3238	1.3336	1.3445	1.3561	1.3678	1.3784	1.3784	1.3784	1.3784	1.3784	1.3784
SON VEL, M/SEC	743.8	720.0	695.4	669.6	642.7	614.4	584.7	553.3	519.7	483.2	443.0	397.8	316.1	316.1	316.1	316.1	316.1

MOLE FRACTIONS

AR	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO2	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086	0.06086
H20(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.05772	0.05773	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774	0.05774
NO	0.00095	0.00057	0.00031	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.75786	0.75806	0.75819	0.75827	0.75831	0.75833	0.75834	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835	0.75835
OH	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.11351	0.11371	0.11364	0.11392	0.11397	0.11399	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400	0.11400

CASE=	0	0/F=	33.3333	F/A=	0.03000	PERCENT FUEL=			2.9126	PHI=					0.4396		
P, ATM	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
P, PSIA	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1600.0	1600.0	1600.0	1600.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2420.3	2420.3	2420.3	2420.3
RHO, G/CC	4.9658-4	5.1740-4	5.3920-4	5.6219-4	5.8665-4	6.1288-4	6.4123-4	6.7208-4	7.0589-4	7.4317-4	7.8453-4	8.3072-4	8.8266-4	8.8266-4	8.8266-4	8.8266-4	8.8266-4
M, MOL WT	28.524	28.658	28.759	28.832	28.883	28.917	28.939	28.953	28.962	28.966	28.966	28.971	28.971	28.971	28.971	28.971	28.971
CP, CAL/(G)(K)	0.5926	0.5346	0.4839	0.4418	0.4086	0.3831	0.3641	0.3500	0.3394	0.3312	0.3246	0.3190	0.3140	0.3140	0.3140	0.3140	0.3140
GAMMA (S)	1.1749	1.1839	1.1945	1.2062	1.2180	1.2293	1.2394	1.2483	1.2560	1.2627	1.2688	1.2744	1.2797	1.2797	1.2797	1.2797	1.2797
SON VEL, M/SEC	979.2	963.0	947.6	932.5	917.3	901.6	885.1	867.6	849.2	829.8	809.6	788.5	766.6	766.6	766.6	766.6	766.6

MOLE FRACTIONS

AR	0.00891	0.00896	0.00899	0.00901	0.00903	0.00904	0.00904	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905	0.00905
CO	0.01153	0.00797	0.00521	0.00323	0.00189	0.00105	0.00054	0.00026	0.00012	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.04839	0.05223	0.05520	0.05733	0.05878	0.05970	0.06025	0.06055	0.06072	0.06080	0.06080	0.06083	0.06085	0.06085	0.06085	0.06085	0.06085
H	0.00165	0.00096	0.00053	0.00028	0.00014	0.00006	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00003	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00165	0.00115	0.00077	0.00049	0.00030	0.00018	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.04751	0.05002	0.05204	0.05362	0.05484	0.05575	0.05642	0.05689	0.05722	0.05743	0.05757	0.05765	0.05770	0.05770	0.05770	0.05770	0.05770
NO	0.02541	0.02231	0.01934	0.01654	0.01393	0.01153	0.00937	0.00745	0.00578	0.00436	0.00318	0.00224	0.00150	0.00100	0.00070	0.00050	0.00040
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.73390	0.73896	0.74310	0.74641	0.74905	0.75114	0.75280	0.75412	0.75518	0.75602	0.75668	0.75719	0.75758	0.75758	0.75758	0.75758	0.75758
O	0.00849	0.00570	0.00371	0.00233	0.00140	0.00081	0.00044	0.00023	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.01369	0.01091	0.00847	0.00640	0.00469	0.00333	0.00229	0.00151	0.00095	0.00057	0.00032	0.00017	0.00008	0.00004	0.00003	0.00002	0.00001
O2	0.09883	0.10080	0.10262	0.10432	0.10592	0.10739	0.10870	0.10985	0.11083	0.11165	0.11231	0.11283	0.11322	0.11322	0.11322	0.11322	0.11322

ADD H20:L1

CASE=	0	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327					
P, ATM	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000	15.000
P, PSIA	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4	220.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3		
RHO, G/CC	3.5313-3	3.7836-3	4.0746-3	4.4142-3	4.8154-3	5.2970-3	5.8855-3	6.6212-3	7.5671-3	8.8283-3	1.0594-2	1.3242-2	1.9452-2		
M, MOL WT	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977	28.977
CP, CAL/(G*IK)	0.3183	0.3139	0.3094	0.3047	0.2997	0.2943	0.2882	0.2816	0.2746	0.2675	0.2608	0.2547	0.2484	0.2421	0.2358
GAMMA (S)	1.2746	1.2795	1.2848	1.2905	1.2968	1.3038	1.3122	1.3220	1.3329	1.3447	1.3568	1.3684	1.3811	1.3947	1.4092
SON VEL,M/SEC	740.7	716.9	692.3	666.6	639.8	611.6	582.1	550.9	517.4	481.2	441.2	396.3	313.4		

MOLE FRACTIONS

AR	0.00888	0.00888	0.00888	0.00958	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO2	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932	0.09932
H2O(L1)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.09440	0.09441	0.09441	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442	0.09442
NO	0.00065	0.00039	0.00021	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NO2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.74370	0.74383	0.74392	0.74397	0.74400	0.74402	0.74402	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403	0.74403
OH	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.05302	0.05315	0.05324	0.05330	0.05333	0.05334	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335	0.05335

CASE=	0	O/F=	20.0000	F/A=	0.05000	PERCENT FUEL= 4.7619				PHI= 0.7327					
P, ATM	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
P, PSIA	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9	293.9
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3
RHO, G/CC	2.4922-3	2.5940-3	2.7012-3	2.8148-3	2.9360-3	3.0664-3	3.2077-3	3.3616-3	3.5304-3	3.7167-3	3.9234-3	4.1544-3	4.4141-3		
M, MOL WT	28.631	28.736	28.815	28.872	28.911	28.937	28.953	28.963	28.969	28.973	28.975	28.976	28.977	28.977	28.977
CP, CAL/(G*IK)	0.5480	0.5010	0.4598	0.4258	0.3989	0.3786	0.3636	0.3525	0.3441	0.3375	0.3320	0.3272	0.3227	0.3183	0.3139
GAMMA (S)	1.1806	1.1895	1.1995	1.2101	1.2204	1.2297	1.2379	1.2449	1.2508	1.2561	1.2609	1.2655	1.2700	1.2746	1.2795
SON VEL,M/SEC	979.8	964.0	948.6	933.4	917.8	901.5	884.3	866.3	847.3	827.6	807.0	785.7	763.6		

MOLE FRACTIONS

AR	0.00878	0.00881	0.00883	0.00885	0.00886	0.00887	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888	0.00888
CO	0.01305	0.00890	0.00576	0.00354	0.00206	0.00113	0.00059	0.00028	0.00013	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000
CO2	0.08509	0.08960	0.09301	0.09542	0.09704	0.09805	0.09865	0.09899	0.09917	0.09926	0.09930	0.09931	0.09932	0.09932	0.09932
H	0.00080	0.00046	0.00025	0.00013	0.00006	0.00003	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00003	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00192	0.00132	0.00087	0.00055	0.00033	0.00019	0.00011	0.00005	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.08583	0.08806	0.08981	0.09115	0.09215	0.09289	0.09341	0.09378	0.09403	0.09419	0.09429	0.09435	0.09438	0.09438	0.09438
NO	0.01756	0.01524	0.01310	0.01115	0.00937	0.00775	0.00630	0.00502	0.00390	0.00294	0.00215	0.00151	0.00102	0.00071	0.00051
NO2	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72635	0.73021	0.73330	0.73574	0.73763	0.73911	0.74026	0.74116	0.74188	0.74245	0.74290	0.74324	0.74351	0.74377	0.74399
O	0.00264	0.00175	0.00113	0.00071	0.00043	0.00025	0.00013	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
OH	0.01026	0.00803	0.00615	0.00460	0.00335	0.00237	0.00162	0.00107	0.00067	0.00040	0.00023	0.00012	0.00006	0.00003	0.00001
O2	0.04769	0.04759	0.04774	0.04813	0.04868	0.04933	0.05001	0.05067	0.05127	0.05178	0.05221	0.05256	0.05282	0.05300	0.05313

ADD H2O(L)

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
P, PSIA	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9	440.9
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	200.0	100.0	0.0	0.0	0.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	7.0632-3	7.5677-3	8.1499-3	8.8290-3	9.6316-3	1.0595-2	1.1772-2	1.3244-2	1.5135-2	1.7658-2	2.1190-2	2.7502-2	3.9735-2						
M, MOL WT	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G*IK)	0.3225	0.3182	0.3137	0.3089	0.3038	0.2983	0.2920	0.2851	0.2779	0.2706	0.2635	0.2562	0.2489	0.2416	0.2343	0.2270	0.2197	0.2124	0.2051
GAMMA (SI)	1.2701	1.2747	1.2797	1.2853	1.2915	1.2985	1.3069	1.3166	1.3276	1.3394	1.3517	1.3641	1.3765	1.3889	1.4013	1.4137	1.4261	1.4385	1.4509
SON VEL,M/SEC	739.3	715.6	690.9	665.2	638.4	610.4	580.9	549.7	516.4	480.2	440.4	399.7	359.0	318.2	276.5	234.8	193.1	151.4	109.7

MOLE FRACTIONS

AR	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO2	0.11801	0.11802	0.11802	0.11862	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802	0.11802
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.11223	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224	0.11224
NO	0.00043	0.00026	0.00014	0.00007	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73685	0.73694	0.73700	0.73703	0.73705	0.73706	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707	0.73707
OH	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
O2	0.02365	0.02374	0.02380	0.02384	0.02386	0.02387	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388	0.02388

CASE=	0	0/F=	16.6667	F/A=	0.06000	PERCENT FUEL=	5.6604	PHI=	0.8792										
P, ATM	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
P, PSIA	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3
RHO, G/CC	4.9844-3	5.1878-3	5.4024-3	5.6298-3	5.8726-3	6.1336-3	6.4161-3	6.7240-3	7.0616-3	7.4311-3	7.8476-3	8.3094-3	8.8289-3						
M, MOL WT	28.630	28.735	28.815	28.873	28.913	28.940	28.957	28.967	28.973	28.976	28.978	28.978	28.979	28.979	28.979	28.979	28.979	28.979	28.979
CP, CAL/(G*IK)	0.5466	0.5033	0.4637	0.4295	0.4019	0.3808	0.3654	0.3544	0.3463	0.3402	0.3352	0.3308	0.3266	0.3225	0.3183	0.3141	0.3099	0.3057	0.3015
GAMMA (SI)	1.1805	1.1886	1.1981	1.2084	1.2188	1.2282	1.2364	1.2431	1.2487	1.2534	1.2577	1.2618	1.2659	1.2699	1.2739	1.2779	1.2819	1.2859	1.2899
SON VEL,M/SEC	979.7	963.6	948.1	932.7	917.1	900.9	883.7	865.6	846.6	826.6	805.9	784.5	762.3	740.1	717.9	695.7	673.5	651.3	629.1

MOLE FRACTIONS

AR	0.00869	0.00873	0.00875	0.00877	0.00878	0.00879	0.00879	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880	0.00880
CO	0.01552	0.01079	0.00711	0.00443	0.00260	0.00144	0.00075	0.00036	0.00016	0.00007	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.10108	0.10623	0.11023	0.11315	0.11515	0.11642	0.11718	0.11760	0.11783	0.11793	0.11798	0.11800	0.11801	0.11801	0.11801	0.11801	0.11801	0.11801	0.11801
H	0.00062	0.00036	0.00020	0.00010	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.00002	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2	0.00233	0.00163	0.00109	0.00070	0.00043	0.00025	0.00014	0.00007	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.10424	0.10639	0.10807	0.10934	0.11027	0.11094	0.11140	0.11172	0.11193	0.11206	0.11214	0.11219	0.11222	0.11222	0.11222	0.11222	0.11222	0.11222	0.11222
NO	0.01237	0.01050	0.00887	0.00745	0.00620	0.00511	0.00415	0.00331	0.00257	0.00195	0.00142	0.00100	0.00067	0.00034	0.00011	0.00000	0.00000	0.00000	0.00000
NO2	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
N2	0.72201	0.72559	0.72844	0.73064	0.73229	0.73351	0.73441	0.73509	0.73561	0.73601	0.73631	0.73654	0.73672	0.73686	0.73696	0.73703	0.73708	0.73711	0.73713
O	0.00132	0.00086	0.00054	0.00033	0.00020	0.00011	0.00006	0.00003	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.00799	0.00617	0.00467	0.00346	0.00251	0.00177	0.00121	0.00080	0.00050	0.00030	0.00017	0.00009	0.00004	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000
O2	0.02380	0.02273	0.02200	0.02160	0.02150	0.02162	0.02188	0.02220	0.02254	0.02285	0.02313	0.02335	0.02352	0.02366	0.02376	0.02383	0.02388	0.02391	0.02393

ADD H2O(L)
ADD C(S)

CASE= 0 O/F= 14.6540 F/A= 0.06824 PERCENT FUEL= 6.3882 PHI= 1.0000

P, ATM	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
P, PSIA	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8	734.8
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0	0.0
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3	0.0
RHO, G/CC	1.1773-2	1.2614-2	1.3584-2	1.4716-2	1.6054-2	1.7659-2	1.9621-2	2.2074-2	2.5227-2	2.9432-2	3.5318-2	4.8179-2	6.7356-2	0.0
M, MOL HT	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	28.981	31.627	33.162
CP, CAL/(G)(K)	0.3256	0.3213	0.3169	0.3122	0.3071	0.3015	0.2951	0.2880	0.2806	0.2731	0.2658	0.2586	0.2515	0.2444
GAMMA (S)	1.2670	1.2714	1.2762	1.2815	1.2875	1.2944	1.3027	1.3124	1.3234	1.3353	1.3477	1.3607	1.3744	1.3884
SON VEL, M/SEC	738.4	714.6	689.9	664.2	637.4	609.4	580.0	548.8	515.5	479.4	439.7	395.5	346.2	291.0

MOLE FRACTIONS

AR	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873
CO	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
CO2	0.13313	0.13315	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316	0.13316
H2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.12667	0.12667	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668	0.12668
NO	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
N2	0.73141	0.73142	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143	0.73143
O2	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

CASE= 0 O/F= 14.2857 F/A= 0.07000 PERCENT FUEL= 6.5421 PHI= 1.0258

P, ATM	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
P, PSIA	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0	0.0
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3	0.0
RHO, G/CC	5.8828-5	6.1956-5	6.5190-5	6.8511-5	7.1968-5	7.5580-5	7.9383-5	8.3422-5	8.7751-5	9.2444-5	9.7605-5	1.0335-4	1.0982-4	0.0
M, MOL HT	27.032	27.453	27.812	28.109	28.346	28.529	28.661	28.750	28.802	28.825	28.833	28.835	28.836	0.0
CP, CAL/(G)(K)	1.1398	1.0197	0.9046	0.7958	0.6950	0.6043	0.5250	0.4565	0.3988	0.3594	0.3414	0.3340	0.3298	0.0
GAMMA (S)	1.1340	1.1359	1.1396	1.1454	1.1538	1.1653	1.1800	1.1985	1.2209	1.2421	1.2544	1.2603	1.2643	0.0
SON VEL, M/SEC	988.2	963.8	941.1	920.3	901.3	883.8	867.8	853.1	839.6	825.0	806.9	786.0	763.7	0.0

MOLE FRACTIONS

AR	0.00813	0.00826	0.00837	0.00846	0.00853	0.00858	0.00862	0.00865	0.00866	0.00867	0.00867	0.00867	0.00867	0.00867
CO	0.07243	0.06198	0.05104	0.04042	0.03085	0.02285	0.01666	0.01232	0.00973	0.00853	0.00806	0.00780	0.00756	0.00731
CO2	0.05476	0.06719	0.07982	0.09184	0.10252	0.11138	0.11820	0.12296	0.12579	0.12710	0.12760	0.12787	0.12812	0.12837
H	0.01481	0.00924	0.00553	0.00366	0.002173	0.00091	0.00046	0.00022	0.00011	0.00005	0.00002	0.00001	0.00000	0.00000
H2	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
H2O	0.01658	0.01338	0.01048	0.00801	0.00601	0.00446	0.00333	0.00256	0.00215	0.00203	0.00211	0.00227	0.00250	0.00275
H2O	0.08597	0.09619	0.10472	0.11156	0.11684	0.12076	0.12354	0.12537	0.12641	0.12684	0.12690	0.12678	0.12658	0.12638
NO	0.01241	0.01006	0.00783	0.00582	0.00411	0.00272	0.00166	0.00090	0.00041	0.00015	0.00004	0.00001	0.00000	0.00000
N2	0.67492	0.68670	0.69685	0.70534	0.71218	0.71746	0.72134	0.72396	0.72552	0.72623	0.72647	0.72654	0.72656	0.72656
O	0.01223	0.00754	0.00438	0.00238	0.00120	0.00055	0.00023	0.00008	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000
OH	0.02211	0.01740	0.01306	0.00933	0.00633	0.00405	0.00242	0.00132	0.00064	0.00026	0.00009	0.00003	0.00001	0.00000
O2	0.02564	0.02205	0.01792	0.01367	0.00969	0.00626	0.00356	0.00167	0.00057	0.00013	0.00002	0.00000	0.00000	0.00000

ADD C(S)
ADD H2O(L)

CASE=	0	0/F=	11.1111	F/A=	0.09000	PERCENT FUEL=	8.2569	PHI=	1.3189										
P, ATM	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
P, PSIA	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
T, DEG K	1500.0	1400.0	1300.0	1200.0	1100.0	1000.0	900.0	800.0	700.0	600.0	500.0	400.0	300.0						
T, DEG F	2240.3	2060.3	1880.3	1700.3	1520.3	1340.3	1160.3	980.3	800.3	620.3	440.3	260.3	80.3						
RHO, G/CC	4.4378-4	4.7547-4	5.1205-4	5.5472-4	6.0515-4	6.6570-4	7.4049-4	8.4632-4	9.9265-4	1.1721-3	1.4119-3	1.7661-3	2.7672-3						
M, MOL HT	27.311	27.311	27.311	27.311	27.311	27.311	27.343	27.775	28.509	28.853	28.964	28.985	34.060						
CP, CAL/(G)(K)	0.3404	0.3385	0.3369	0.3356	0.3350	0.3364	0.3757	0.6041	0.4639	0.3395	0.2896	0.2719	0.6299						
GAMMA IS1	1.2719	1.2738	1.2755	1.2768	1.2776	1.2768	1.2577	1.1964	1.2256	1.2785	1.3166	1.3378	1.1652						
SON VEL./M/SEC	762.1	736.8	710.5	683.0	654.1	623.4	586.7	535.3	500.2	470.2	434.7	391.8	292.1						

MOLE FRACTIONS

AR	0.00806	0.00806	0.00806	0.00806	0.00806	0.00807	0.00807	0.00820	0.00830	0.00831	0.00826	0.00817	0.00807						
C(S)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
CH4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
CO	0.07611	0.07309	0.06942	0.06492	0.05937	0.05248	0.04325	0.02356	0.00401	0.00032	0.00001	0.00000	0.00000						
CO2	0.08601	0.08903	0.09270	0.09719	0.10274	0.10962	0.11849	0.13285	0.13434	0.12712	0.11959	0.11231	0.10435						
H2	0.03946	0.04248	0.04615	0.05064	0.05618	0.06298	0.07013	0.06003	0.02850	0.00867	0.00147	0.00010	0.00000						
H2O(L)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
H2O	0.11484	0.11182	0.10815	0.10365	0.09811	0.09126	0.08316	0.07987	0.10092	0.11956	0.13248	0.14311	0.10390						
NH3	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00004	0.00007	0.00008	0.00006	0.00003	0.00001	0.00000						
N2	0.67552	0.67552	0.67552	0.67552	0.67553	0.67556	0.67630	0.68696	0.69533	0.69629	0.69174	0.68438	0.67554						

CASE=	0	0/F=	11.1111	F/A=	0.09000	PERCENT FUEL=	8.2569	PHI=	1.3189										
P, ATM	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000						
P, PSIA	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1						
T, DEG K	2800.0	2700.0	2600.0	2500.0	2400.0	2300.0	2200.0	2100.0	2000.0	1900.0	1800.0	1700.0	1600.0						
T, DEG F	4580.3	4400.3	4220.3	4040.3	3860.3	3680.3	3500.3	3320.3	3140.3	2960.3	2780.3	2600.3	2420.3						
RHO, G/CC	3.5119-4	3.6634-4	3.8191-4	3.9814-4	4.1531-4	4.3372-4	4.5364-4	4.7535-4	4.9919-4	5.2549-4	5.5471-4	5.8735-4	6.2406-4						
M, MOL HT	26.896	27.054	27.160	27.225	27.263	27.298	27.298	27.304	27.308	27.310	27.310	27.311	27.311						
CP, CAL/(G)(K)	0.6993	0.6931	0.5067	0.4455	0.4061	0.3822	0.3678	0.3590	0.3535	0.3497	0.3469	0.3445	0.3424						
GAMMA IS1	1.1661	1.1802	1.1977	1.2157	1.2311	1.2427	1.2508	1.2564	1.2603	1.2633	1.2657	1.2679	1.2699						
SON VEL./M/SEC	1004.7	989.6	976.4	963.4	949.3	933.3	915.5	896.3	876.1	854.8	832.8	810.0	786.5						

MOLE FRACTIONS

AR	0.00794	0.00799	0.00802	0.00804	0.00805	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806	0.00806						
CO	0.09873	0.09500	0.09236	0.09059	0.08935	0.08834	0.08740	0.08640	0.08528	0.08399	0.08248	0.08071	0.07861						
CO2	0.06092	0.06558	0.06885	0.07131	0.07248	0.07362	0.07463	0.07567	0.07681	0.07811	0.07962	0.08140	0.08350						
H	0.00777	0.00530	0.00355	0.00233	0.00149	0.00092	0.00054	0.00031	0.00016	0.00008	0.00004	0.00002	0.00001						
H2	0.02740	0.02637	0.02599	0.02611	0.02658	0.02727	0.02811	0.02910	0.03024	0.03155	0.03307	0.03485	0.03695						
H2O	0.11594	0.12066	0.12368	0.12535	0.12605	0.12608	0.12567	0.12493	0.12393	0.12269	0.12121	0.11944	0.11735						
NO	0.00410	0.00258	0.00149	0.00080	0.00040	0.00018	0.00008	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000						
N2	0.66321	0.66788	0.67103	0.67299	0.67414	0.67479	0.67515	0.67534	0.67544	0.67548	0.67551	0.67552	0.67552						
O	0.00156	0.00080	0.00035	0.00014	0.00005	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						
OH	0.00947	0.00635	0.00400	0.00237	0.00133	0.00070	0.00035	0.00016	0.00007	0.00003	0.00001	0.00000	0.00000						
O2	0.00285	0.00149	0.00068	0.00027	0.00010	0.00003	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						

