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Hydrodynamics of Three-Phase Fluidized Beds

J. M. Begovich

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HYDRODYNAMICS OF THREE-PHASE FLUIDIZED BEDS

J. M. Begovich

This report was prepared as a thesis and submitted to the Faculty of the Graduate School of The University of Tennessee in partial fulfillment of the degree of Master of Science in the Department of Chemical, Metallurgical, and Polymer Engineering.

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ABSTRACT

The hydrodynamics of three-phase (gas-liquid-solid) fluidized beds has been studied in two columns with inside diameters of 7.62 and 15.2 cm respectively. The minimum gas and liquid velocities necessary to fluidize various types of solids were determined and correlated as a function of the particle size and density and the liquid viscosity; no effect of the initial bed height or column diameter was found.

Overall phase holdups, or volume fractions, determined from a homogeneous bed model were combined with similar literature data to yield correlations for the overall gas and solid phase holdups. The overall gas holdup increased as the gas velocity was increased, while the overall solid holdup was decreased by increased liquid velocity and was increased by increased particle diameter or solid/liquid density difference.

An electroconductivity technique was developed for use in the three-phase fluidized beds which allowed each of the phase holdups to be determined at any point in the column. The technique has shown the existence of a transition region as the bed goes from a three-phase to a two-phase system. The holdup profiles were fitted using the error function, and the mean and standard deviation of the solid holdup profile, along with the gas and solid holdups in the regions where they were constant, were measured for each set of run

conditions. Use of these five parameters, which were correlated with the physical parameters of the systems studied, permits each of the three phase holdup profiles to be predicted. This gives the reactor designer more information concerning phase distributions than was available previously; thus it will aid in the design of reactors where local conditions throughout the bed must be considered.

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A	cross-sectional column area, L^2
Ar	Archimedes number, $d_p{}^3 \rho_L (\rho_S - \rho_L) g / \mu_L{}^2$
a-g	constants used in data correlations
c	solids concentration, M/L^3
C_D	Drag coefficient, $(\rho_S - \rho_L) d_p / U_G{}^2 \rho_L$
D_c	column diameter, L
d_p	particle diameter, L
$\bar{d}_p$	average particle diameter, L
erf(x)	error function, $\frac{2}{\sqrt{\pi}} \int_0^x e^{-z^2} dz$
Fr	Froude number, U^2/gL
Fr_H	Froude number based on bed height, U^2/gH
g	acceleration due to gravity, L/T^2
Ga	Galileo number, $d_p{}^3 \rho^2 g / \mu^2$
h	axial column position, L
Δh	difference in manometer readings, pressure drop, L
H	expanded bed height, L
H_L	dynamic liquid height, L
$H_{L,o}$	settled liquid height, L
I	inflection point in local holdup versus height curve, L
k	fluid consistency index
K	ratio of wake volume to bubble volume,
M	mass, M
m	mamometer reading, L
ΔP	pressure drop across bed, M/LT^2

P	curve-fitting parameter, defined in Eqs. (32)-(35)
Re	Reynolds number,
T	pressure tap height above bottom of column, L
U	superficial velocity, L/T
$\bar{U}$	actual velocity, L/T
U_L	terminal free-fall particle velocity, L/T
V_S	slip velocity, L/T
We	Weber number, $U\mu/\sigma_{LV}$
W_{SLV}	work of adhesion, M/T^2

Greek Letters

γ	conductivity in the bed
γ_o	conductivity in liquid alone
ε	bed porosity
ε_i	phase holdup (volume fraction)
$\bar{\varepsilon}$	average holdup
Θ	liquid contact angle on a solid surface, rad
μ	phase viscosity, M/LT
ρ	phase density, M/L^3
σ	standard deviation, L
σ_{LV}	interfacial tension, M/T^2
$\Phi(x)$	probability integral, $\frac{1}{\sqrt{2\pi}} \int_0^x e^{-w^2/2} dw$
Ψ	contraction/expansion characteristics, defined in Eq. (17), L/T

<u>Subscripts</u>

Bed	across bed
C	conductivity method
G	gas phase
L	liquid phase
mf	minimum fluidization
ΔP	pressure gradient method
S	solid phase
W	bubble wake phase

<u>Superscripts</u>

'''	three-phase
''	two-phase

<u>Dimension</u>

L	length, cm
M	mass, g
T	time, sec

CHAPTER 1

INTRODUCTION AND SIGNIFICANCE

A three-phase fluidized bed consists of solid phase particles fluidized by a gas and liquid flow. Although many schemes for contacting the three phases are possible [Ostergaard, 1971], a common approach is to fluidize the solid phase by the upward cocurrent flow of gas and liquid. The liquid forms the continuous phase, while the gas and solids are discontinuous phases. Applications for this type of system include the hydrogenation of liquid petroleum fractions [Pichler et al., 1957], the hydrogenation of unsaturated fats, liquid-phase methanation [Blum and Toman, 1977], coal conversion processes, and some biological reactors [Scott et al., 1976].

Of particular interest is the coal liquefaction process known as the "H-Coal process" [Hellwig et al., 1968], which involves cocurrent contact of hydrogen with a slurry of dried and pulverized coal in a coal-derived liquid in a reactor containing fluidized catalyst particles. Since the use and importance of three-phase fluidized beds are expected to increase with development of coal conversion processes, a program was initiated in the Advanced Technology Section (formerly the Experimental Engineering Section) of the Chemical Technology Division of Oak Ridge National Laboratory to study the operating characteristics of these contactors. Although some mass transfer experiments had been conducted in three-phase fluidized beds

[Saad et al., 1975; Burck et al., 1975], it became apparent that the hydrodynamics of these reactors was not understood well enough to permit meaningful interpretation of the mass transfer data. In addition, accurate design of three-phase fluidized bed reactors is complicated by such factors as (a) knowledge of the minimum fluid velocities required to achieve fluidization, and (b) axial variations in reactor properties, particularly distribution of the solid phase. No published data or equations are available for predicting reactor performance under high fluid flow rates where axial variations are important, and only a limited amount of data exists for predicting minimum fluidization velocities in three-phase fluidized beds. Once these hydrodynamic characteristics are known, mass transfer experiments can then be intelligently planned and the results accurately interpreted.

CHAPTER 2

THEORY

Measurement of Holdups and Minimum Fluidization Velocities

The holdup of one phase in a multiphase system is defined as the fraction of the system volume occupied by that phase. Thus, a three-phase fluidized bed has three such volume fractions related by the following equation:

$$\varepsilon_L + \varepsilon_G + \varepsilon_S = 1 , \qquad (1)$$

where

ε = holdup,

and subscripts

G = gas phase,

L = liquid phase,

S = solid phase.

If wall shear effects are neglected, the volume fractions are also related to the pressure drop over the bed [Ostergaard, 1971]:

$$\Delta P = gH(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) , \qquad (2)$$

where

ΔP = pressure drop over the bed,

g = acceleration due to gravity,

H = expanded bed height,

ρ = density.

The solids volume fraction can be calculated from the expanded bed height using Eq.(3):

$$\varepsilon_S = M_S/\rho_S AH \quad , \qquad (3)$$

where

M_S = total mass of solids,

A = cross-sectional area of the bed.

Equations (1)-(3) are sufficient to solve for the three holdups, provided the pressure drop and expanded bed height measurements are accurate. Gas holdup can also be determined by simultaneously stopping all flows and measuring the settled liquid height, $H_{L,o}$. The gas volume fraction is then calculated since

$$\varepsilon_G = (H_L - H_{L,o})/H_L \quad , \qquad (4)$$

where

H_L = dynamic height of the liquid in the column.

The gas and liquid holdups could be determined from measurements of the mean residence times of the fluid phases using tracer techniques. These techniques measure the actual linear velocities in the bed. The volume fractions are then easily calculated:

$$\varepsilon_G = U_G/\overline{U}_G \quad , \qquad (5)$$

$$\varepsilon_L = U_L/\overline{U}_L \quad , \qquad (6)$$

where

U = superficial velocity based on an empty column,

$\bar{U}$ = actual velocity in the bed.

The minimum fluid velocities required to achieve fluidization are determined by measuring the pressure drop across the bed. At the minimum fluidization velocities, the upward inertial and drag forces exerted on the solid particles by the fluids balance the buoyant weight of the solids. There is no further change in pressure drop across the bed at velocities above minimum fluidization until entrainment occurs.

<u>Discussion of Holdup Measurement Techniques</u>

Use of Eqs. (1)-(3) to determine the three phase holdups requires an accurate measurement of the expanded bed height and assumes that each phase volume fraction is constant over this bed height. This is, in general, true for heavy or large solid particles and moderate flow rates. Virtually all the data from the literature have been reported for such systems. While some processes are expected to operate with distinct bed heights, it is quite likely that the flow rates and solid particle densities in many processes will be in operating regions where the bed heights are not clearly defined and the volume fractions are not uniform over the entire bed.

An example is shown in Fig. 1, where -8+10 mesh alumina was fluidized by water and air in a 7.62-cm-ID plexiglass column. The water and gas velocities were 2.5

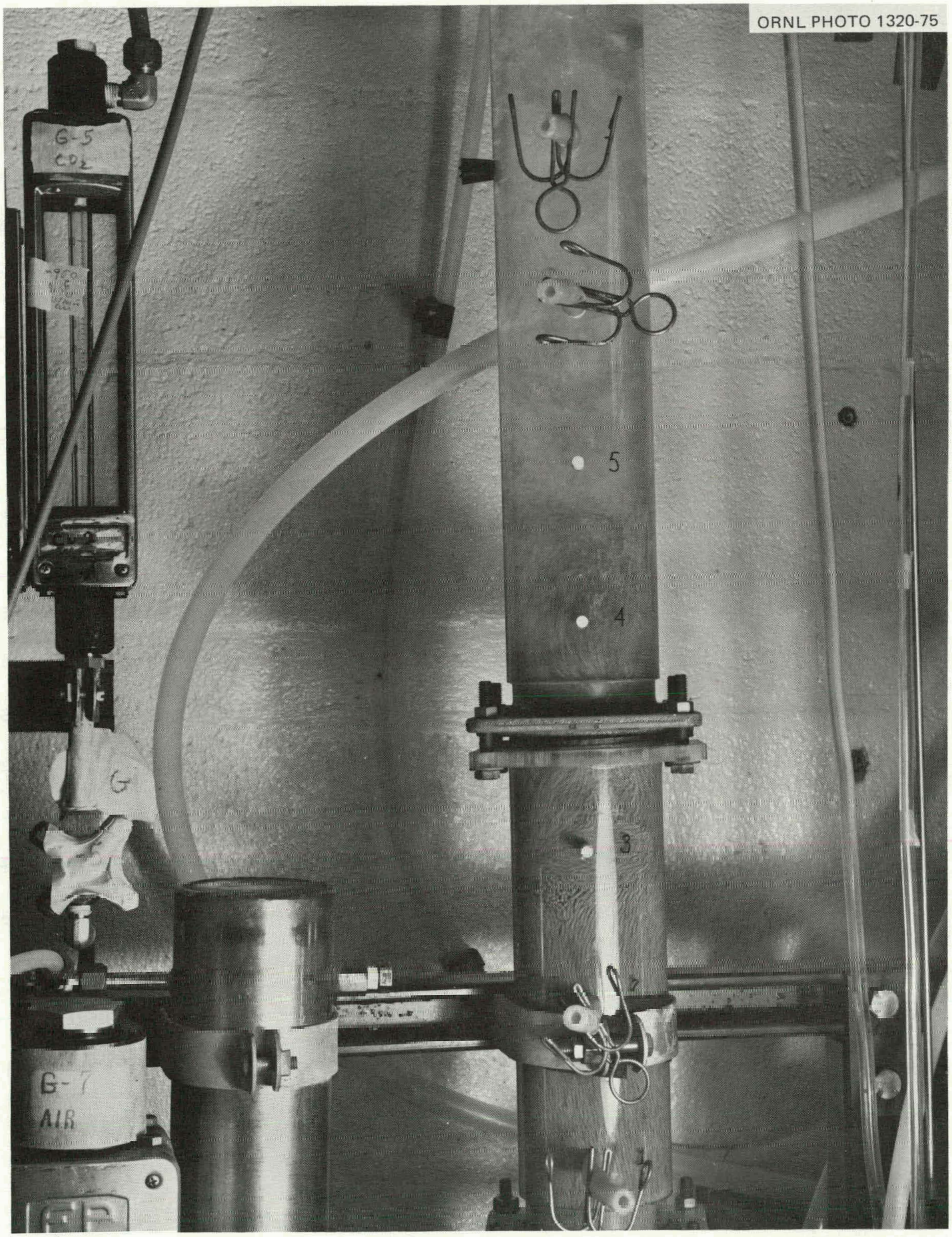

Figure 1. Fluidization of -8+12 mesh molecular sieves with air and water.

and 3.8 cm/sec, respectively. Alumina, which has a density of approximately 1.8 g/cm^3, is the most likely catalyst support for a coal liquefaction process. As can be seen in the figure, the fluidized bed does not occupy the entire column. The concentration of solids appears to be uniform in the lower section of the column, while a more dilute region exists in the middle. Above sample port 5, the column is essentially a bubble column with no solids present. The bed height is certainly not distinct; therefore, Eq. (3) could not be used.

A bed height could be obtained from the measured pressure gradient as suggested by Kim et al. [1972] and Bhatia and Epstein [1974]. The bed height obtained in this manner, however, is that height at which the pressure gradients in the two- and three-phase regions intersect, as shown in Fig. 2, and is based on a uniform bed. As shown in Fig. 1, this is an unrealistic assumption at high fluid flow rates.

By simultaneously shutting off all flows, one could use Eq. (4) to obtain an average gas volume fraction over the entire column. The gas holdup in the fluidized-bed region could be separated from that in the bubble column region by using two different bed heights. This results in two simultaneous equations which can be solved for the holdups in the fluidized bed and in the bubble column. Unfortunately, this method also requires distinct bed heights.

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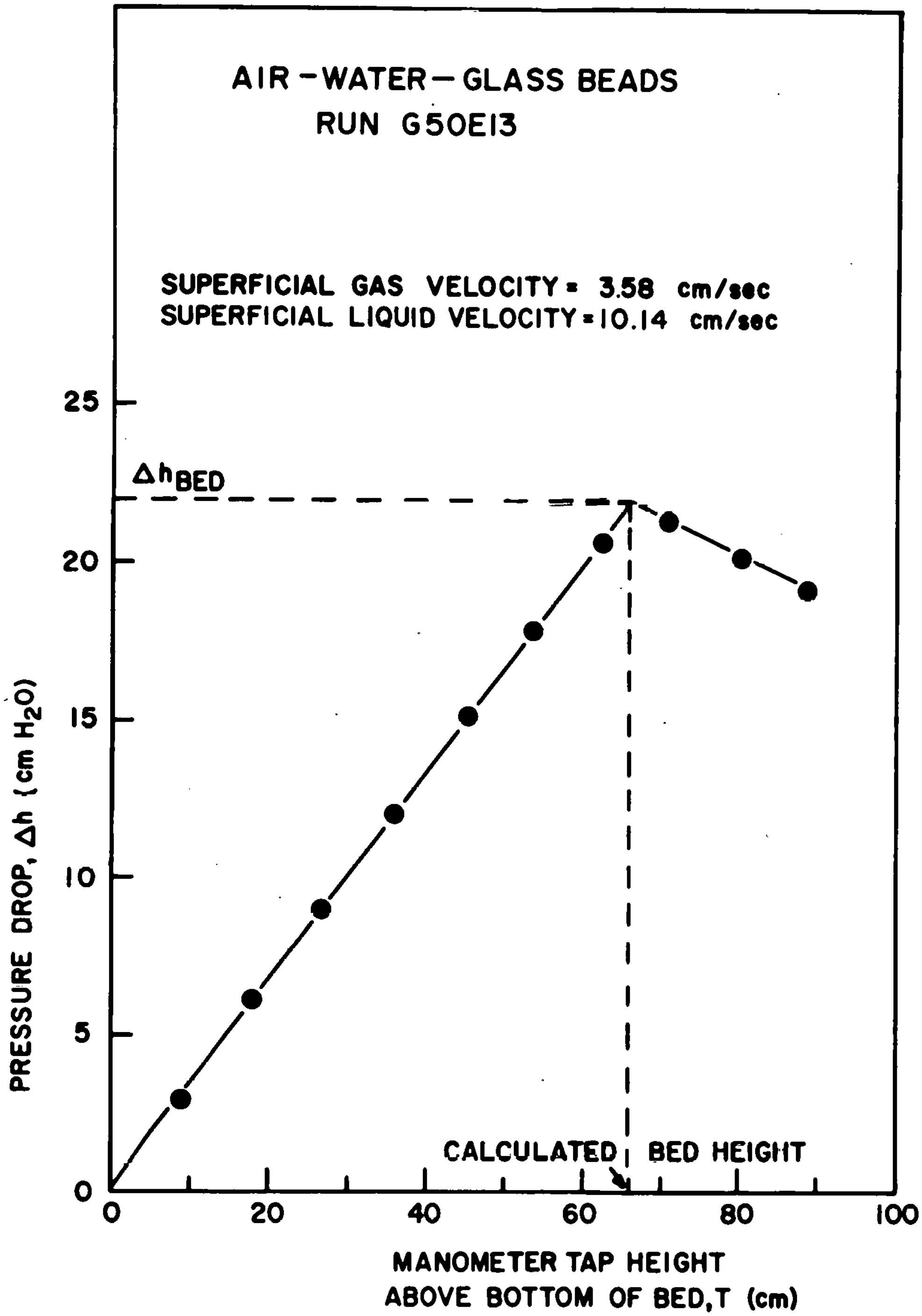

Figure 2. Use of the pressure drop profile over the column to obtain the bed height and bed pressure drop.

Another possible method for obtaining the solid holdup as a function of height (and thus the remaining holdups using Eqs. (1) and (2)) is a photographic technique [Watson, 1975]. Pictures taken of a bed with a known ratio of particles distinguishable from the remainder of the solid particles in the bed can be statistically evaluated for the incremental solids volume fraction.

Use of a tracer technique and Eqs. (5) and (6) yields an average value for the liquid and gas holdups over the measurement interval. Consequently, the holdups could be obtained at various bed heights by selecting sufficiently small measurement intervals. However, since the fluids flow cocurrently, the measuring devices would need to have shorter (faster) response times than those presently available.

An electrical conductivity method for obtaining the liquid holdup in two-phase packed beds has been described by Achwal and Stepanek [1975]. Although these investigators applied the method only to a packed column with no liquid flow, it could also be utilized for incremental sections of a three-phase fluidized bed. Their method involves measuring the conductivity of a liquid between two electrodes. The conductivity of a liquid system with a fixed ion concentration at constant conditions is proportional to the cross-sectional area of the conducting liquid and inversely proportional to the length of the path between electrodes. Thus, if the tortuosity factor remains approximately constant, the conductivity should vary in proportion to the liquid volume fraction between the electrodes:

$$\varepsilon_L = \gamma/\gamma_o \quad , \tag{7}$$

where

γ = conductivity in the bed,

γ_o = conductivity in the liquid alone.

Similar procedures based on the same principle have been reported by several investigators. Turner [1976] measured the conductivity of liquid fluidized beds of both conducting and nonconducting solids. He found that his data for nonconducting solids followed the Maxwell [1881] equation, simplified for the case of nonconducting particles, as follows:

$$\gamma/\gamma_o = (1 - \varepsilon_S)/(1 + \varepsilon_S/2) \quad . \tag{8}$$

For two-phase fluidization, Eq. (8) can be presented in terms of liquid holdup as:

$$\varepsilon_L = (3\gamma/\gamma_o)/(2 + \gamma/\gamma_o) \quad . \tag{9}$$

Other investigators have proposed equations which yield results similar to those given by the Maxwell equation; these have been reviewed by Meredith and Tobias [1962].

Buyevich [1974] and Francl and Kingery [1954] measured the thermal conductivity of granular beds and, through the mathematical analogy between thermal and electrical conductivity, arrived at Eq. (7). Our own measurements on two- and three-phase fluidized beds, as will be shown later, also indicate that Eq. (7) was more applicable.

Once the liquid holdup is determined as a function of height in the bed, Eq. (1) as well as a modification of Eq. (2),

$$dP/dh = g(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) \quad , \tag{10}$$

where

h = axial column position,

can be used to obtain the solid and gas holdups as functions of height. This method does not require a distinct bed height and hence allows the study of systems with high fluid flow rates, which are of particular commercial interest.

CHAPTER 3

LITERATURE SURVEY

Three-phase fluidization has only recently become the subject of systematic research. Thus, the relevant information available in the literature is scattered and incomplete. This review will consider each hydrodynamic variable separately and will include the overall holdup of each phase and minimum fluidization velocities.

Gas Holdup

Adlington and Thompson [1965] reported results from experiments on two systems. In the first system, alumina particles with diameters ranging from 0.3 to 2.7 mm were fluidized by white spirit in a 7.62-cm-diam column. The bed height varied from 0 to 610 cm. In the second system, 0.3-mm-diam sand particles were fluidized by water in a 25.4-cm-diam column with bed heights ranging from 0 to 244 cm. Qualitatively, their results showed that the gas holdup (a) increased with height up the column, (b) increased markedly with gas rate, (c) was independent of liquid flow rate over the range investigated, and (d) was independent of the settled bed height. They also found that the presence of solids had little influence on gas holdup below superficial gas velocities of 1.5 cm/sec. At higher gas velocities, the presence of solids caused a decrease in gas holdup as compared to a solids-free system, particularly in the denser beds prevailing at lower liquid flow rates.

Viswanathan et al. [1964] measured gas holdup in a 5.08-cm-diam column using air, water, and both glass beads and quartz particles. The glass beads were 4 mm in diameter, while the quartz particles had diameters of either 0.928 or 0.649 mm. The holdup was determined by simultaneous closing of two valves within the fluidized bed. In comparing the three-phase fluidized bed with a bubble column, they found that the presence of the glass beads increased the gas holdup, whereas the presence of the quartz particles decreased the gas holdup.

Sherrard [1966] estimated the gas holdup by measurements of gamma-ray transmission immediately above the bed surface in a column that was 6.35 cm square and 183 cm long. Water and air were used as the fluidizing media. Sherrard's results showed that gas holdup decreased with increasing liquid flow rate in beds of 6.35-mm glass spheres, 6.35-mm acrylic spheres, and 12-14 mesh lead shot, whereas it was independent of liquid flow rate in beds of 12-14 mesh and 36-44 mesh glass beads.

Schugerl [1967] measured gas holdup in an air-water fluidized bed of 0.25-mm solid particles in a 13.5-cm-diam column by simultaneously stopping all flows. Although the amount of solids used was low (2 kg of solids in a 46-liter column), it was observed that the gas holdup was smaller in the three-phase fluidized bed than in a cocurrent bubble column. Also, the difference in gas holdup between the two systems increased with air flow rate and decreased with water flow rate.

Vail et al. [1970] studied an air-water-solids system in a 14.6-cm-diam column using a range of solid concentrations and two gas distributors. Gas holdup was determined by simultaneously stopping all flows and using Eq. (4). Three solids were used: (a) 0.73-mm-diam glass beads, (b) 0.77-mm-diam alumino-silicate particles, and (c) 0.740-mm alumino-cobalt-molybdenum particles. The gas distributors were perforated plates with free cross sections of 1.03 and 0.26% of the vessel's free cross section. These investigators found that the gas holdup was directly proportional to the gas/liquid velocity ratio, inversely proportional to the solids concentration, and independent of the free cross section of the distributors used.

Efremov and Vakhrushev [1970] studied air, water, and glass spheres in 10-cm-diam fluidized beds. Five sizes of glass spheres, with diameters ranging from 0.32 to 2.15 mm, were used. The amount of solids used varied from 1 to 9 kg. The gas holdup was determined by using the difference of the change in manometer readings of the entire column and the bubble column region divided by the bed height. They found that the gas holdup increased with gas flow rate and decreased with increasing solids concentration.

Ostergaard and Michelsen [1968] measured gas holdup for air-water fluidized beds of 0.25- ,1- , and 6-mm glass spheres contained in a 21.6-cm-diam column using a tracer method over the entire bed. They found that gas holdup increased with increasing gas velocity for all solids used. For beds of 6-mm spheres and a bubble column, gas holdup decreased with increasing liquid velocity. However, for beds of smaller particles, gas holdup increased with increasing liquid velocity. The gas holdup was also found to be markedly lower for beds of small particles (0.25 and 1 mm) than for solids-free systems; the reverse was true for beds of 6-mm particles. However, as the liquid velocity was increased, all three solids systems tended to approximate to the values for gas holdup in a bubble column.

Bhatia and Epstein [1974] utilized two methods in measuring gas holdup for air-water fluidized beds of 1-mm glass spheres and 2-mm lead shot in a 5.08-cm-diam column. These were: (a) the simultaneous shutoff of all flows, and (b) measurement of the pressure gradient. Although their bed heights were not distinct, an experimental bed height was determined by finding the intersection of the pressure gradient over the three-phase region with that over the bubble column region. Bed heights obtained in this manner represent the height of the three-phase region for uniform solids distribution, whereas the visual upper limit of solids may be considerably higher. Gas holdup in beds of 1-mm glass spheres increased with increasing gas flow rate but was unaffected by liquid flow rate. Gas holdup was slightly less in the three-phase system than in a bubble column. Using beds of 2-mm lead shot, these investigators found that the gas holdup decreased with increasing liquid flow rate and was proportional to the gas flow rate.

Kim et al. [1972] studied gas holdup in a "two-dimensional" bed of 6-mm glass spheres fluidized by air and water. The column was 244 cm high by 66 cm wide by 2.54 cm thick. They found that the presence of the solids decreased the gas holdup as compared with a bubble column. Gas holdup again increased with increasing gas flow rate and decreased slightly with increasing liquid flow rate.

Bloxom et al. [1975] studied gas holdup in a 7.62-cm-diam column using air, water-glycerol solutions, and 4.6-mm glass spheres. They found that the gas holdup was unaffected by the viscosity of the liquid in the range 1 to 11.5 cP and was only slightly influenced by the liquid velocity. Their data fit the following correlation:

$$\bar{\varepsilon}_G = 0.150(U_G{}^5 \rho_L / U_L \sigma_{LV} g)^{0.100} \quad , \tag{11}$$

where

$\bar{\varepsilon}$ = overall phase holdup,

σ_{LV} = liquid-gas interfacial tension.

Solid Holdup and Bed Porosity

Bed porosity is defined as the volume fraction of the bed not occupied by the solid phase. Thus, bed porosity, ε, is the sum of the gas and liquid volume fractions. Using Eq. (1):

$$\varepsilon = \varepsilon_G + \varepsilon_L = 1 - \varepsilon_S \quad . \tag{12}$$

An examination of Eq. (12) shows that a discussion of bed porosity is actually a discussion of solid holdup.

When a bed of particles is fluidized by a liquid, the porosity of the bed is proportional to the liquid flow rate and has been empirically correlated by Richardson and Zaki [1954]:

$$\varepsilon = (U_L/U_t)^{1/n} \quad , \tag{13}$$

where

U_t = terminal free fall velocity of the particle,

n = a function of the particle Reynolds number at U_t.

However, if the liquid flow is maintained at a constant level, the introduction of gas can sometimes decrease the bed porosity. This unique phenomenon has been the subject of considerable study.

Stewart and Davidson [1964] have advanced the following explanation based on experiments with 0.046-cm-diam glass, iron, and lead beads in a 0.635-cm x 6.35-cm two-dimensional column. As an air bubble rises through the water-fluidized bed, it is followed by water which is almost particle-free. They described this water as a wake and assumed that it traveled at a velocity similar to the bubble velocity, which may be much greater than the average liquid velocity. For the same superficial liquid velocity, the actual liquid velocity in the liquid fluidized phase is therefore reduced and the bed porosity decreases in the manner indicated by Eq. (13).

Efremov and Vakhrushev [1970], using the system described earlier, found that the bed porosity decreased with increasing gas and decreasing liquid flow rates in beds of 0.61-mm-diam glass spheres. The effect of liquid flow rates was observed to be the same, in beds of 2.15-mm glass spheres; however gas flow rates had essentially no effect on the bed porosity. These results were found to be in good agreement with the data of Ostergaard and Thiesen [1966].

Rigby and Capes [1970] reported similar results using three sizes of glass beads (0.29, 0.47, and 0.775 mm diam) in a 10-cm-diam column. They defined another volume fraction, ε_W , as the fractional bed volume occupied by bubble wakes and studied the ratio $\varepsilon_W/\varepsilon_G$. This ratio was directly proportional to the particle diameter and the liquid flow rate but inversely proportional to the gas bubble diameter and gas flow rate. From a photographic study of the 0.775-mm particles in a two-dimensional column (15 x 45 x 0.7 cm), they also concluded that the contraction of a liquid fluidized bed upon injection of a gas is caused by the presence of wakes and that these wakes consist of a stable portion carried with the bubbles as well as vortices shed by the bubbles.

Ostergaard and Michelsen [1968], using the system described previously, found bed porosity to be strongly affected by particle size. Their results showed that the porosity of a bed of 6-mm glass spheres was proportional to both liquid and gas flow rates for a superficial gas velocity less than 15 cm/sec. At higher gas velocities, gas slugs formed which increased the bubble rise velocity and decreased the bed porosity. In beds of 3-mm particles, flow changed from a bubble breakup regime for high liquid flow rates and low gas flow rates to a bubble-coalescence regime for high gas flow rates. They observed that, as the liquid velocity was reduced, the transition from the bubble breakup regime to the coalescence regime took place at lower gas velocities; finally, at very low liquid velocities, coalescence occurred at all gas velocities. During operation in the bubble breakup regime, the bed porosity increased with increasing gas velocity; however, during operation in the coalescence regime, the bed porosity decreased with increasing gas velocity. Thus, in beds of 1-mm particles, where coalescence occurred even at low gas flow rates, the bed porosity decreased with increasing gas velocity.

Dakshinamurty et al. [1971] studied the effects of particle size, d_p, and density, liquid-gas interfacial tension, and fluid flow rates on bed porosity in a 5.6-cm-diam column. They observed a reduction in bed porosity upon injection of air into liquid fluidized beds of 0.13-cm rock wool shot and 0.33-cm glass beads in water and beds of 0.106- and 0.22-cm sand particles in water. These systems correspond to operation in the bubble coalescence regime. For systems operating in the bubble breakup regime (0.49-cm and 0.68-cm glass beads in both water and kerosene, 0.3-cm iron shot in both water and kerosene, and the above rock wool shot and glass beads in kerosene), the bed porosity increased with increasing gas flow rate. They correlated their results as follows:

for $Re_t > 500$,

$$\bar{\varepsilon} = 2.65(U_L/U_t)^{0.6}\ (\mu_L U_G/\sigma_{LV})^{0.08}\ , \qquad (14)$$

for $Re_t < 500$,

$$\bar{\varepsilon} = 2.12(U_L/U_t)^{0.41}\ (\mu_L U_G/\sigma_{LV})^{0.08}\ , \qquad (15)$$

where

Re_t = Reynolds number = $\rho_L U_t d_p/\mu_L$,

μ_L = liquid viscosity.

In a later publication [Dakshinamurty et al., 1972], these investigators changed the coefficient in Eq. (14) from 2.65 to 2.85. They claimed that the porosity can be estimated with an average deviation between 3.7 and 5.6% by using Eqs. (14) and (15).

Bruce and Revel-Chion [1974] tested Eqs. (14) and (15) for 2- , 4- , 6- , and 8-mm-diam glass spheres in a 4.63-cm-diam column. They concluded that the correlations of Dakshinamurty were limited to gas flow rates of less than 7.5 cm/sec. In addition, they observed that contraction of the bed upon injection of a gas occurred only when the 2-mm-diam particles were used and when the liquid velocity was less than 14 cm/sec.

Bhatia et al. [1972], in a comment upon the paper by Dakshinamurty et al. [1971], reported bed porosity experiments in a 5.08-cm-diam column using 1-mm glass beads and 1-mm Teflon-coated glass beads. At each liquid velocity used, the beds of clean glass beads contracted with the injection of gas, whereas the beds of Teflon-coated beads expanded. They explain these results in terms of the "work of adhesion," W_{SLV}:

$$W_{SLV} = \sigma_{LV} (1 + \cos \Theta) \quad , \tag{16}$$

where

W_{SLV} = the energy that must be expended per unit interfacial area to separate a solid phase and a liquid phase in the presence of a gas,

Θ = contact angle of the liquid on the solid surface in the presence of the gas.

Thus, the increase of Θ from 0 for glass to almost π for Teflon particles brings about a continuous decrease in $\cos\Theta$ and hence W_{SLV}. Therefore, bed expansion, instead of an expected contraction, may occur upon introduction of gas flow.

Using their previously described system, Kim et al. [1972] concluded that a critical particle size existed which determined the type of three-phase fluidization--either bubble coalescence or bubble breakup. For particles having a density similar to glass (2.5 g/cm³), this critical size was about 2.5 mm. In a later paper [Kim et al., 1975], they report results using the same equipment with various solutions to test the effects of liquid viscosity and surface tension. From an analysis of literature and their data, they found that solids having a minimum fluidizing velocity in the liquid phase alone of less than 1.28 cm/sec initially contracted upon injection of gas into the bed but expanded otherwise. A notable exception to this was the results of Bhatia et al. [1972]. Two correlations are presented for the bed porosity, depending on whether the bed initially expands or contracts upon introduction of the gas phase. The correlations, in terms of the Weber and Froude numbers, have standard errors of estimate equal to 0.040.

Using continuity considerations, Epstein [1976] showed that the inital contraction or expansion of a liquid fluidized bed upon introduction of gas could be predicted by the following:

$$\Psi = (\frac{n}{n-1} + K)\overline{U}_L - [(1 + K)U_L + \frac{Kv_S}{n-1}] \quad , \qquad (17)$$

where

Ψ = criteria for expansion or contraction of bed upon injection of gas,

K = ratio of wake volume to bubble volume,

v_S = relative slip velocity between gas and liquid.

A positive value of ψ signifies a bed expansion, while a negative value denotes contraction. An estimate of K for zero gas holdup is obtained from:

$$K = 3.5(1 - \varepsilon_S)^3 \quad . \qquad (18)$$

For bubbly flow, the slip velocity is the rising bubble velocity, as determined experimentally, while the following is used in slug flow:

$$v_S = 0.2\ U_L + 0.35\ \sqrt{gD_c}\ , \tag{19}$$

where

D_c = column diameter.

Epstein applied Eq. (17) to the data of Bhatia and Epstein [1974] and correctly matched the experimental results in all of the 31 runs conducted.

Razumov et al. [1973] measured the solid holdup in a 30-cm-diam column using a capacitance probe. For these measurements a wide size distribution of quartz sand with an equivalent mean diameter of 0.82 mm was fluidized by air and water. Their data yielded the following dimensional correlation:

$$\bar{\varepsilon}_S = 0.578 - 0.03198\ U_L - 0.00538\ U_G\ . \tag{20}$$

Saad et al. [1975] fluidized 6.2-mm alumina beads by air and water in a 7.62-cm-diam column and found that the bed porosity increased for both increasing liquid and gas flow rates. However, Burck et al. [1975] used the same system and found the bed porosity to be independent of gas flow rate. In addition, results obtained by Burck using 6.3-mm plexiglass and 1.9-mm alumina beads led him to conclude that the bed porosity was inversely proportional to the particle density.

Bloxom et al. [1975] combined their data obtained for bed porosity on the system previously described with data obtained by Khosrowshahi et al. [1975], who used the same system with 1.9-mm and 6.2-mm alumina beads, and found the following correlation:

$$\bar{\varepsilon} = 1 - \bar{\varepsilon}_S = 1.027\ Fr_L^{0.094}\ Ga_L^{-0.026} \quad , \tag{21}$$

where

Fr = Froude number = U^2/gd_p ,

Ga = Galileo number = $d_p^{\ 3}\rho_L g/\mu_L^{\ 2}$.

Bloxom also abstracted more than 1200 points from the literature and, after combining all the data, obtained the following correlation:

$$\bar{\varepsilon} = 1 - \bar{\varepsilon}_S = 0.427\ Re_L^{0.275}\ Ga_L^{-0.171} \quad . \tag{22}$$

Liquid Holdup

Razumov et al. [1973] studied liquid holdup in a 9-cm-diam column using sand and slag beads for the solid phase, with the average diameter ranging from 0.57 to 1.275 mm. The method used was simultaneous stoppage of all flows. This required that the solid phase be evenly and completely distributed over the entire column prior to flow stoppage. Their results yielded the following correlation:

$$\bar{\varepsilon}_L = 0.422 + 0.0180\ U_L/\bar{d}_p^{\ 0.562} - 0.0182\ U_G \quad , \tag{23}$$

where

$\bar{d}_p$ = average particle diameter, cm,

$1 \leq U_L \leq 4$ cm/sec,

$1 \leq U_G \leq 5$ cm/sec.

The difference between the experimental data and the values calculated by Eq. (23) did not exceed 10%.

Mukherjee et al. [1974] measured liquid holdup in a 5.2-cm-diam column using the method based on determination of the pressure drop over the bed. Particles of four sizes, 0.287, 1.4, 2.8, and 4.12 mm with densities of 2.92, 2.86, 2.92, and 2.78 g/cm³ respectively, were used as the solid phase. Liquid holdup was found to increase with increasing liquid velocity and decreasing gas velocity. At the same time, liquid holdup decreased with an increase in particle size until it reached a critical value (2.8 mm) beyond which it increased with further increase in particle size.

Michelsen and Ostergaard [1970] measured liquid holdup in beds of 1- , 3- , and 6-mm-diam glass spheres in a 15-cm-diam column using a radioactive tracer. They found that the liquid holdup increased with increased liquid flow rate, decreased gas flow rate, and decreased particle size. The same investigators [Ostergaard and Michelsen, 1968] found similar results in a 21.6-cm-diam column for beds of 0.25- , 1- , and 6-mm glass spheres.

Kim et al. [1972] studied liquid holdup in their previously described system using the pressure drop over the bed and the bed height to calculate the liquid holdup. The solid phase was either 6-mm glass beads or 2.6-mm irregular gravel. They observed that the liquid holdup increased with increasing gas and liquid velocity, and that it was greater in the bed of gravel than in the bed of glass beads. Under the same experimental conditions, they found that the presence of solids reduced the liquid holdup, as compared with a bubble column. In a related study [Kim et al., 1975], the investigators found that the liquid holdup increased with viscosity, the effect being more marked as the particle size decreased. The liquid holdup decreased with increasing surface tension (40 to 73 dynes/cm), in beds of 1-mm glass beads, but was proportional to the surface tension in beds of 2.6-mm gravel. The following dimensionless correlation was obtained:

$$\bar{\varepsilon}_L = 1.504\ Fr_L^{0.234}\ Fr_G^{-0.086}\ Re_L^{-0.082}\ We^{0.092} \quad , \qquad (24)$$

where

Re = Reynolds number = $U^{2-n} d_p^{\,n} \rho / V$,

We = Weber number = $U_G V / \sigma_{LV}$,

V = generalized viscosity constant = $k 8^{n-1}$,

k = fluid consistency index,

standard error of estimate = 0.039.

In a comparison of Eqs. (24) and (23), Kim found that the correlation of Razumov slightly underestimates the liquid holdup. However, it should be noted that Eq. (23) was derived from experiments in which the only liquid phase used was water.

Bloxom et al. [1975], using the system described previously, found liquid holdup to be directly proportional to the liquid viscosity and velocity. They obtained the following dimensional correlation:

$$\bar{\varepsilon}_L = 0.451\, U_L^{0.269}\, U_G^{-0.146}\, (\rho_S - \rho_L)^{-1.072} \quad , \qquad (25)$$

where the velocities are in cm/sec and the densities are in g/cm³. They were unsuccessful in finding a correlation which combined their own data with data from the literature.

<u>Minimum Fluidization Velocities</u>

Wen and Yu [1966] combined experimental and literature data on two-phase fluidized beds and arrived at the following correlation, which is applicable to both liquid and gas fluidized beds:

$$Re_{mf} = \sqrt{(33.7)^2 + 0.0408\, Ar} - 33.7 \quad , \qquad (26)$$

where

$$Re_{mf} = \rho_L U_{mf} d_p / \mu_L \quad ,$$
$$Ar = d_p^3 \rho_L (\rho_S - \rho_L) g / \mu_L^2 \quad .$$

Burck et al. [1975], in their system described previously, presented the minimum fluidization velocities for three-phase fluidized beds as a function of packing and initial bed height. These results are shown in Fig. 3. It can be seen that $U_{L,mf}$ decreased with increasing gas flow rate, particle size, and particle density. The differences due to initial bed height were explained as end effects

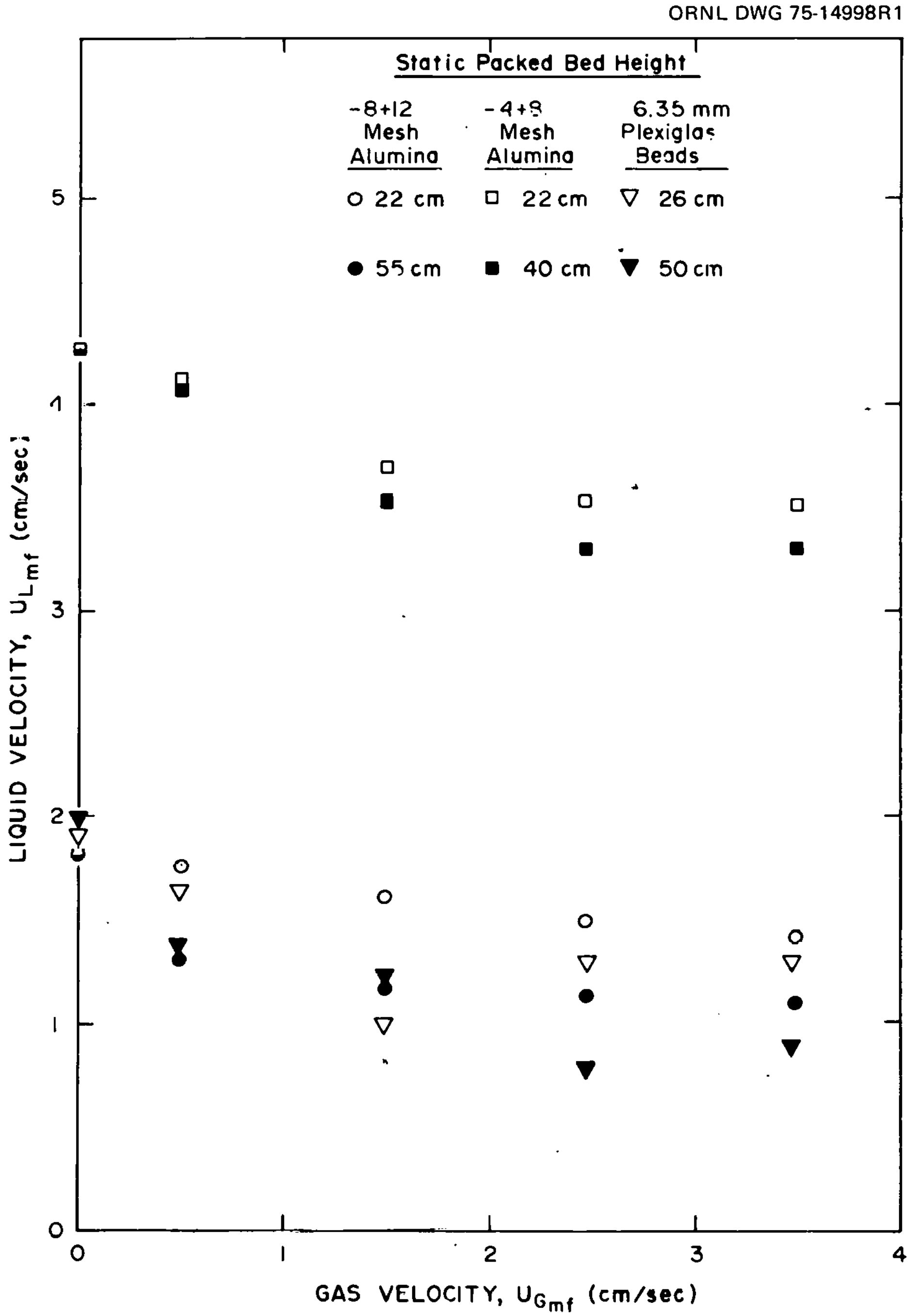

Figure 3. Incipient fluidization velocities as a function of packing and initial bed height.

since the gas and liquid distributors were separated by a distance of 3.8 cm.

Using 4.6-mm glass spheres and aqueous glycerol solutions in a 7.62-cm-diam column, Bloxom et al. [1975], found that, for a given gas velocity, the minimum liquid fluidization velocity decreased as the liquid viscosity increased. Bloxom et al. presented their results based on a computer analysis of their pressure drop-versus-liquid velocity data. However, Begovich [1978] compared the computer analysis with analysis by hand and found that the minimum fluidization velocities obtained by the computer method were too high. The corrected results are shown in Fig. 4. The conclusions reported by Bloxom et al. have not been altered. For a given gas velocity, the minimum liquid fluidization velocity decreased as the liquid viscosity increased; however, the influence of the liquid viscosity appeared to decrease for the higher viscosities. Also, the gas velocity did not appreciably affect the minimum liquid fluidization velocity for the more viscous aqueous glycerol solutions studied.

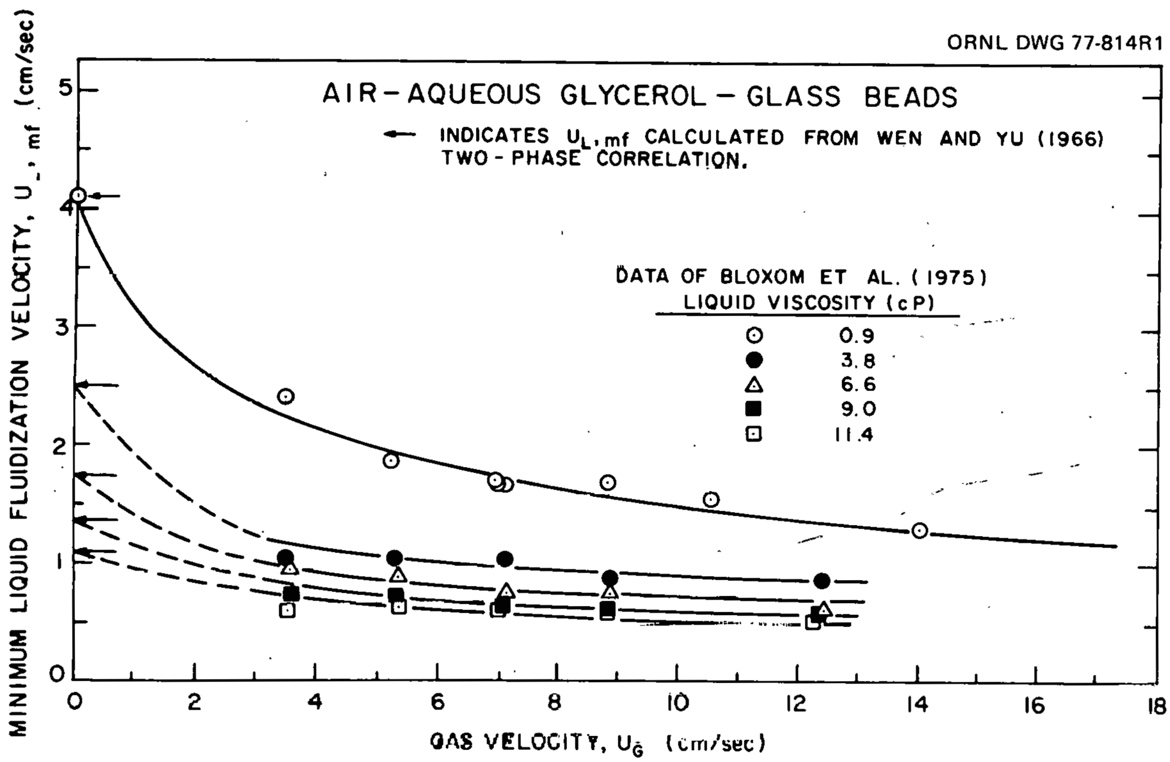

Figure 4. Effect of liquid viscosity on the minimum fluidization velocities.

CHAPTER 4

EXPERIMENTAL

Experimental Apparatus

The experimental apparatus shown in Fig. 5 was located in Laboratory 38 of Building 4505 at the Oak Ridge National Laboratory. Various solids were fluidized by air and liquid in either a 7.62- or a 15.2-cm-ID plexiglass column.

Liquid was pumped from one or both 55-gal feed tanks by centrifugal pumps through an appropriate rotameter to the bottom of one of the two columns which were connected in parallel. Process air was fed through the desired rotameter to the side of the fluid distributor through two 6.35-mm-diam channels forming a cross and then passed upward into the column through seventeen 1.59-mm-diam holes. Approximately thirty-six 1.59-mm-diam holes were drilled entirely through the distributor, as shown in Fig. 6, in each quadrant (between cross arms) to allow liquid to enter the bed. Thus, the gas and liquid phases were intimately mixed at the top of this fluid distributor, which also acted as the packing support. The air was vented to the atmosphere, while the water exited through a glass tee and returned to the feed tanks. A wire-mesh screen across the glass tee prevented solids from flowing out of the column. The physical characteristics of the solids and the range of experimental conditions used in this study are detailed in Tables 1 and 2. A series of liquid manometers located at

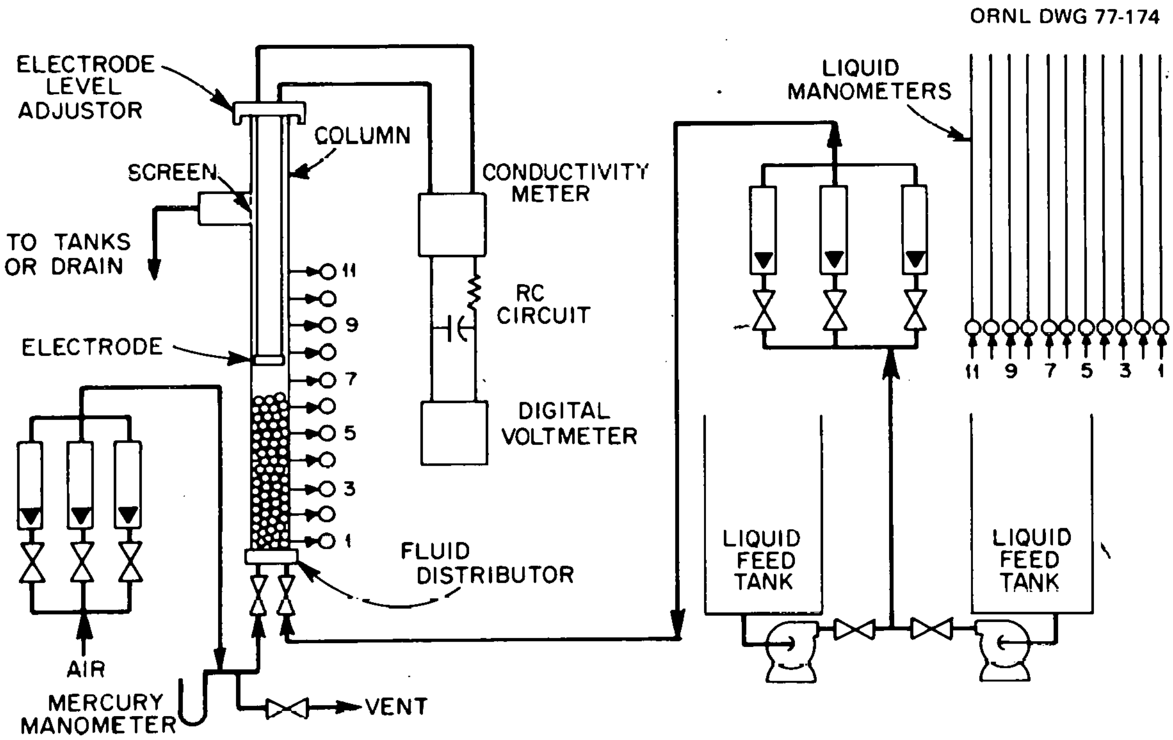

Figure 5. Three-phase fluidization and electroconductivity apparatus.

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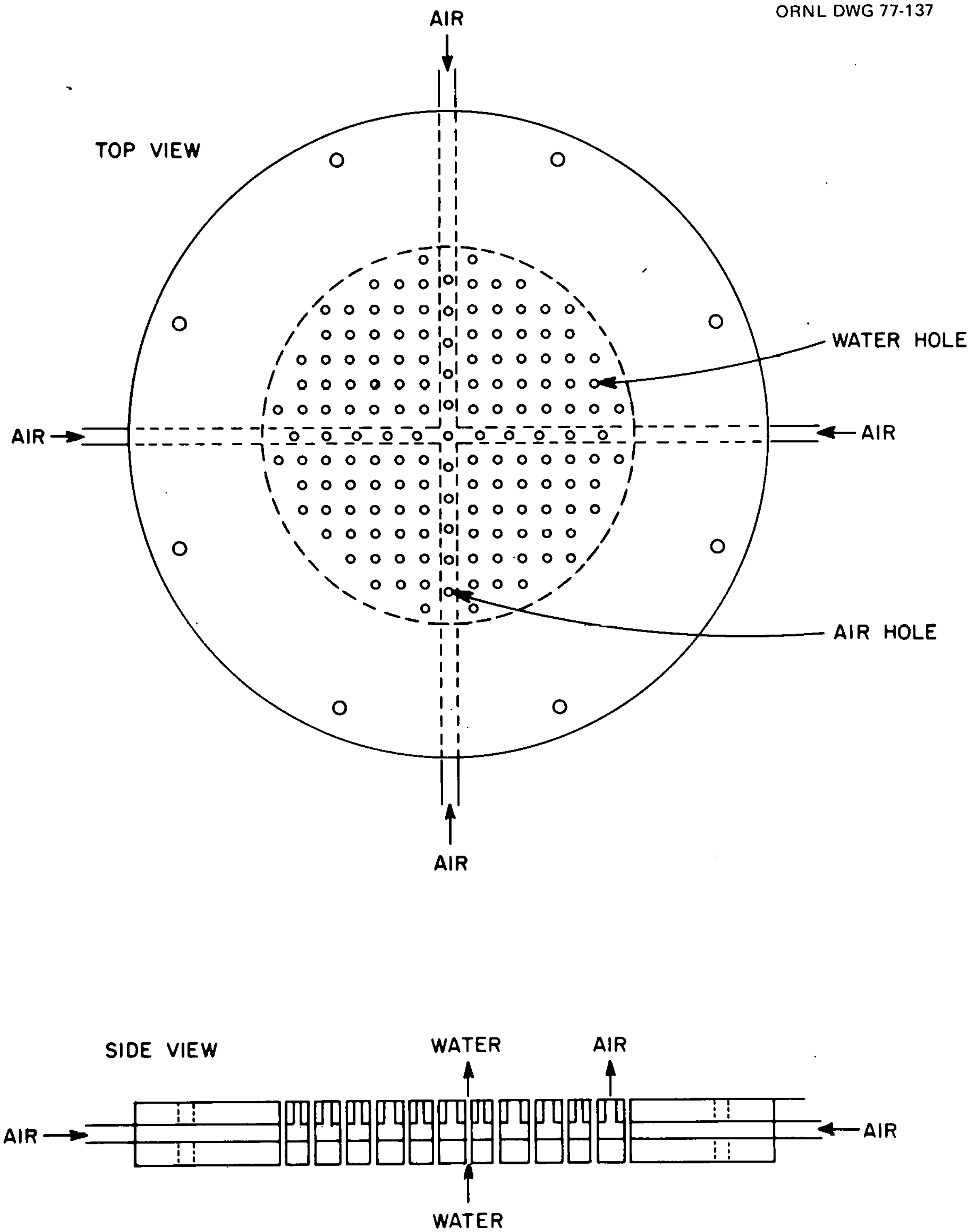

Figure 6. Air-water fluids distributor and bed suppcrt.

Table 1. Physical characteristics of solid beads used in three-phase fluidization studies

Solid	Diameter (cm)	Density (g/cm^3)
Glass [1]	0.32	2.24
Glacc	0.46	2.24
Glass [1]	0.62	2.20
Plexiglass	0.63	1.17
Alumina	0.62	1.99
Alumino-silicate [1]	0.19	1.72

[1]Used only in minimum fluidization experiments.

Table 2. Range of experimental conditions used in three-phase fluidization studies

Superficial gas velocity, U_G, cm/sec	0 - 17.3
Superficial liquid velocity, U_L, cm/sec	0 - 12.0
Column diameter, D_c, cm	7.62, 15.2
Initial bed height, H_o, cm	22 - 45

9-cm intervals (8-cm intervals for the 15.2-cm-ID column) along the column wall provided the pressure gradient in the column.

Two platinum electrodes, each with an area of approximately 1.5 cm^2, were attached 180° apart on the inside of a movable plexiglass ring. The ring, which had a radial thickness of 4.7 mm and an axial width of 19 mm, was lowered or raised by two 3.2-mm-OD stainless steel tubes threaded into the ring. Insulated wires were passed through the tubing and soldered to the electrodes. These wires were then connected by coaxial cable to a Radiometer Copenhagen Type CDM2e conductivity meter. A digital millivoltmeter and a resistor-capacitor circuit (15-sec time constant) connected to the conductivity meter permitted a time-averaged digital readout. Potassium chloride was added to the water in the feed tanks to allow readings on the 5-mmho scale of the conductivity meter.

Experimental Procedure

The electrical conductivity was first measured above the bed in the liquid alone. After the liquid and gas velocities had been adjusted to their desired flow rates, the liquid manometer heights were recorded. Then the conductivity between adjacent pressure taps was also recorded. The liquid manometer heights were recorded a second time with the conductivity probe positioned in the middle of the bed. Equations (1), (7), and (10) could then be solved to yield values for each of the three phase holdups as a function of position in the column.

The minimum fluidization velocities required to achieve fluidization were determined from the intersection of the fixed- and fluidized-bed pressure drop curves on the plot of bed pressure drop versus superficial liquid velocity at a constant gas flow rate.

Runs were numbered according to the system shown in Table 3. Thus, the fifth run using the 4.6-mm-diam glass beads in the 7.62-cm-ID column and water with no air flow would be numbered G05A13. A two-letter code, either IN or AB, was added to the run number to distinguish between parameters calculated using the pressure gradient as measured with the conductivity probe either in or above the bed, respectively.

Table 3. System for numbering runs made in three-phase fluidization studies

Runs were numbered based on a six-digit system:

Digits

1 Type of particle:

Glass, diam: C = 0.32 cm, G = 0.46 cm, K = 0.62 cm

Plexiglass: P

Alumina: A

Alumino-silicate: S

2-3 Experiment number with particular solid in column

4 Gas flow rate (percent of maximum)

0	A	50	H
2.5	B	60	I
5	C	70	J
10	D	80	K
20	E	90	L
30	F	100	M
40	G		

5 Liquid viscosity (cP)

6 Column diameter (in.)

CHAPTER 5

EXPERIMENTAL RESULTS

Minimum Fluidization

The minimum fluid flow rates required to achieve fluidization were determined by a plot of the pressure drop across the bed versus the superficial liquid velocity at a constant gas flow rate. The flow rates at which a break in the curve occurred correspond to the minimum fluidization (MF) velocities.

Effect of column diameter and static bed height. The effects of column diameter and static bed height (or bed mass) on the MF velocities for the air-water-glass beads and the air-water-plexiglass beads systems are shown in Figs. 7 and 8, respectively. In each system, the minimum liquid velocity required to fluidize the bed with no gas phase present is indicated by the arrow on the ordinate of the plot as calculated from the two-phase correlation of Wen and Yu [1966]. Excellent agreement between the calculated and experimental points for each system can be observed, as was the case for each system studied.

Neither the column diameter nor the mass of solids present in the column appeared to have any significant effect upon the MF velocities. A slight dependence on column diameter might be indicated for the air-water-plexiglass beads system; however, the small

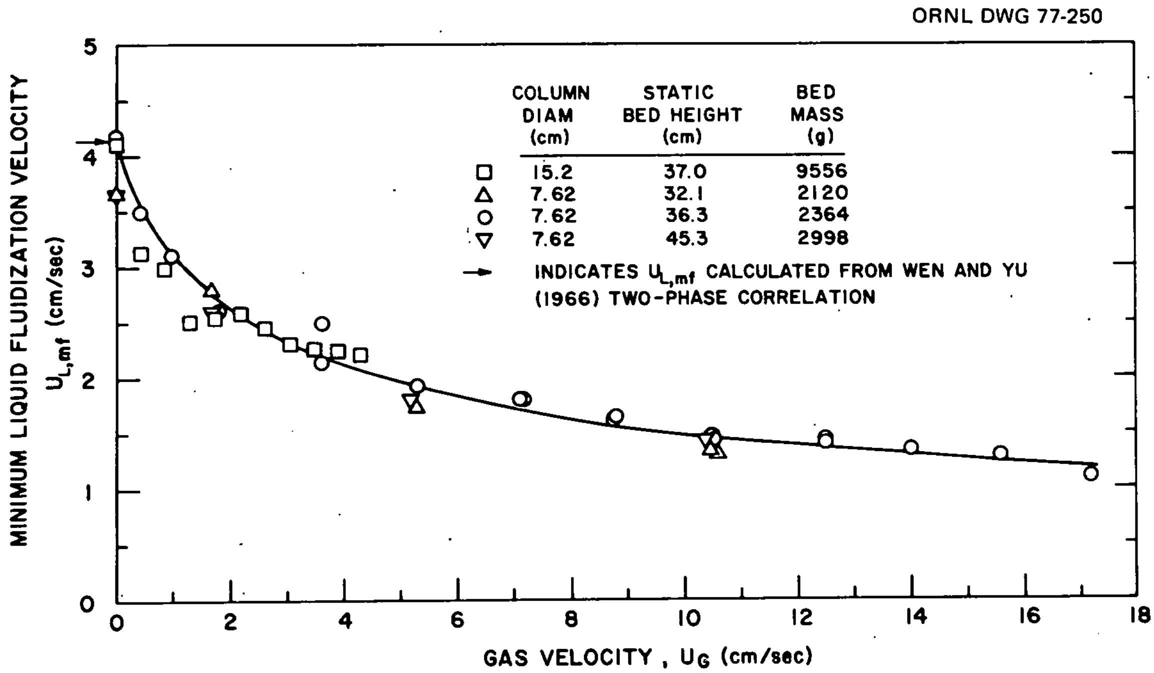

Figure 7. Minimum fluidization velocities for the air-water-glass beads.

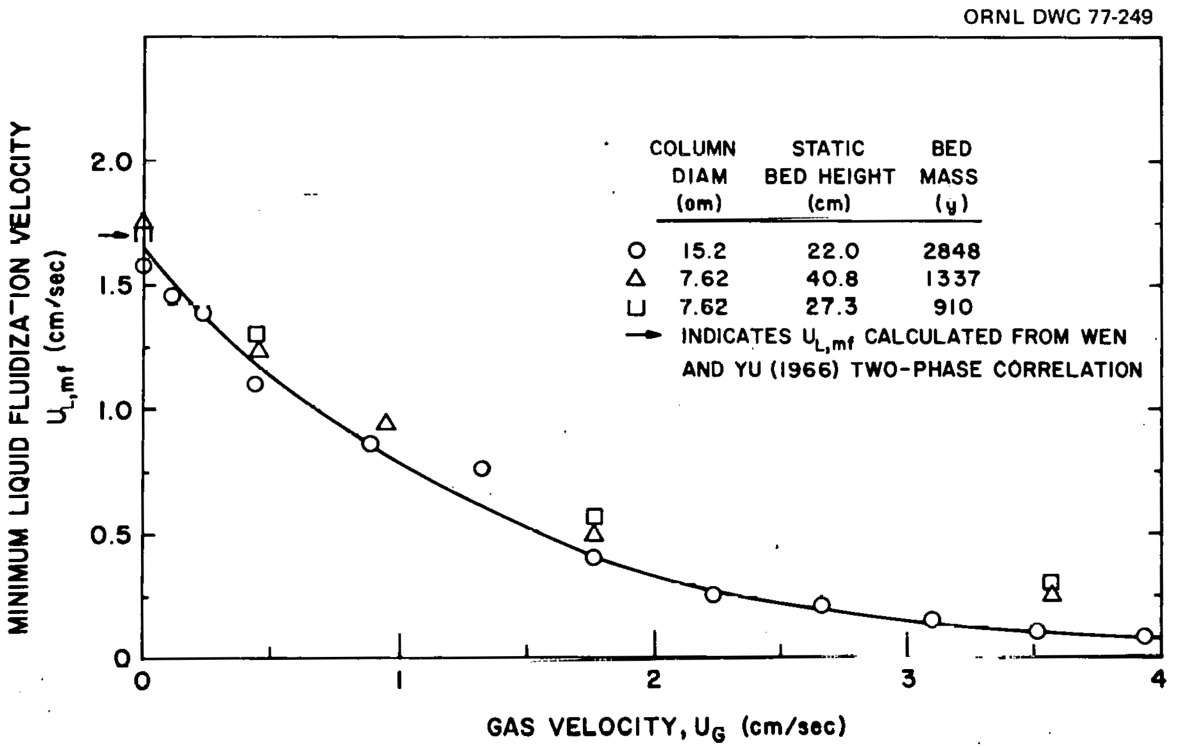

Figure 8. Minimum fluidization velocities for the air-water-plexiglass beads.

density difference between the water and solid phases made the breakpoint in the pressure drop-versus-liquid velocity curve very difficult to determine and subject to error. Since fluidization of a bed is achieved when the upward inertial and drag forces exerted on the particles by the fluids equal the buoyant weight of the bed, an effect of static bed height on the MF velocities would be expected only if end effects were present in the bed. Likewise, one would not expect the MF velocities to be a function of column diameter unless the size of the gas bubbles approached that of the column diameter or unless channeling occurred.

Effect of particle size and density. MF velocities are shown in Fig. 9 for each of the systems studied. Note that the smooth curves of Figs. 7 and 8 correspond to those shown in Fig. 9. As the gas velocity was increased, the minimum liquid velocity required to achieve fluidization in each of the systems decreased. The magnitude of this decrease is considerably different for the plexiglass beads with their small solid/liquid density difference. In their two-phase correlation, Wen and Yu [1966] noted that the MF velocity increases with increasing particle diameter and increasing solid/liquid density difference but decreases with increasing fluid viscosity. Although the plexiglass beads have the same diameter as the alumina particles and one set of the glass beads, they have a much smaller

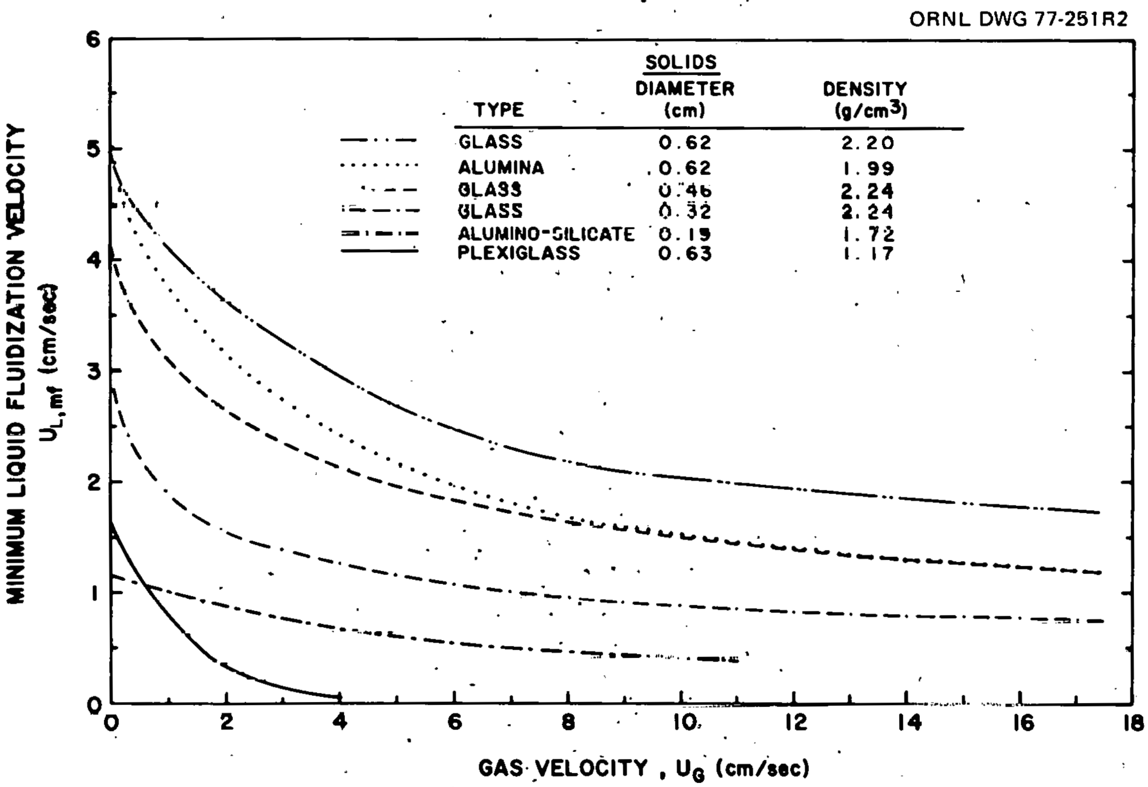

Figure 9. Effect of particle size and density on the minimum fluidization velocities.

solid/liquid density difference; thus, they fluidize at lower velocities. The alumina and alumino-silicate beads have approximately the same density, but the smaller diameter of the latter particles causes them to fluidize at lower velocities.

Likewise, the 3.2-mm-diam glass beads fluidize at lower velocities than do the 4.6-mm-diam glass beads, which in turn fluidize at lower velocities than do the 6.2-mm-diam glass beads. It is of interest to note that the curves of the alumina and 6.2-mm-diam glass beads start at essentially the same point for zero gas velocity; however, as the gas velocities increase, they rapidly diverge until the gas velocities exceed 8 cm/sec. At that point, the curve for the alumina beads merges with the curve of the 4.6-mm-diam glass beads.

Overall Phase Holdups

The assumption of a homogeneous bed may be justified in cases where the fluid velocities are sufficiently low that they result in only slightly expanded fluidized beds. Since the conductivity of the bed and the pressure gradient were measured over the entire column length, an overall, or average, phase holdup could be calculated for each phase in two ways: (a) using the conductivity reading at the center of the bed and Eqs. (1), (2), and (7); and (b) using the average measured pressure gradient over the column to obtain an equivalent homogeneous bed height and substituting that height in Eqs. (1)-(3). Both of these methods assume that the phase holdups are constant over the entire bed.

Comparison of overall phase holdups. The holdups obtained by the conductivity and pressure gradient methods are compared in Figs. 10-16.

The overall gas holdup determined by each method is shown in Fig. 10 for air-water flow only (i.e., no solids present) in both columns. A least-squares fit of the data yields a line with approximately unity slope and zero intercept.

The glass and plexiglass beads were used in both columns without any difficulty; however, the conductivity readings obtained using the porous alumina beads, which is the likely catalyst support for a coal liquefaction reactor, had to be corrected by a factor approximately equal to the volume fraction of the liquid residing in the internal pores of the solids. This factor, which was found to vary with varying gas or liquid velocities, was determined by assuming that the liquid holdup described by Eq. (7) was the external liquid holdup plus the internal pore volume fraction occupied by the liquid. The average internal pore volume fraction was determined for a particular set of conditions by applying Eq. (7), along with Eqs. (1)-(3), over the 9-cm intervals along the column that both conductivity and pressure were measured. This average internal pore volume fraction was then used in the

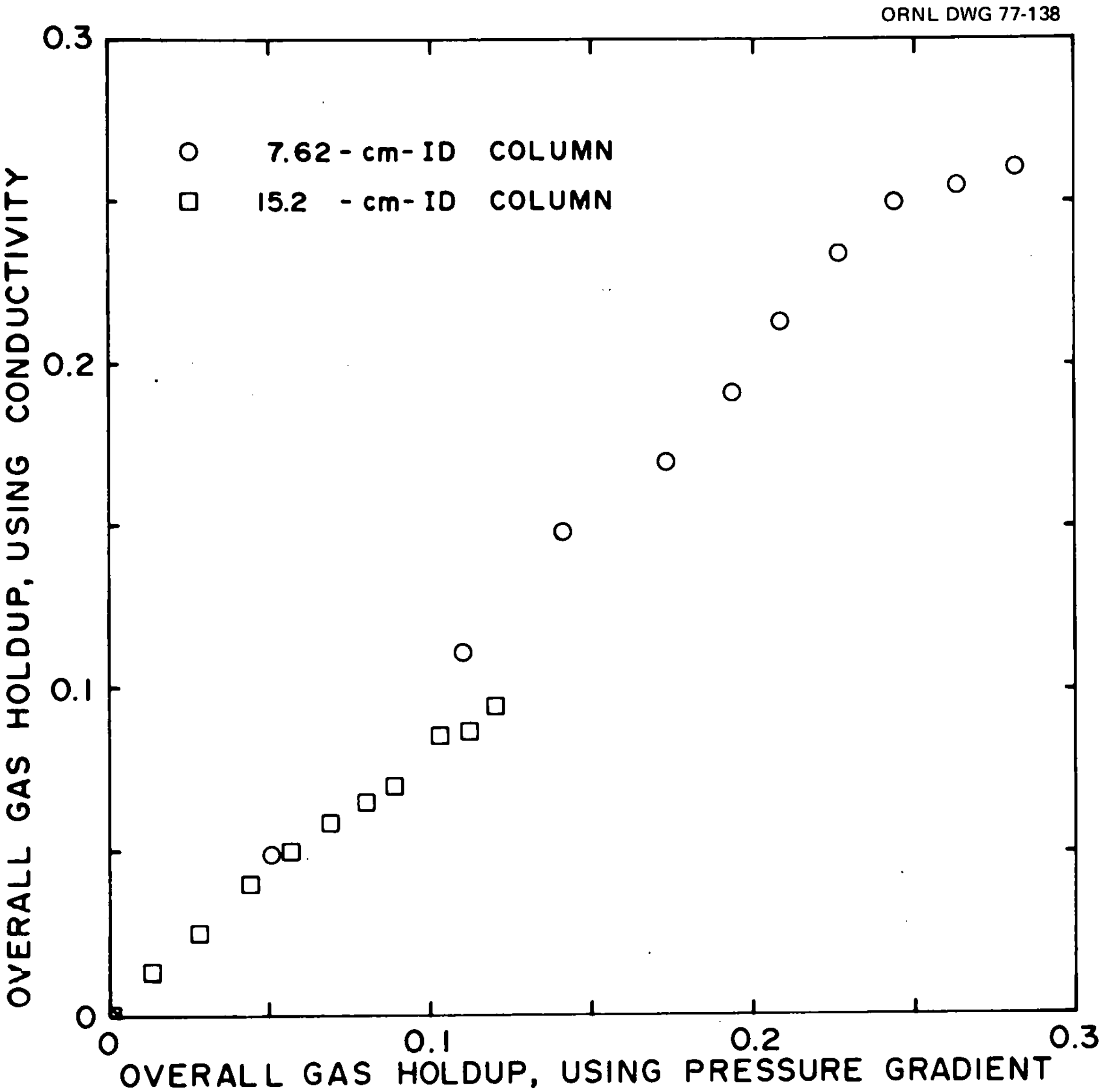

Figure 10. Comparison of overall gas holdups in two bubble columns obtained by two different methods.

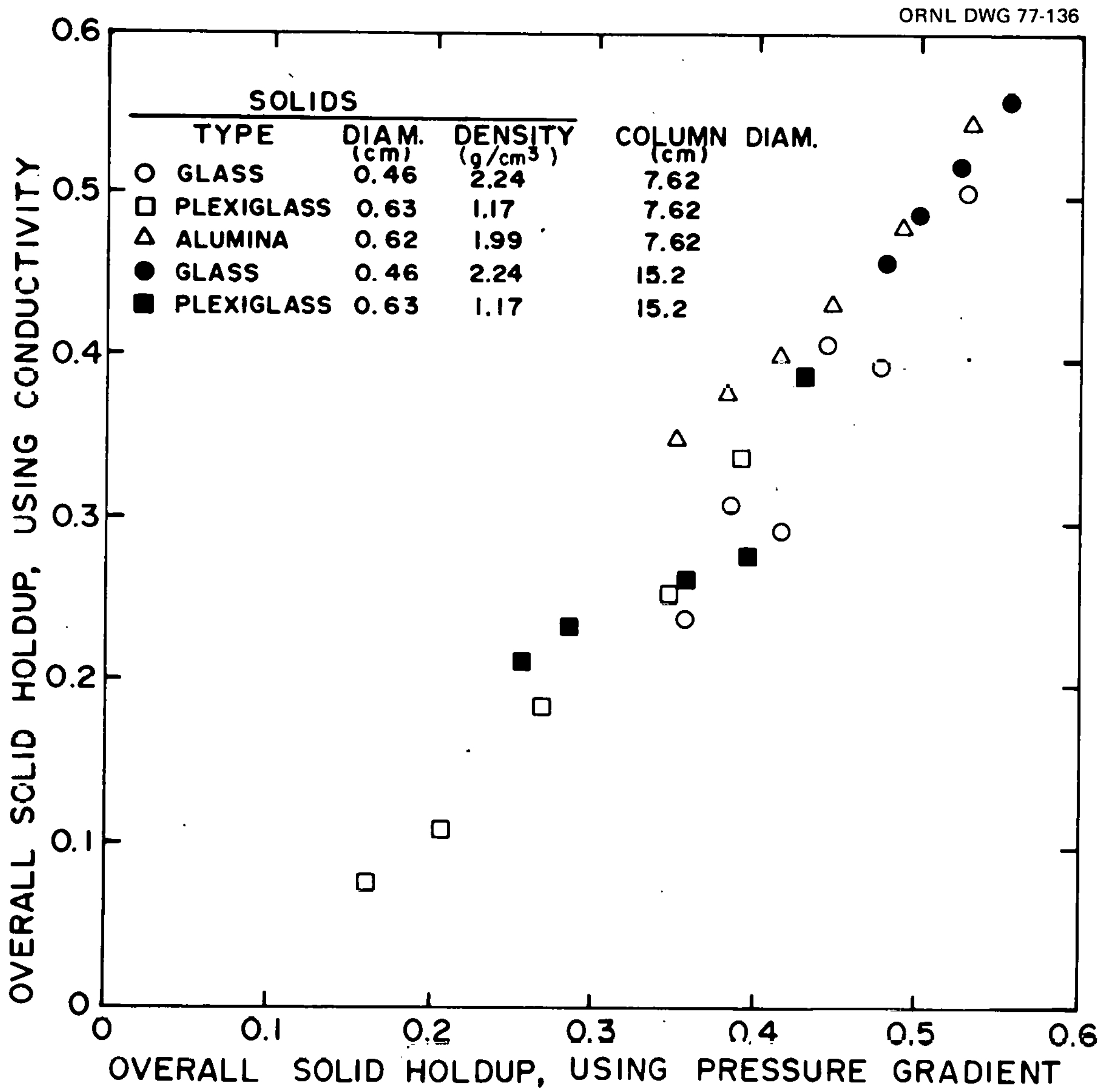

Figure 11. Comparison of overall solid holdups in liquid fluidized beds obtained by two different methods

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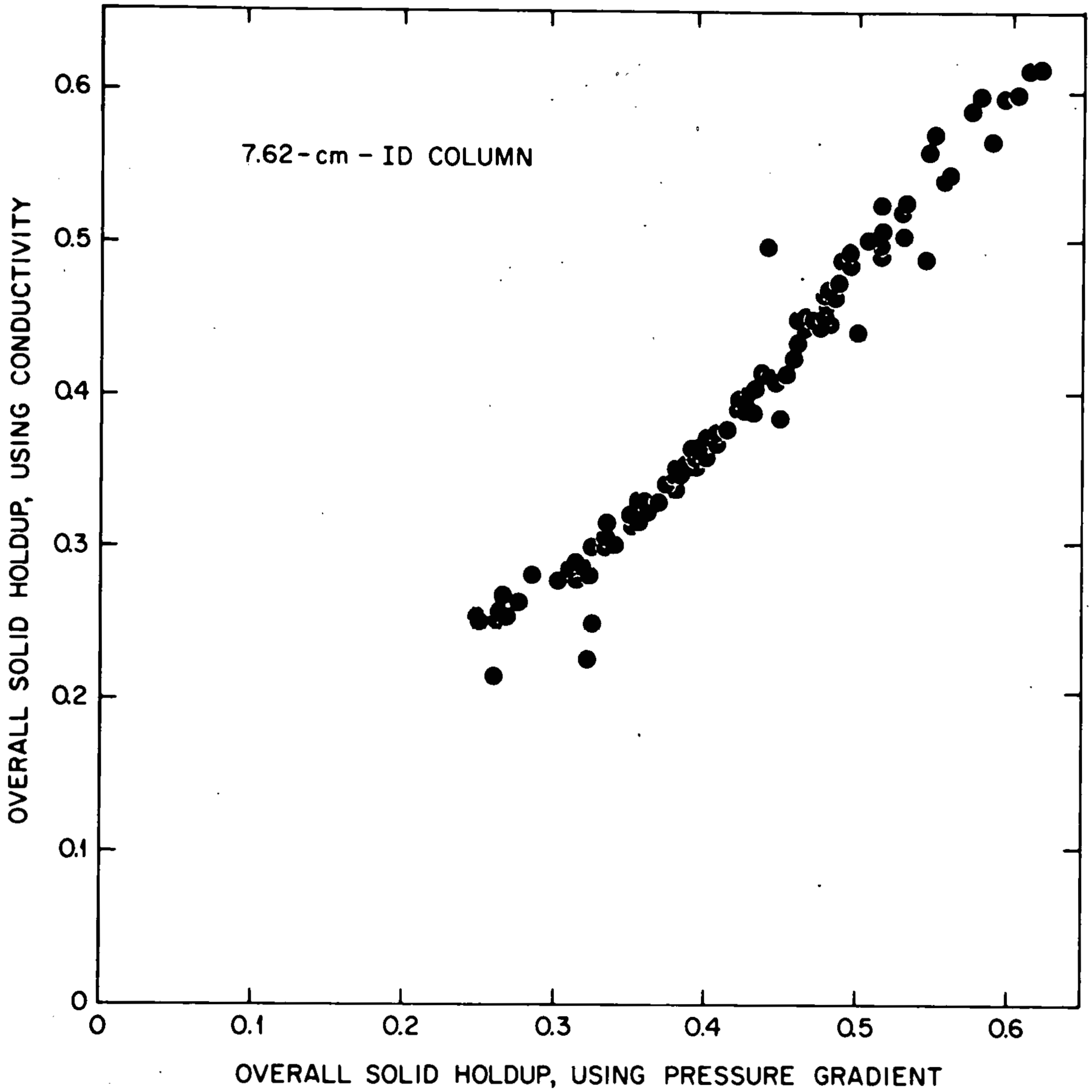

Figure 12. Comparison of overall solid holdups obtained by two different methods in the 7.62-cm-ID column using the air-water-glass beads.

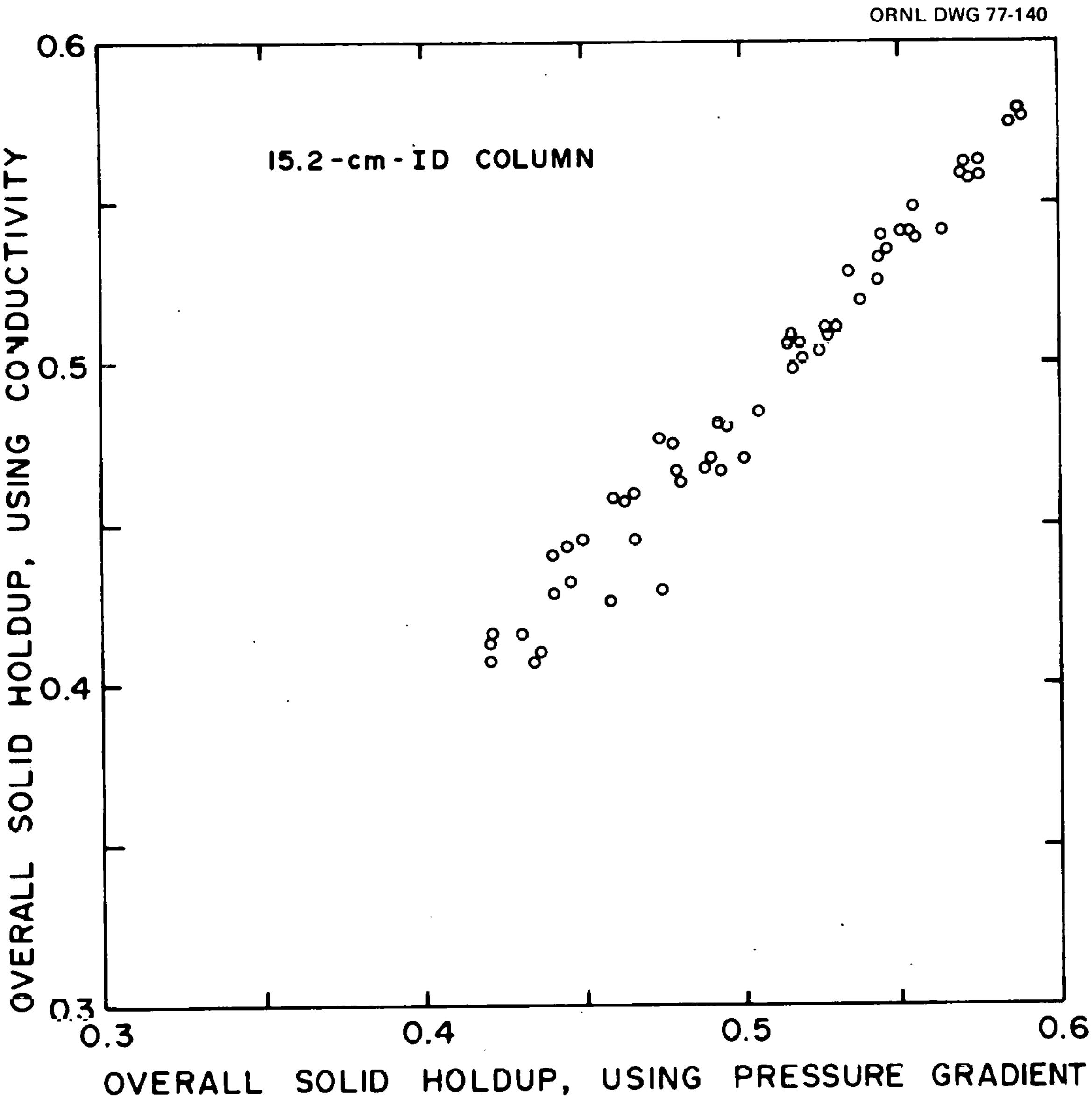

Figure 13. Comparison of overall solid holdups obtained by two different methods in the 15.2-cm-ID column using the air-water-glass beads.

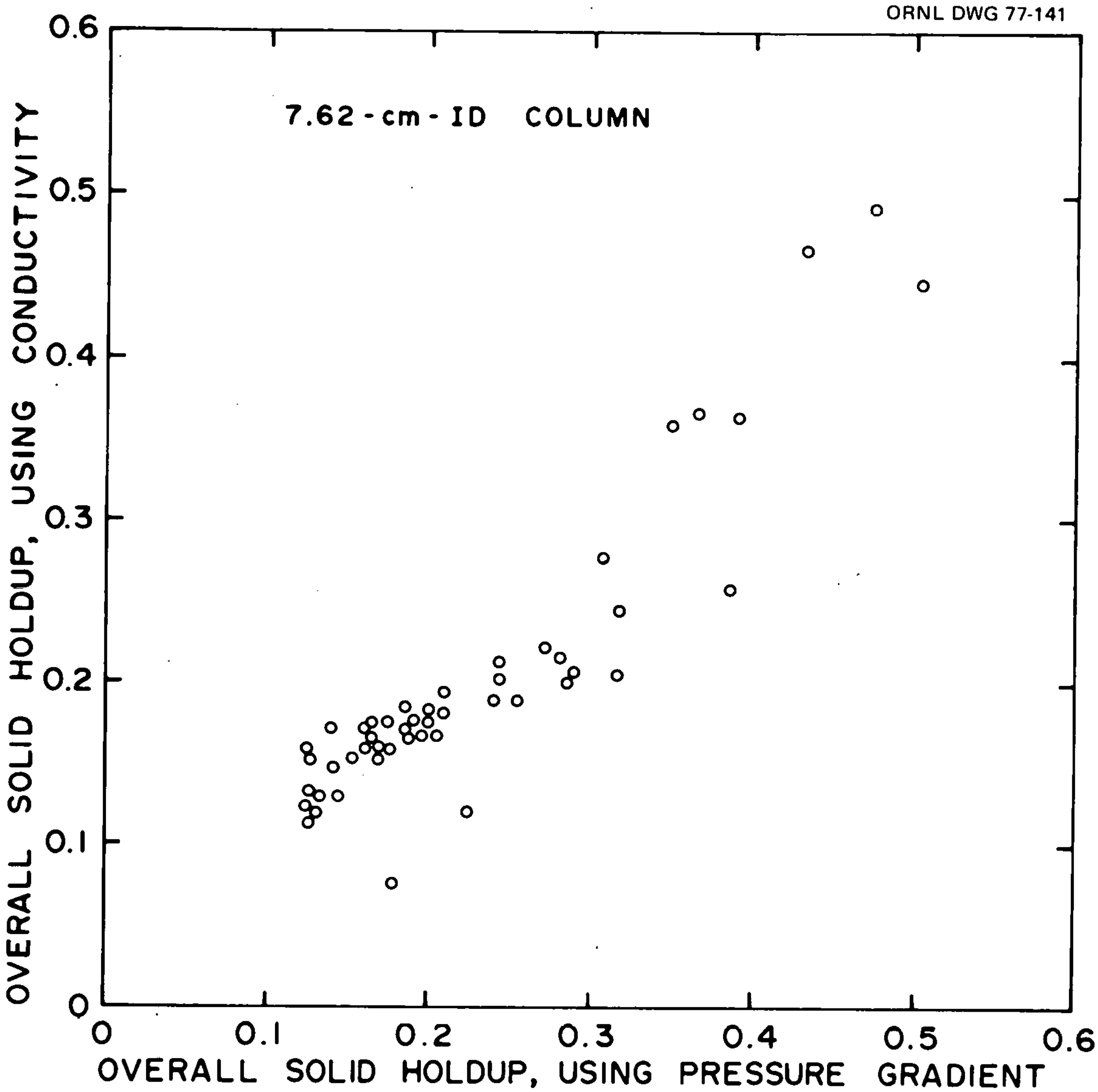

Figure 14. Comparison of overall solid holdups obtained by two different methods in the 7.62-cm-ID column using the air-water-plexiglass beads.

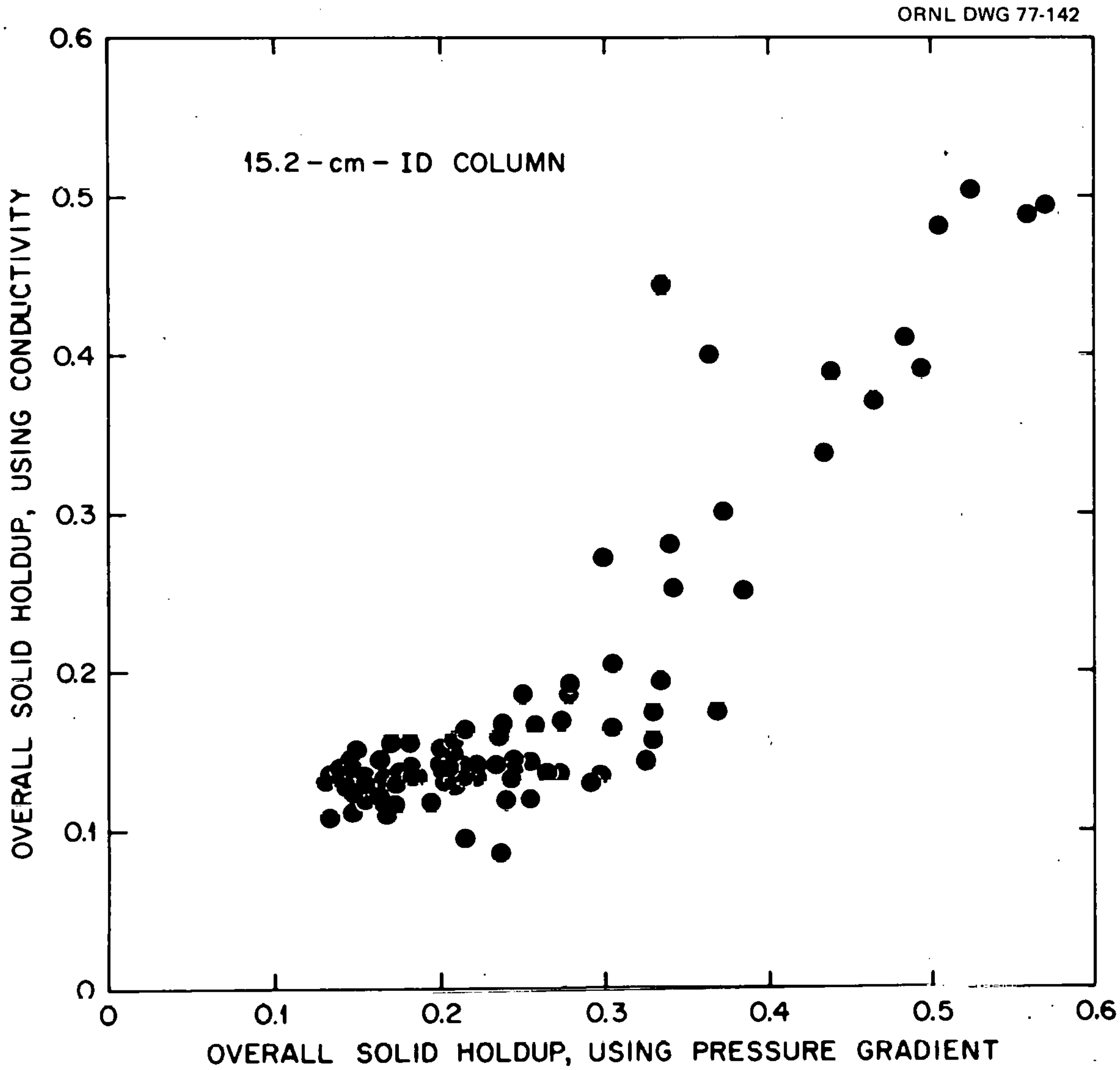

Figure 15. Comparison of overall solid holdups obtained by two different methods in the 15.2-cm-ID column using the air-water-plexiglass beads.

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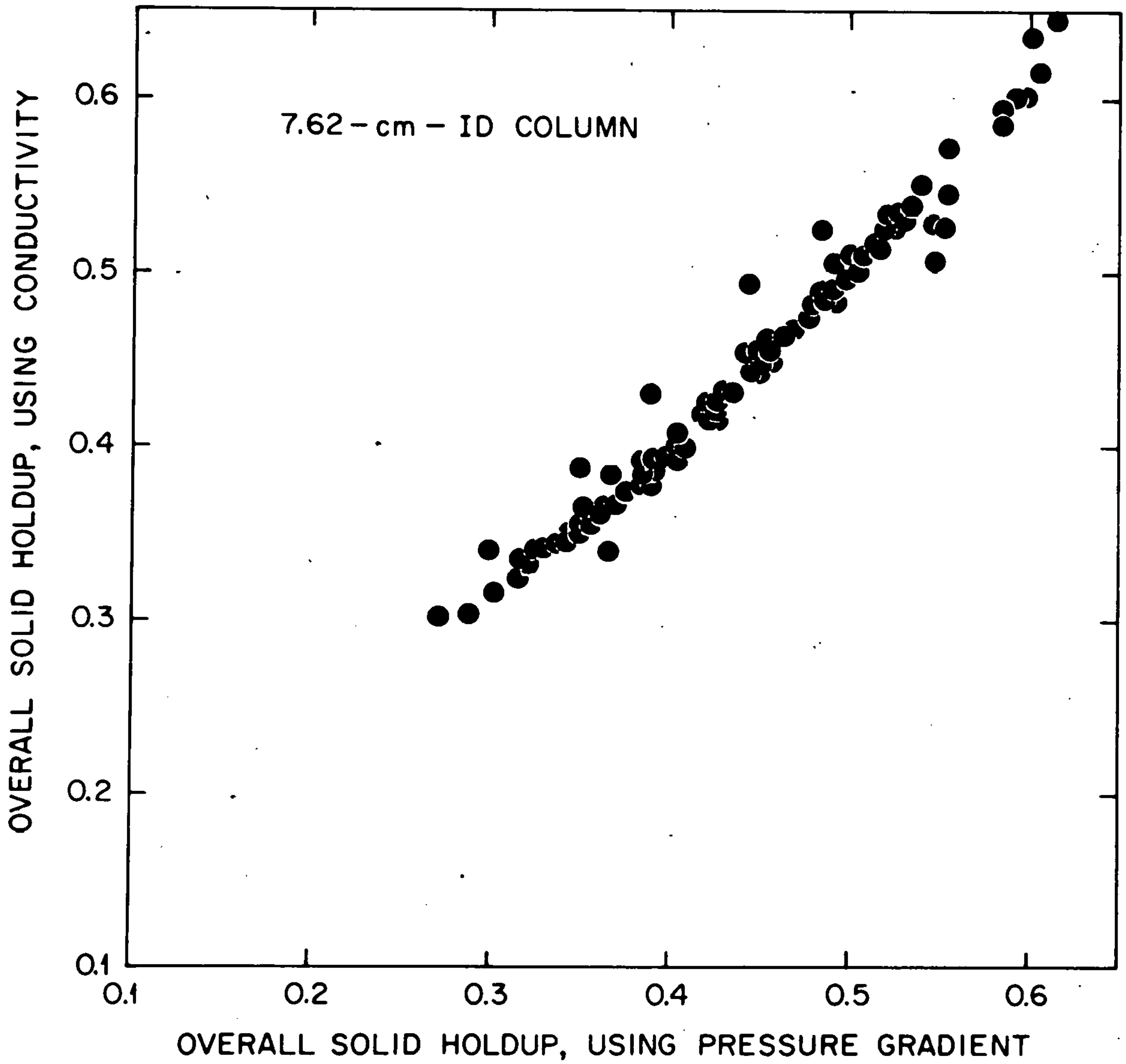

Figure 16. Comparison of overall solid holdups obtained by two different methods in the 7.62-cm-ID column using the air-water-alumina beads.

appropriate equations to solve for the holdups by both the conductivity and pressure gradient methods.

For water fluidization only (i.e., no gas phase present), values of the overall solid holdup determined by the conductivity method are shown in Fig. 11 plotted against values obtained by the pressure gradient method. In Figs. 12-16, similar comparisons are made for air-water fluidization of each of the systems studied. Least-squares fit of these data also results in lines of approximately unity slope and zero intercept, as indicated in Table 4.

As expected, disagreement between the two methods occurs chiefly for low values of solid holdups--that is, where the fluid flow rates are high and the bed height is not distinct. Under such conditions, the pressure gradient method yields a solid holdup based on a uniform bed. The conductivity method, however, yields a solid holdup based on conditions in the middle of the bed. Since the bed really goes from a fairly uniform lower section through a transition region of decreasing solid holdup to a region of only gas and liquid, the solid holdup obtained from measurements of the conductivity at the middle of the bed is lower that that obtained from the pressure gradient method.

Since the homogeneous bed model has been assumed by most of the investigators in the literature, as have Eqs. (1)-(3), the effects of solid characteristics and fluid flow rates on the overall holdups determined by the pressure gradient method will be discussed next.

Table 4. Comparison of overall solid holdup by two different methods

$$\bar{\varepsilon}_{S,C} = a + b\,\bar{\varepsilon}_{S,\Delta P}$$

Solid	Column diameter (cm)	Value of a	Value of b	Correlation coefficient	Number of points
Glass	7.62	-0.052	1.067	0.985	96
Glass	15.2	-0.016	1.005	0.985	56
Plexiglass	7.62	0.005	0.862	0.914	48
Plexiglass	15.2	-0.028	0.841	0.875	84
Alumina	7.62	-0.023	1.054	0.985	98

<u>Effect of fluid flow rates on the overall phase holdups.</u> The effect of fluid flow rates on the overall phase holdups in a typical example with the glass beads system is shown in Fig. 17. As the liquid velocity was increased, the bed expanded, thereby reducing the solid holdup. The gas holdup was not significantly affected by changes in the liquid velocity. Since the holdups of the three phases must sum to unity, the increased liquid velocity in turn increased the overall liquid holdup. At constant liquid velocity, increasing the gas velocity caused the overall gas holdup to increase and the overall solid and liquid holdup to decrease.

Similar behavior is shown in Fig. 18 for the alumina beads. The liquid velocity had a negligible effect on the overall gas holdup; it mainly affected the degree of bed expansion. Increasing the gas velocity again increased the gas holdup; however, its effect on the other two phase holdups is less pronounced, with the solid and liquid holdups showing a range, or band, of values for the gas velocities used.

Increasing the liquid velocity in the plexiglass beads systems, as shown in Fig. 19, decreased the overall solid holdup but had essentially no effect on the gas holdup. Increasing the gas velocity again increased the overall gas holdup while substantially reducing the overall solid holdup. The solid holdup was apparently reduced to a larger

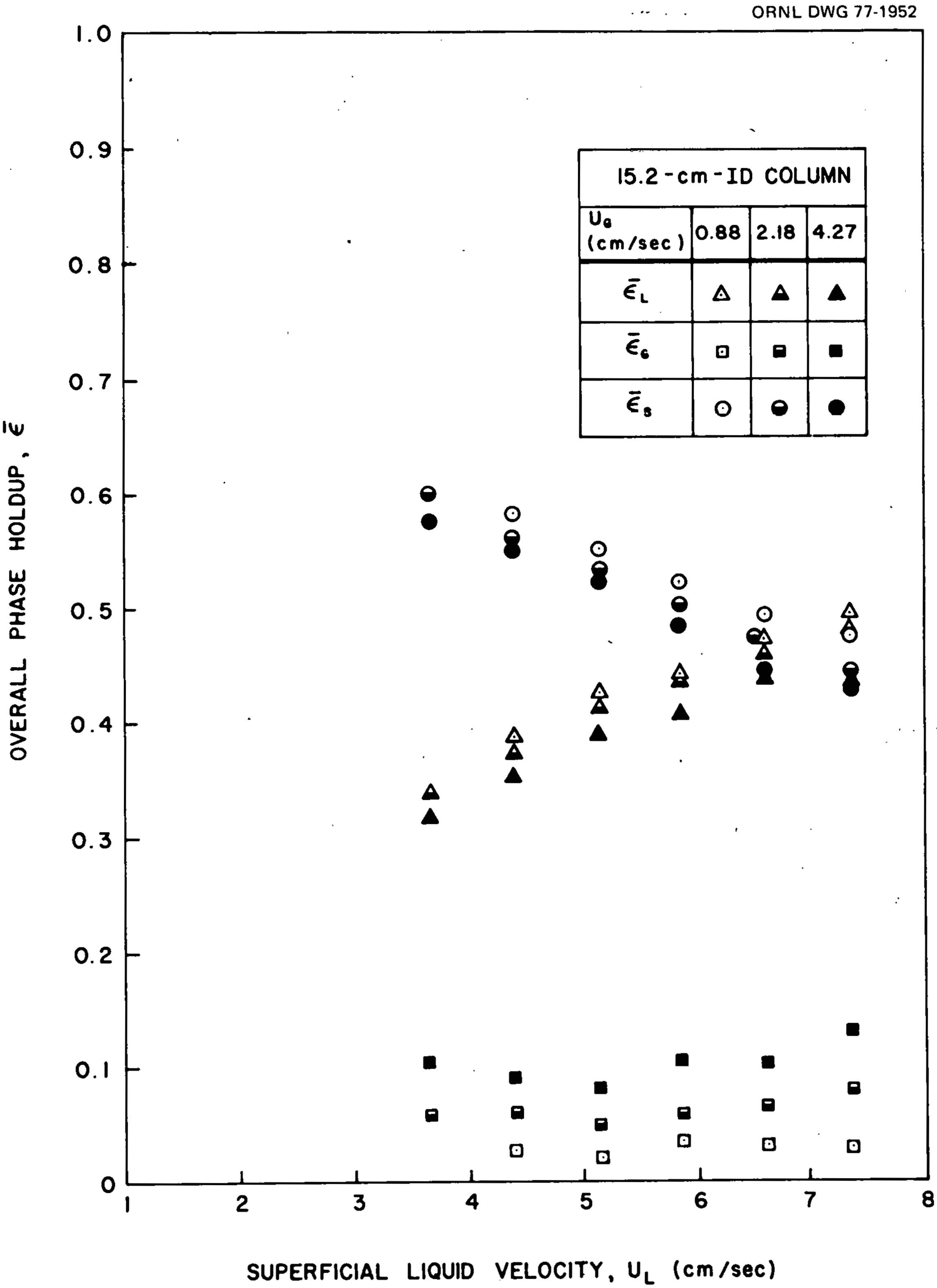

Figure 17. Effect of fluid velocities on the overall phase holdups obtained in the 15.2-cm-ID column using the air-water-glass beads.

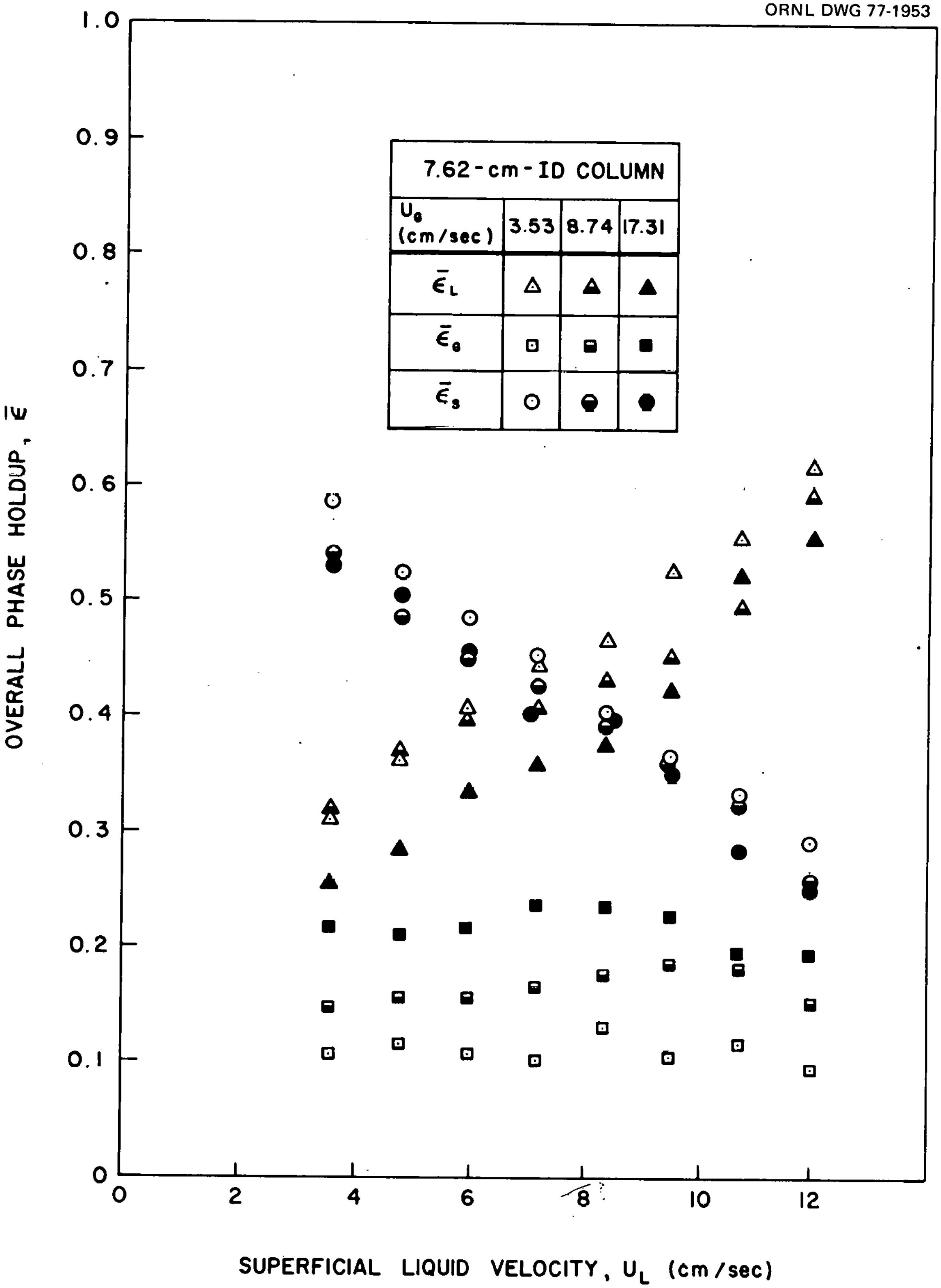

Figure 18. Effect of fluid velocities on the overall phase holdups obtained in the 7.62-cm-ID column using the air-water-alumina beads.

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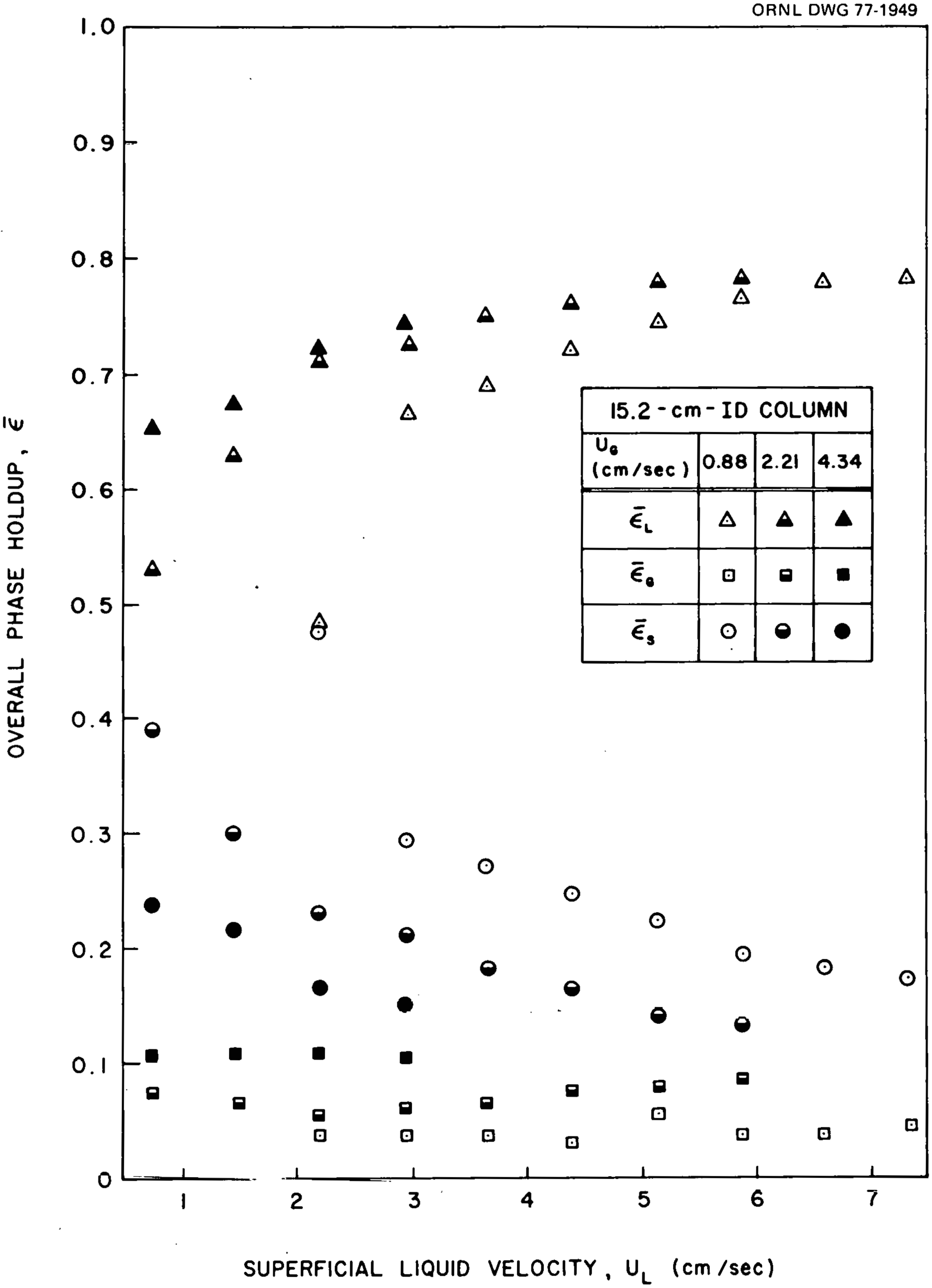

Figure 19. Effect of fluid velocities on the overall phase holdups obtained in the 15.2-cm-ID column using the air-water-plexiglass beads.

extent than the gas holdup was increased, so that the liquid holdup was increased.

Effect of column diameter on the overall phase holdups. The effect of column diameter on the overall phase holdups at a constant gas velocity is shown in Fig. 20 for the glass beads. The overall solid holdup was the same in both columns over the range of liquid velocities tested, while the gas holdup appeared to be slightly decreased in the large column as compared with that in the smaller 7.62-cm-ID column.

Data obtained by using a constant gas velocity of 0.44 cm/sec in the plexiglass beads system shown in Fig. 21 showed that the overall phase holdups followed the same trend with increasing liquid velocity in both columns. The gas holdup was similarly unaffected by column diameter in the same system at a higher gas velocity of 1.77 cm/sec, as shown in Fig 22. However, at this gas velocity and at liquid velocities below 3.5 cm/sec, the overall solid holdup was greater in the 7.62-cm-ID column than in the 15.2-cm-ID column. For liquid velocities in excess of 3.5 cm/sec, the overall solid and liquid holdup curves for the two columns merged into single curves.

Effect of solid characteristics on the overall phase holdups. The three systems used in the 7.62-cm-ID column--glass, plexiglass, and alumina beads--are shown in Fig. 23 as a function of the liquid velocity at a constant

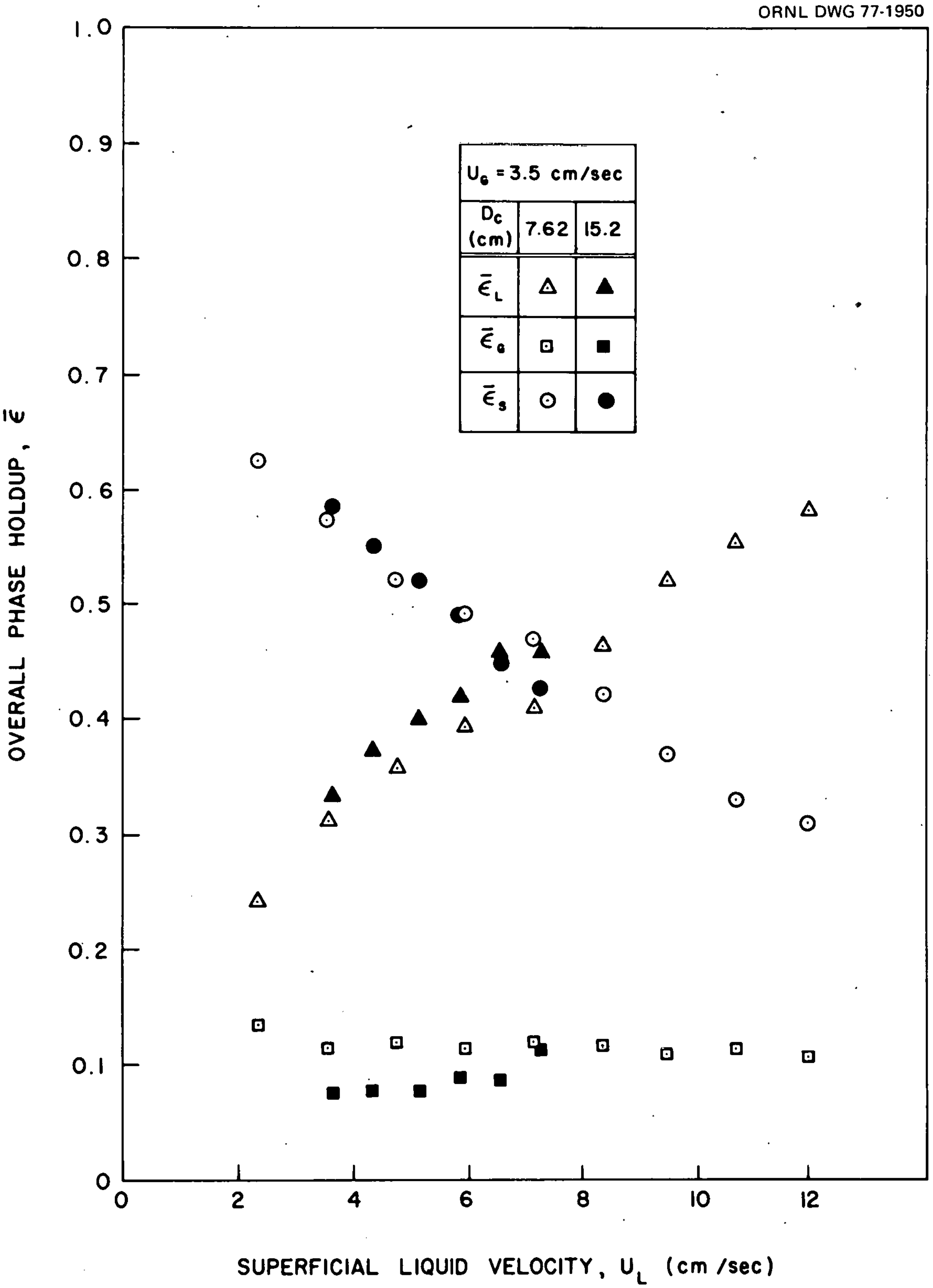

Figure 20. Effect of liquid velocity and column diameter on the overall phase holdups obtained using the air-water-glass beads.

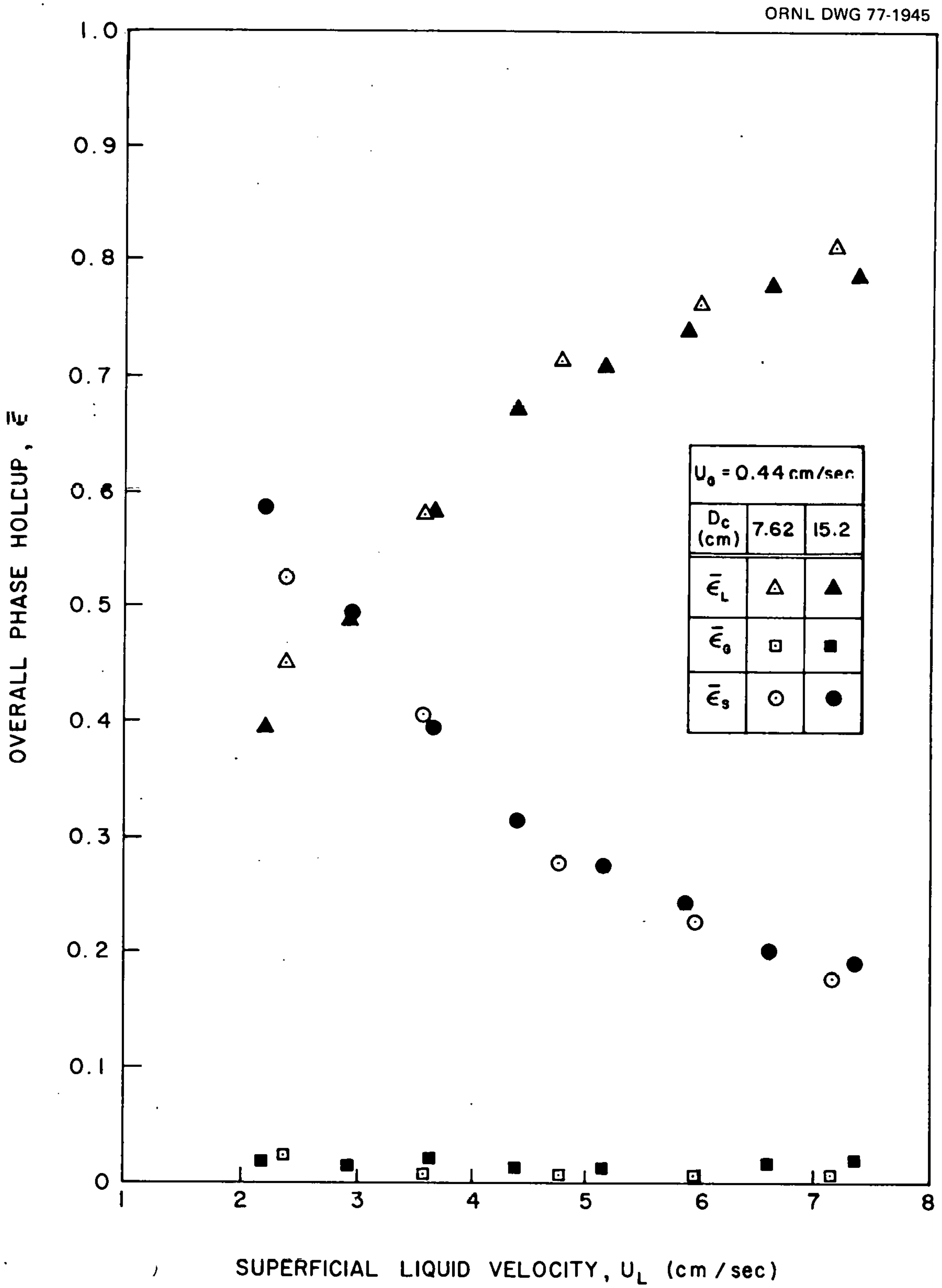

Figure 21. Effect of liquid velocity and column diameter on the overall phase holdups obtained using the air-water-plexiglass beads.

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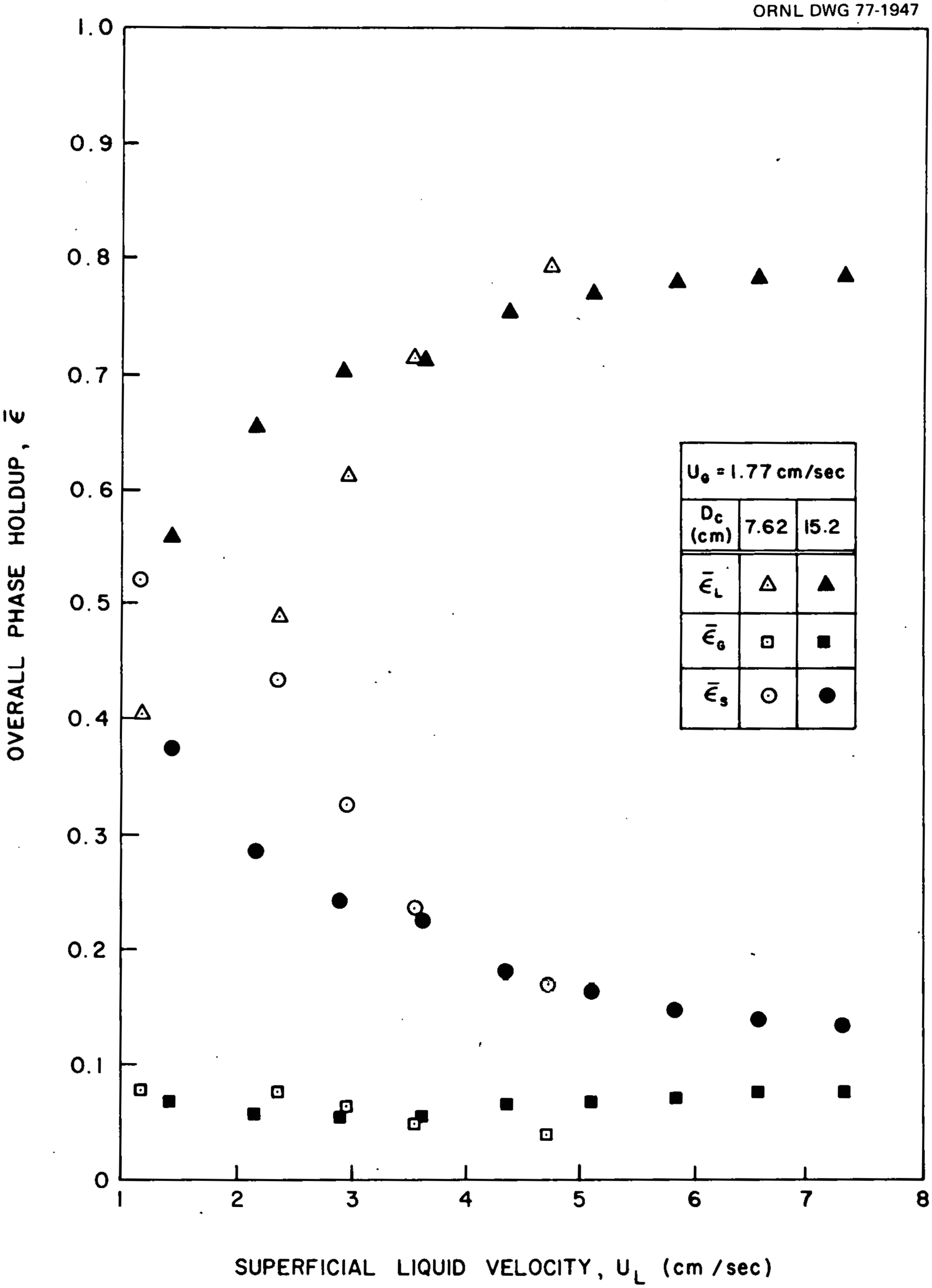

Figure 22. Effect of liquid velocity, column diameter, and a high gas velocity on the overall phase holdups obtained using the air-water-plexiglass beads.

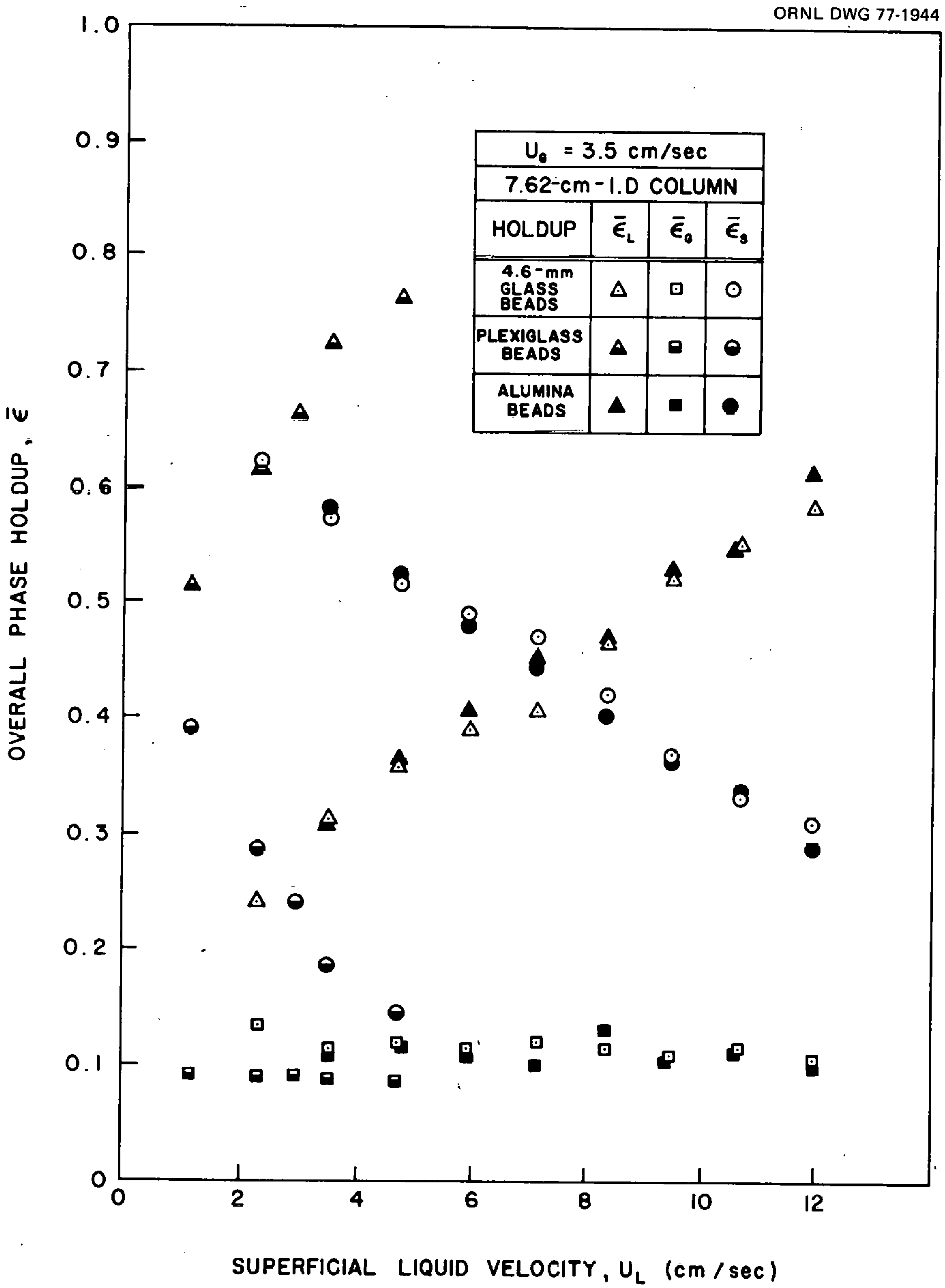

Figure 23. Effect of liquid velocity and solid characteristics on the overall phase holdups obtained in the 7.62-cm-ID column.

gas velocity. The overall gas holdup was essentially the same in all three systems, although use of the plexiglass beads resulted in slightly lower values. The glass and alumina beads gave the same values for the solid and liquid holdups while the plexiglass beads gave significantly lower solid and higher liquid holdups. The higher density of the glass beads, as compared with that of the alumina beads, compensated for their smaller diameter; on the other hand, the much lower density of the plexiglass beads did not compensate for their large diameter. Thus, while the glass and alumina bead beds were expanded to the same degree as the liquid velocity was increased, expansion of the plexiglass bead bed occurred to a considerably greater degree.

Similar behavior can be observed in Fig. 24 for the two systems studied in the 15.2-cm-ID column. For a constant gas velocity of 2.2 cm/sec, the overall gas holdup was nearly identical in the glass and plexiglass bead beds. Again, however, the lower-density plexiglass beads, while fluidized at less than half the liquid velocity needed to fluidize the glass beads, expanded to a considerably greater degree. This yielded a lower overall solid holdup and, in turn, a higher overall liquid holdup.

The overall phase holdup results are in good agreement with those of other investigators mentioned in the literature survey.

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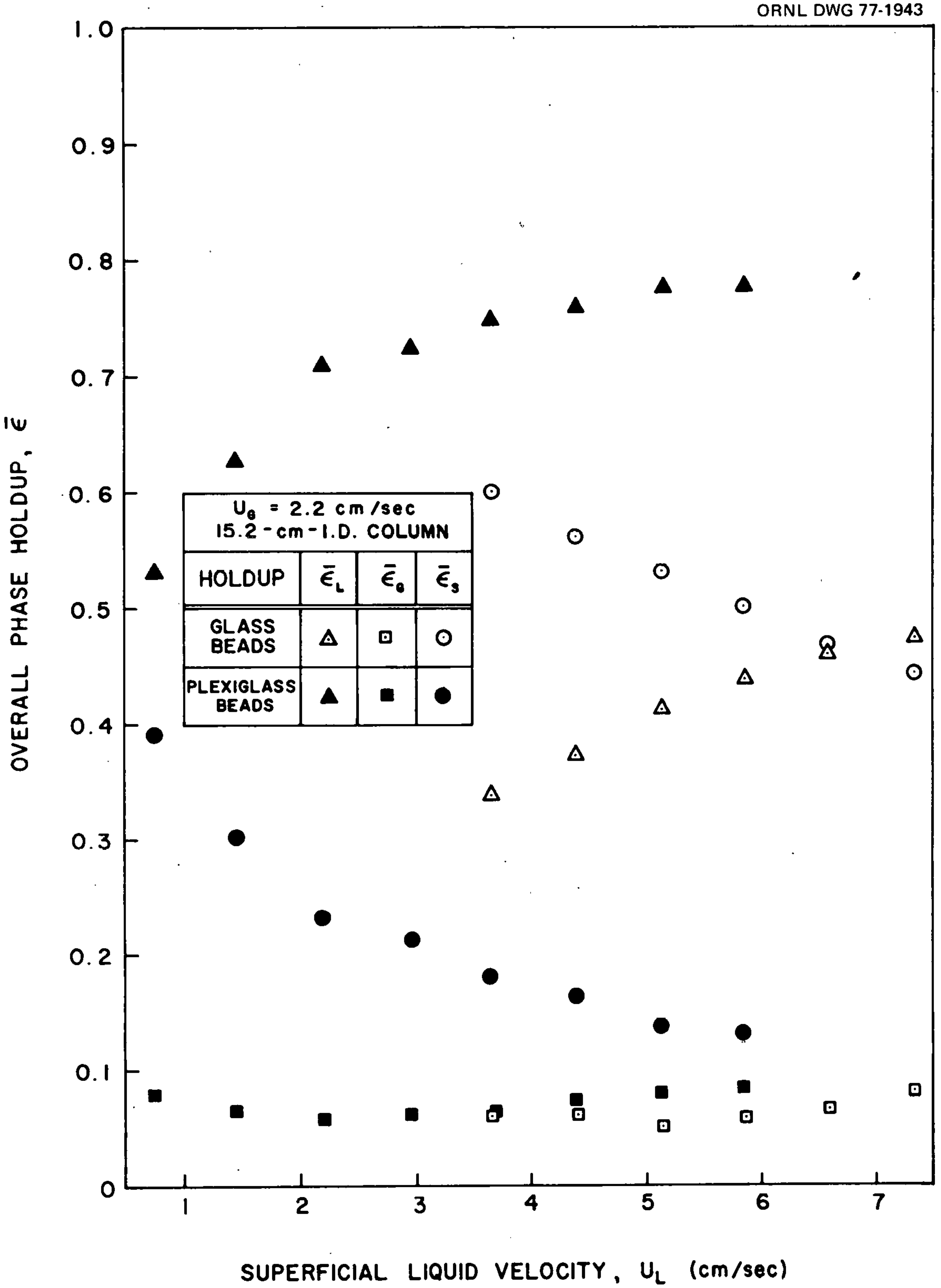

Figure 24. Effect of liquid velocity and solid characteristics on the overall phase holdups obtained in the 15.2-cm-ID column.

Bed Expansion Characteristics

The effects of injecting gas into a liquid-only fluidized bed were studied in several systems. In addition to noting whether the liquid fluidized bed initially expanded or contracted upon injection of gas, pertinent data were recorded so that the criterion of Epstein [1976], Eq. (17), could be applied.

The results, presented in Table 5, show that each of the systems expanded upon the introduction of gas when low liquid velocities were used. As the liquid velocity was increased in a liquid-only fluidized bed, the tendency of the bed to expand upon the introduction of gas decreased in each of the systems studied. Recalling that a positive value for Ψ indicates expansion and a negative value denotes contraction, Eq. (17) correctly predicted the expansion characteristics of each system studied except for the plexiglass beads at the two highest liquid velocities used. At those two liquid flow rates, Eq. (17) predicted that the bed would contract upon injection of gas; experimental observations, on the other hand, indicated that it would expand. The experimental observations were based on the bed heights calculated from the pressure gradients measured before and after gas was introduced into the columns. The plexiglass beads, with their small solid/liquid density difference, yielded a small change in pressure over the column; thus the pressure drop measurements for the plexiglass beads were subject to the

Table 5. Bed expansion characteristics of liquid fluidized beds upon injection of gas

System	U_L (cm/sec)	ε_L at ε_G =0	v_S (cm/sec)	k	Ψ (cm/sec)	Experimental Observation
4.6-mm-diam glass beads, 7.62-cm-ID column, U_t =41.4 cm/sec, n = 2.39	4.77	0.432	32.5	0.282	9.4	Expansion
	5.96	0.481	32.7	0.389	8.7	Expansion
	8.35	0.553	33.3	0.592	7.4	Expansion
4.6-mm-diam glass beads, 15.2-cm-ID column, U_t =41.4 cm/sec, n = 2.39	4.77	0.404	45.1	0.231	9.7	Expansion
	5.87	0.456	45.3	0.332	7.8	Expansion
	7.34	0.522	45.6	0.498	3.9	Expansion
6.2-mm-diam alumina beads, 7.62-cm-ID column, U_t =42.8 cm/sec, n = 2.39	4.77	0.381	32.8	0.194	13.7	Expansion
	5.29	0.411	32.8	0.243	13.0	Expansion
	5.96	0.441	33.0	0.300	12.4	Expansion
	7.16	0.488	33.2	0.407	11.4	Expansion
	8.35	0.526	33.4	0.509	10.5	Expansion
	9.54	0.575	33.6	0.665	7.6	Expansion
	10.74	0.616	33.7	0.818	4.8	Expansion
	11.93	0.649	33.9	0.957	2.5	Expansion
6.3-mm-diam plexiglass beads, 15.2-cm-ID column, U_t =18.4 cm/sec, n = 2.39	1.83	0.393	25.0	0.212	3.0	Expansion
	3.67	0.558	25.0	0.712	-3.9	Contraction
	5.50	0.698	25.0	1.190	-10.5	Expansion
	7.34	0.785	25.0	1.693	-18.3	Expansion
1.9-mm-diam alumino-silicate beads, U_t =17.9 cm/sec, n = 2.49	1.22	0.292	31.1	0.087	4.2	Expansion
	2.45	0.470	31.4	0.278	-1.7	Contraction
	4.77	0.621	31.8	0.838	-7.4	Contraction

largest potential relative error of any of the systems studied.

Axial Variation in Holdups

As discussed previously, bed heights are indistinct at high flow rates, and the holdups calculated using Eqs. (1)-(3) are based on an unrealistic homogeneous-bed model. The holdups could be determined as functions of axial position within the column by using the electroconductivity of the bed and the measured pressure gradient

A typical plot of the axial variation of the phase holdups is shown in Fig. 25. The liquid holdup remained essentially uniform near the bottom of the bed but increased with distance from the bottom to a constant value in the gas-liquid region above the bed. The calculated bed height (48 cm) was that obtained from the pressure gradient in and above the bed. This corresponded to the height of a bed with uniform solid holdup as indicated by the horizontal dashed line. However, the actual solid holdup decreased with increasing axial position in the bed, so that the observed upper limit of solids would be between 60 and 70 cm. The area under the solid holdup curve should be equal to the following modification of Eq. (3):

$$\int_0^H \varepsilon_S dh = M_S/\rho_S A \quad . \tag{27}$$

If the solid holdup is not a function of height in the bed, Eq. (27) reduces to Eq. (3).

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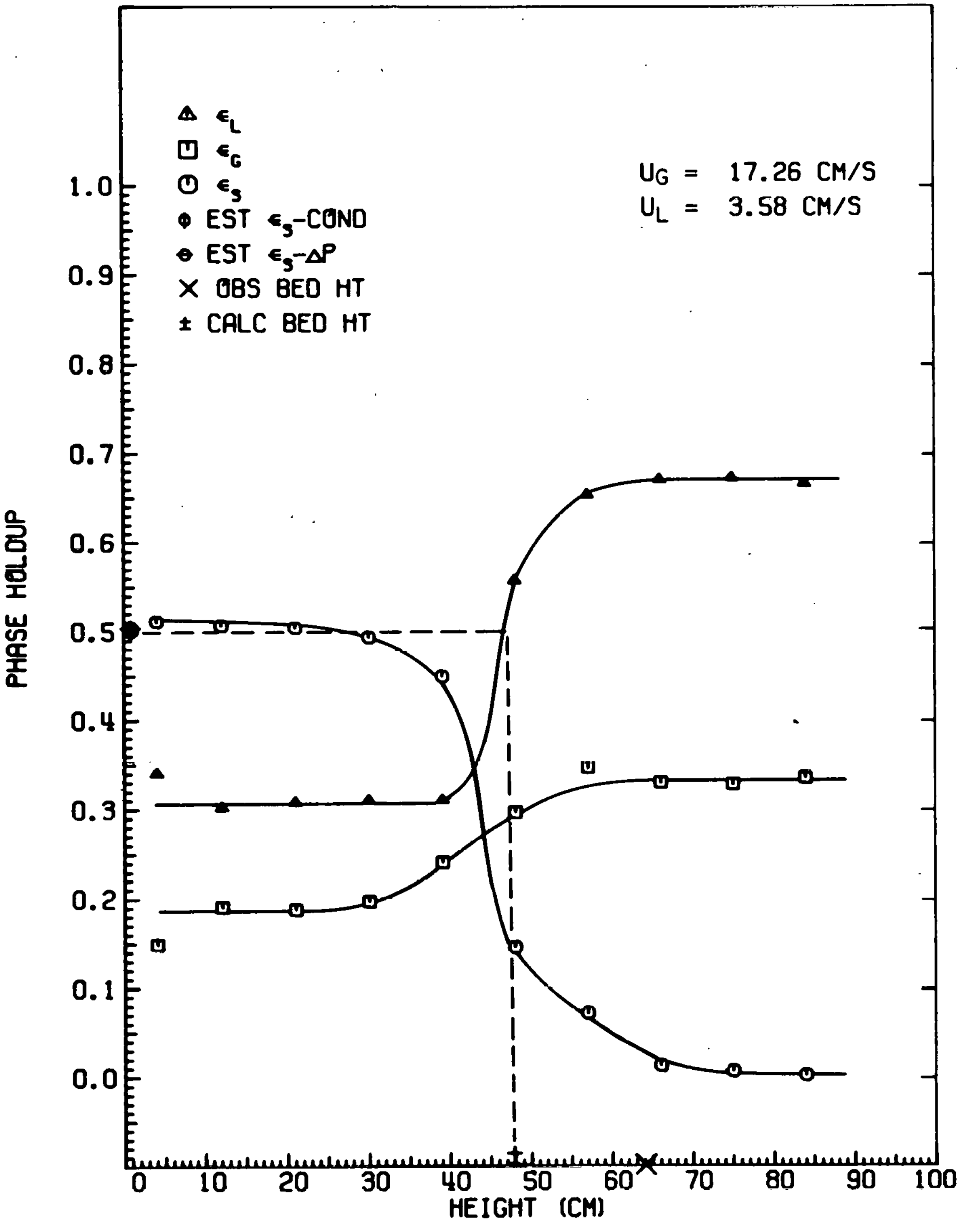

Figure 25. Axial variation of phase holdups in the 7.62-cm-ID column using the air-water-glass beads.

Effect of column diameter. The effect of column diameter on the axial variation of the solid and liquid holdups can be seen in Figs. 26 and 27. These results, typical of most of the data, were obtained in the 7.62- and 15.2-cm-ID columns under identical conditions (i.e., identical gas velocities, liquid velocities, particle type, and static bed height).

Neither figure indicates a dependence of the holdups on column diameter in the lower portion of the beds. However, for the lower liquid velocity used in Fig. 26, the transition region from three phases (gas-liquid-solid) to two phases (gas-liquid) appeared to be broader in the smaller column. The liquid holdup also rose to a slightly lower value in the 7.62-cm-ID column as compared with the 15.2-cm-ID column. These effects are not evident in Fig. 27, where the same relationship between the holdups and height was obtained in both columns.

Effect of liquid velocity. The effect of liquid velocity on the axial variation in the glass bead holdup is shown in Fig. 28 under conditions of constant gas velocity in the 7.62-cm-ID column. The bed expanded, and thus the solid holdup decreased, as the liquid velocity was increased. The calculated bed height, as found from the intersection of the measured pressure gradients in and above the bed, is indicated on the curves for each flow rate. This value corresponds to the height the same bed would have

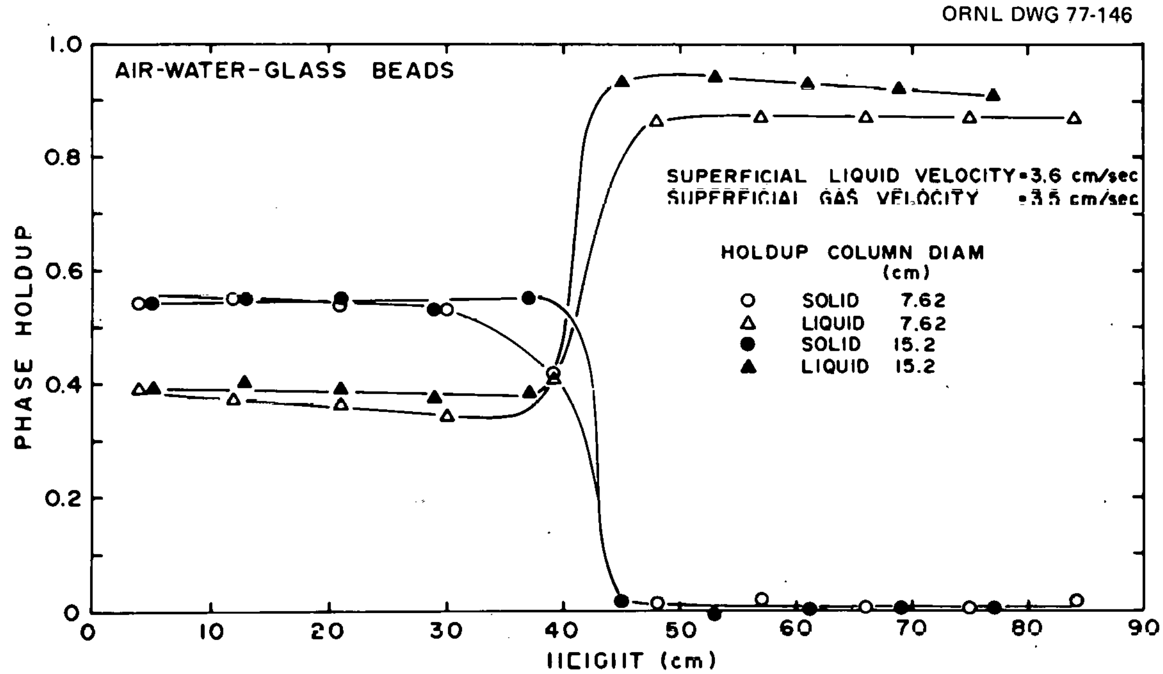

Figure 26. Effect of column diameter on the axial variation of phase holdups using a liquid velocity of 3.6 cm/sec.

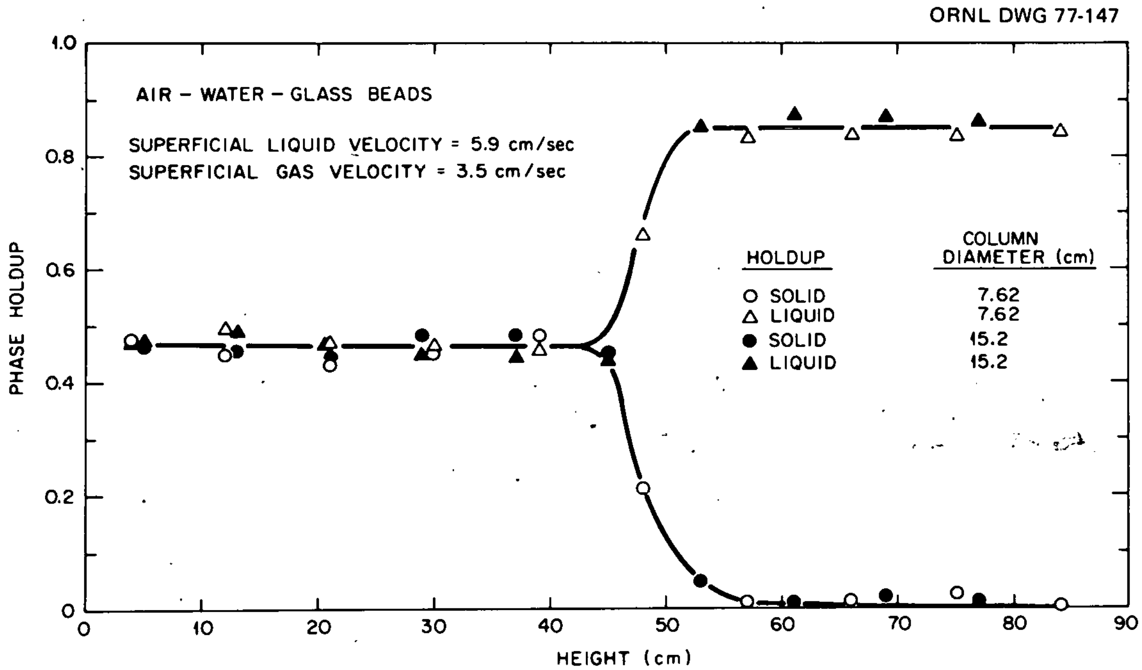

Figure 27. Effect of column diameter on the axial variation of phase holdups using a liquid velocity of 5.9 cm/sec.

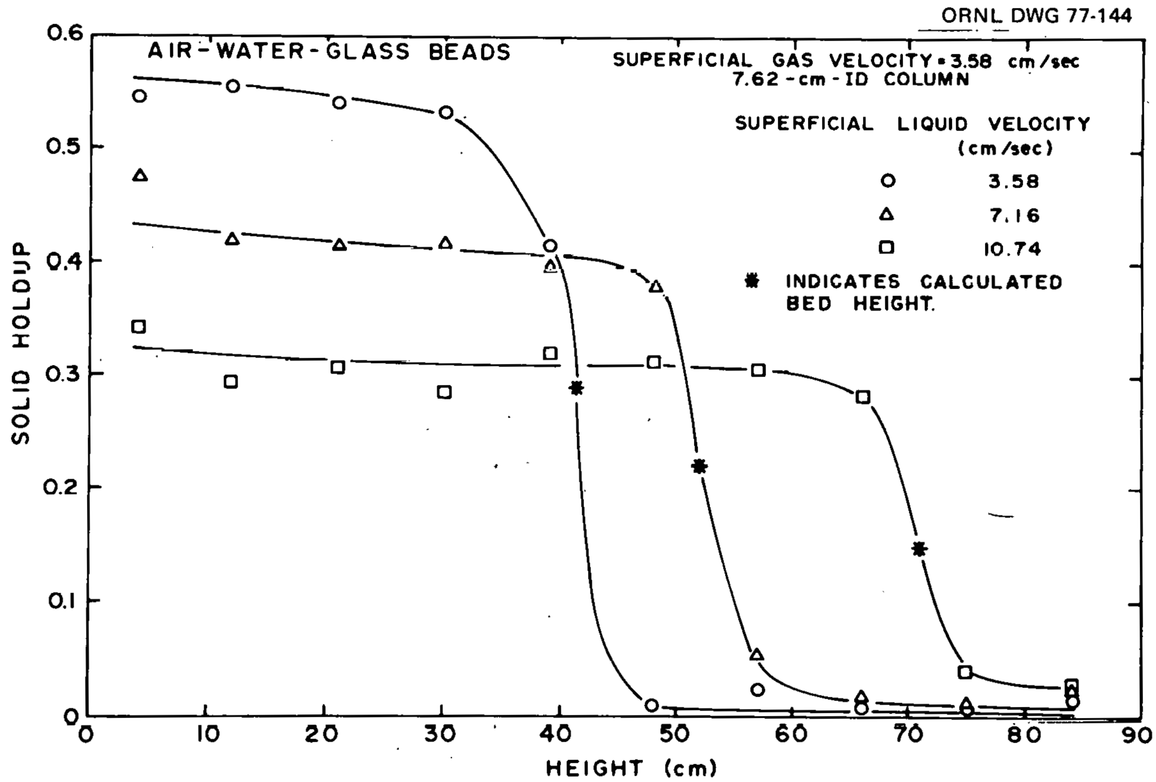

Figure 28. Effect of liquid velocity on the axial variation in the solid phase holdup.

if the solids in the column were uniformly distributed. The highest point at which solids were detected was higher than this calculated bed height, however, since the bed contains a rather wide transition region over which flow changes from a three-phase to a two-phase column. The width of this transition region appeared to remain approximately constant with changing liquid velocity; that is, the solid holdup decreased from the approximately constant value in the bed to zero over about 20 cm of column height.

Effect of gas velocity. When the liquid velocity was held constant and the gas velocity was increased, the width of the transition region increased substantially, as illustrated in Fig. 29. The solid holdup in the lower portion of the bed was decreased slightly by the increase in gas velocity from 3.58 to 17.26 cm/sec; however, the width of the transition region increased from 20 cm to approximately 35 cm. As expected, the calculated bed height for the higher gas velocity indicated a much lower bed height than that observed visually (highest position with solids).

These results demonstrate the shortcomings of assuming a distinct bed height and a uniform bed. The transition region is a significant fraction of the total bed height and must be considered in realistic designs of three-phase systems. If commercial units operate with taller beds, the transition region would become less important; however, the

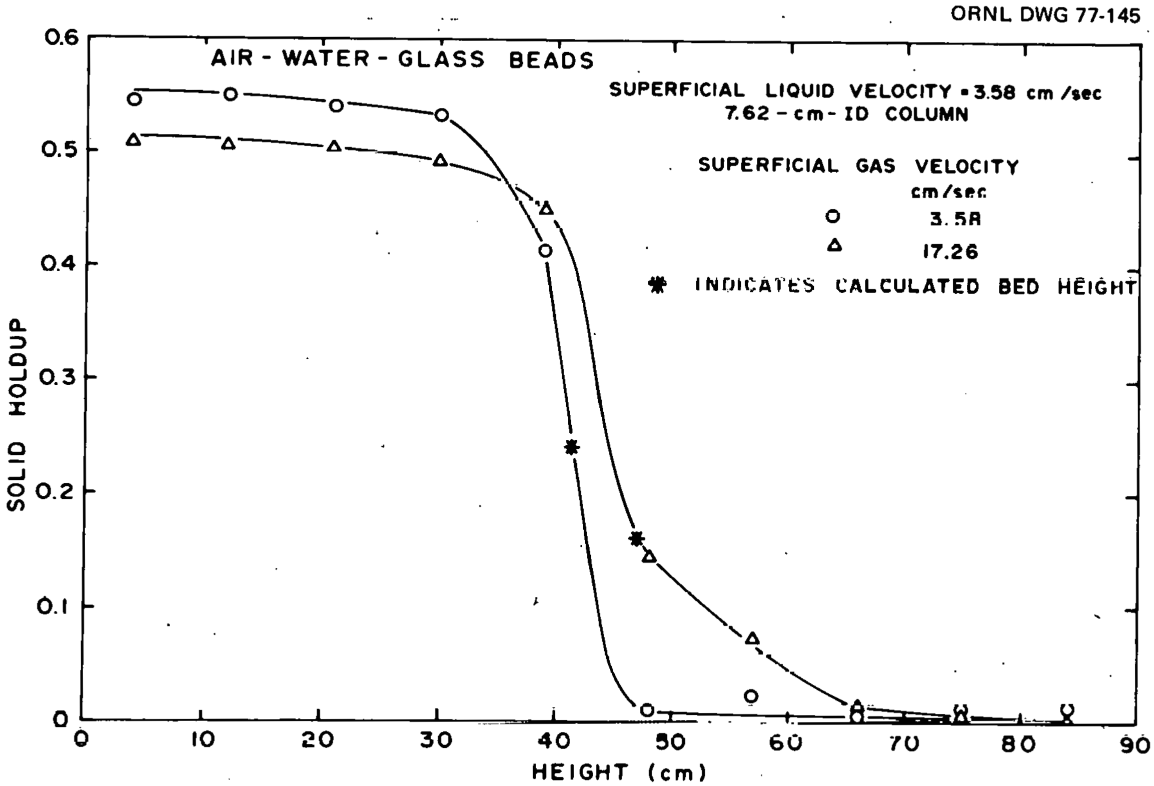

Figure 29. Effect of gas velocity on the axial variaticn in the solid phase holdup.

higher gas rates often employed by such units could still cause the transition regions to remain a significant fraction of the total bed height.

Discussion of Error

Four runs were performed using the 4.6-mm-diam glass beads in the 7.62-cm-ID column under identical conditions (i.e., gas and liquid flow rates and initial bed heights). Runs G45A13, G46A13, G47A13, and G48A13 were made with no air flow and with initial bed heights of 36 cm. Although the systems consisted of only two phases, it is felt that the errors associated with measuring bed heights and pressure drops and calculating bed heights and holdups are substantially equivalent to those associated with a three-phase system.

At a defined liquid velocity, the pressure and conductivity gradients were measured as described earlier in the section on "Experimental Procedure" (see page 35). The bed height and bed pressure drop were calculated from these data. Then the overall phase holdups were calculated based on either the conductivity method or the pressure gradient method. Finally, the phase holdups were calculated as a function of column position.

Table 6 shows the results obtained in the four runs, which were made with a liquid velocity of 8.35 cm/sec. An average and a standard deviation can be calculated for each variable at this liquid velocity. By using the Student's t

Table 6. Calculated values for four identical runs[a]

Parameter	Run G45A13	Run G46A13	Run G47A13	Run G48A13
Bed height, cm	53.7	52.1	52.2	52.6
Δh_{Bed}, cm water	27.44	28.37	28.56	28.60
$\bar{\varepsilon}_{L,C}$	0.649	0.647	0.647	0.643
$\bar{\varepsilon}_{S,C}$	0.442	0.442	0.442	0.442
$\bar{\varepsilon}_{L,\Delta P}$	0.578	0.548	0.546	0.548
$\bar{\varepsilon}_{S,\Delta P}$	0.431	0.444	0.443	0.443

[a]Conditions for each run: U_L = 8.35 cm/sec; U_G = 0

distribution and a given confidence level, a confidence interval about the mean can be found. For a confidence level of 95%, the average value and its confidence interval for each variable shown in Table 6 are given below:

$$H = 52.6 \pm 1.22, \qquad \bar{\varepsilon}_{S,C} = 0.442 \pm 0,$$

$$\Delta h_{Bed} = 28.24 \pm 0.886, \qquad \bar{\varepsilon}_{L,\Delta P} = 0.555 \pm 0.0244,$$

$$\bar{\varepsilon}_{L,C} = 0.647 \pm 0.0040, \qquad \bar{\varepsilon}_{S,\Delta P} = 0.440 \pm 0.0098.$$

These results are typical of all of those found at each of the six liquid velocities used in these runs.

Taking the average of a variable at each liquid velocity, an overall standard deviation can be found for the variable based on its values at all of the liquid velocities for the four runs. The confidence interval for each variable and a confidence interval percentage based on an average value for the entire set of runs are shown in Table 7 for a confidence level of 95%.

The confidence intervals shown in Table 7, which are based on all six liquid velocities used in the four runs for a total of 24 points, are lower than those calculated at a single liquid velocity of 8.35 cm/sec, which are based only on a total of four points. Regardless of the method of calculation of the confidence interval, it is apparent that the agreement between the four runs was quite good and that each variable could be determined with a small confidence interval at a high degree of certainty.

Table 7. Confidence intervals of calculated values for four identical runs

Variable	Confidence interval	Percent confidence interval	Average value of variable used as basis
H	0.18	0.4	47
Δh_{Bed}	0.260	1.2	22
$\bar{\varepsilon}_{L,C}$	0.0024	0.4	0.60
$\bar{\bar{\varepsilon}}_{S,C}$	0.0019	0.4	0.48
$\bar{\varepsilon}_{L,\Delta P}$	0.0035	0.7	0.52
$\bar{\varepsilon}_{S,\Delta P}$	0.0016	0.3	0.48

CHAPTER 6

CORRELATION OF RESULTS

The results shown in the previous chapter for minimum fluidization velocities, overall phase holdups, and local phase holdups were correlated with the physical parameters of the systems studied by using multiple linear regression. Dimensional correlations were first tried, followed by dimensionless correlations whenever possible. The predictive equations presented in this chapter represent the best correlations of the many that were attempted.

Minimum Fluidization

The minimum liquid fluidization velocities shown in Fig. 4 and Figs. 7-9 (see pp. 30, 39, 40, and 42) were correlated with the system parameters and resulted in the following dimensionless correlation:

$$Re_{mf} = a\ Ar^{b}\ Fr_{G}^{\ c} \quad , \tag{28}$$

where the constants and their 95% confidence limits are:

a = $5.131 \times 10^{-3} \pm 0.002$,

b = 0.661 ± 0.034,

c = -0.120 ± 0.025.

Equation (28) had a correlation coefficient of 0.94 and an F-value of 478, using a total of 135 points, and is shown in Figs. 30-32 as predicted-versus-experimental MF curves.

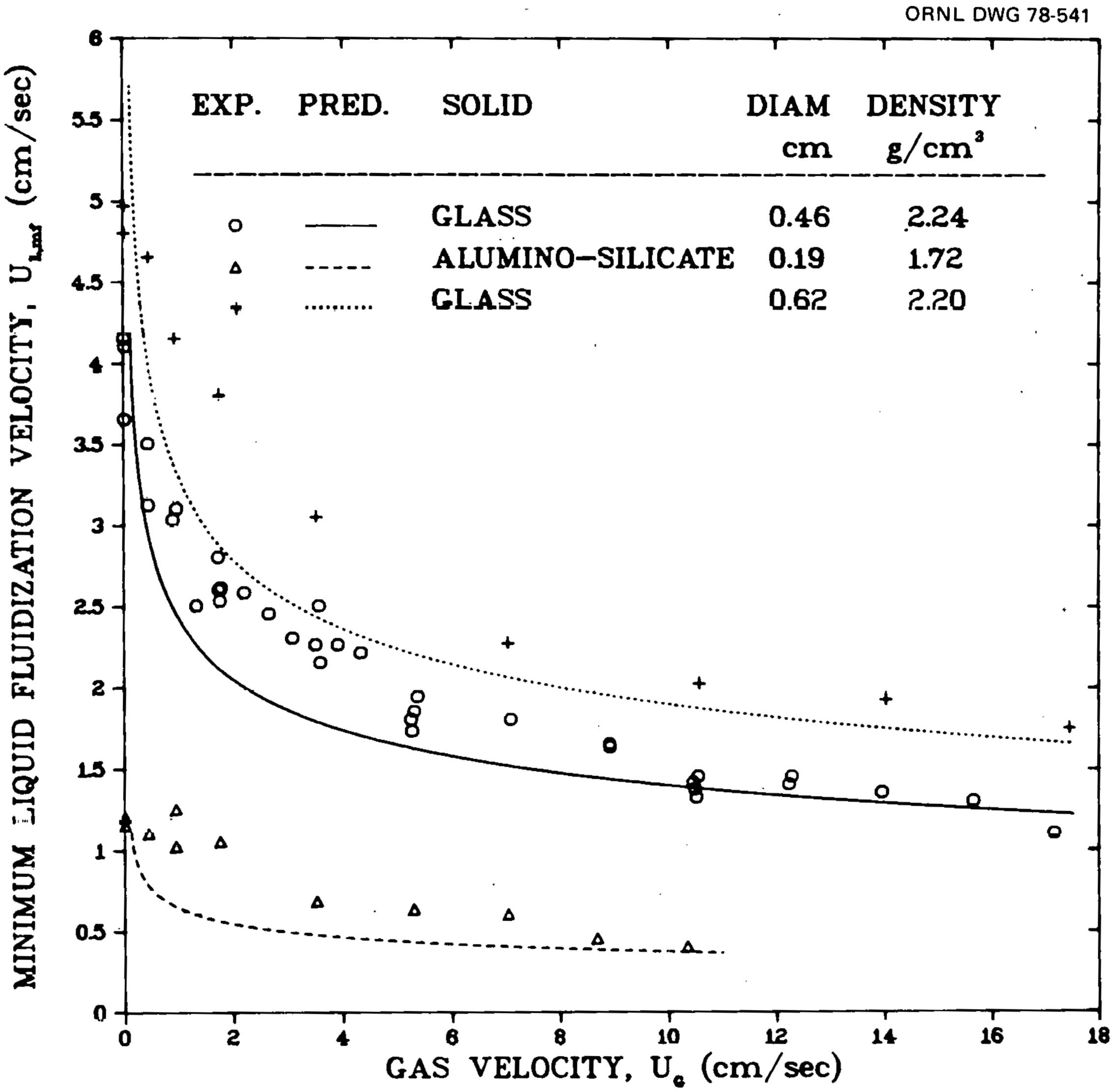

Figure 30. Predicted versus experimental minimum fluidization curves for the glass and alumino-silicate beads.

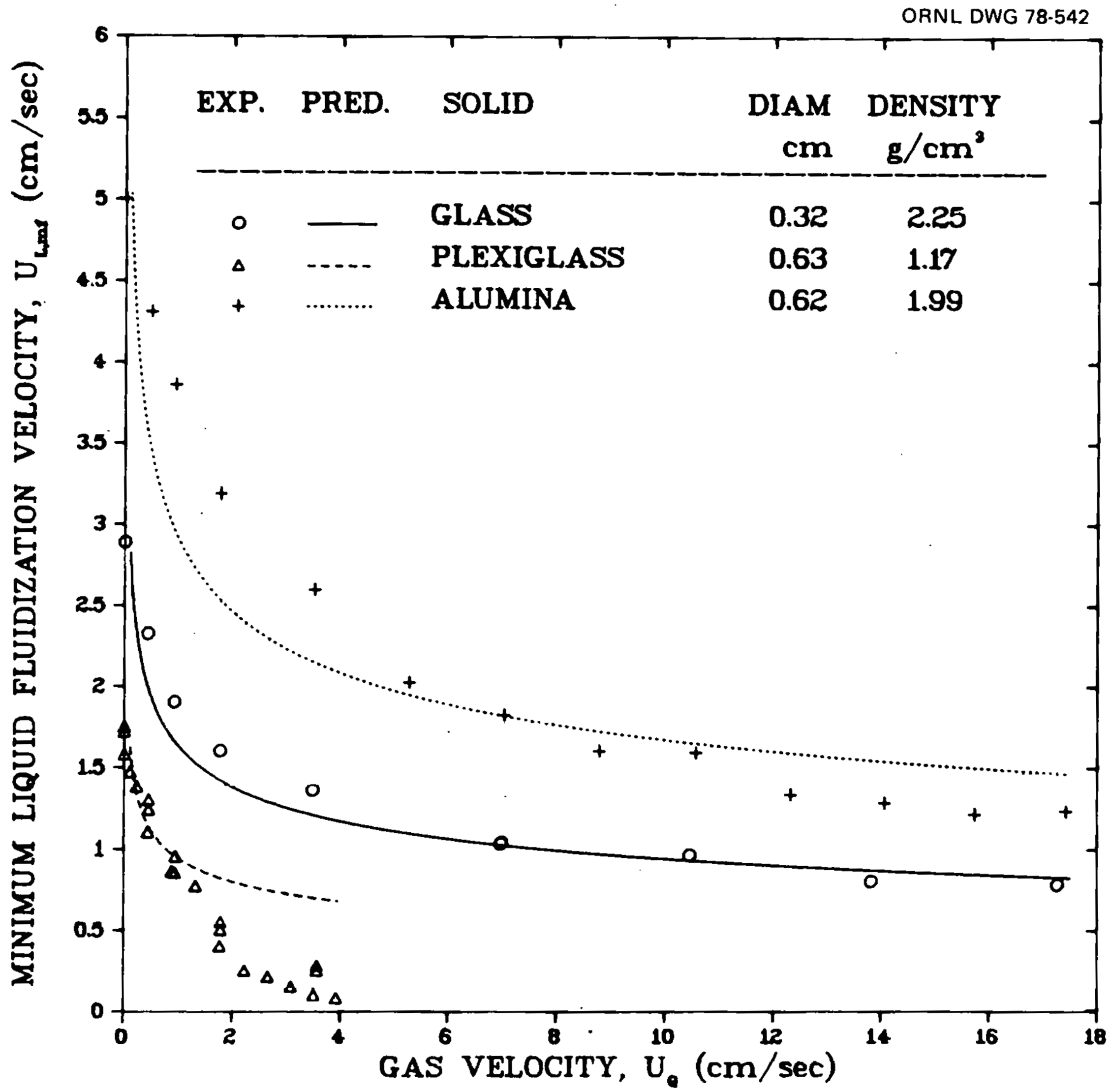

Figure 31. Predicted versus experimental minimum fluidization curves for the glass, plexiglass, and alumina beads.

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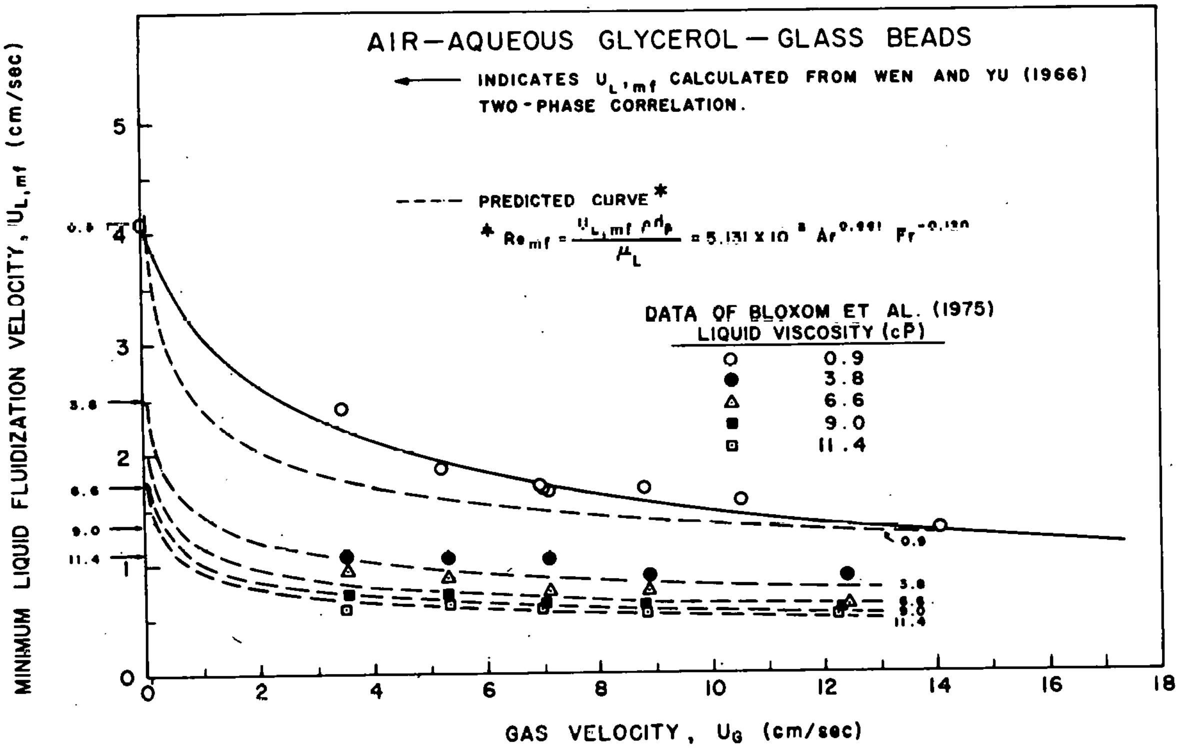

Figure 32. Effect of liquid viscosity on the predicted versus experimental minimum fluidization curves.

It should be noted that Eq. (28) is not valid for a zero gas rate where it would predict a liquid MF velocity of zero. However, Figs. 30-32 show that the MF curves can be reliably extrapolated to zero gas flow rate if a predicted MF curve is generated starting with gas velocities just greater than zero. Alternatively, at zero gas velocity, the two-phase correlation of Wen and Yu [1966], Eq. (26), can be used to predict the MF velocity.

Overall Phase Holdups

The overall solid holdups from this study were combined with 1355 points from the literature [Bhatia and Epstein, 1974; Bruce and Revel-Chion, 1974; Dakshinamurty et al., 1971; Efremov and Vakhrushev, 1970; Kim et al., 1975; Michelsen and Ostergaard, 1970; Ostergaard, 1965; Ostergaard and Michelsen, 1968; Ostergaard and Thiesen, 1966; Rigby and Capes, 1970] to yield the following dimensional correlation:

$$1 - \bar{\varepsilon}_S = a\, U_L^{\,b}\, U_G^{\,c}\, (\rho_S - \rho_L)^d\, d_p^{\,e}\, \mu_L^{\,f}\, D_c^{\,g} \quad , \qquad (29)$$

where the constants and their 95% confidence limits are:

a = 0.371 ± 0.013, e = -0.268 ± 0.008,

b = 0.271 ± 0.008, f = 0.055 ± 0.006,

c = 0.041 ± 0.004, g = -0.033 ± 0.010,

d = -0.316 ± 0.008,

and centimeter-gram-second (CGS) units are used for each parameter. Equation (29), shown as a parity plot in Fig. 33, has a correlation coefficient of 0.87 and an F-value of

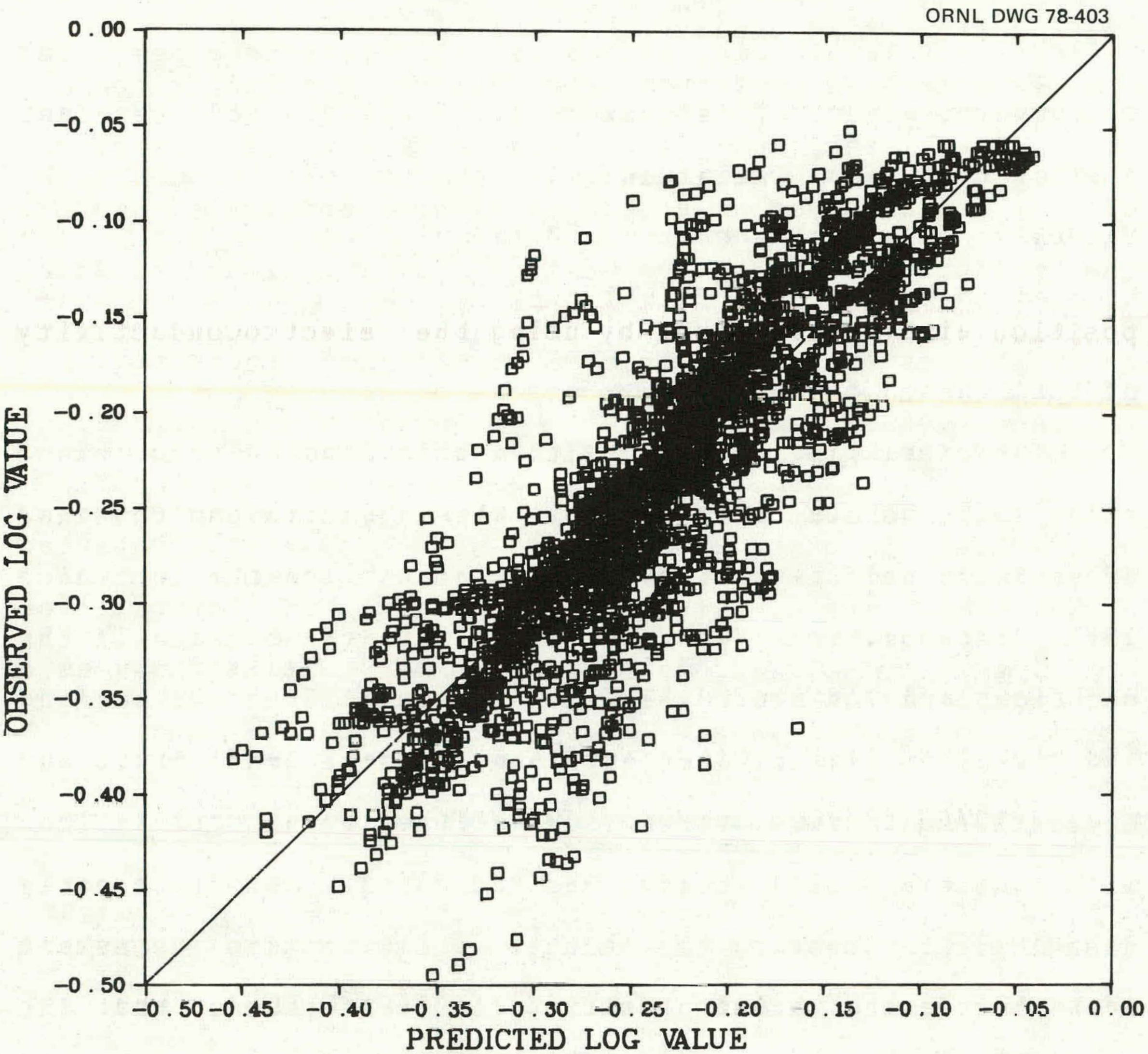

Figure 33. Predicted versus experimental overall solid holdup values.

1178; it was based on a total of 2381 points.

Combining the gas holdup with 169 points available from the literature [Bhatia and Estein, 1974; Efremov and Vakhrushev, 1970; Kim et al., 1975; Michelsen and Ostergaard, 1970; Ostergaard and Michelsen, 1968] resulted in the following correlation:

$$\overline{\varepsilon}_G = a\, U_G^{\,b}\, d_p^{\,c}\, D_c^{\,d} \quad , \tag{30}$$

where the constants and their 95% confidence limits are:

$a = 0.048 \pm 0.008$, $c = 0.168 \pm 0.046$,

$b = 0.720 \pm 0.021$, $d = -0.125 \pm 0.067$,

and, again, CGS units are used for each parameter. Equation (30), based on a total of 913 points, had a correlation coefficient of 0.93 and an F-value of 1793; it is shown as a parity plot in Fig. 34.

Local Holdups

Figures 25-29 (see pp. 68, 70, 71, 72, and 74) clearly indicated that each of the holdups is approximately constant in two regions: (a) the lower portion of the bed, and (b) the gas-liquid region above the bed. The transition region between these two extremes was seen to depend on the gas velocity and the physical characteristics of the solid particles. An inflection point was observed on each curve with a spread about that point proportional to the width of the transition region. If each curve were differentiated, these two parameters would correspond to the mean and the

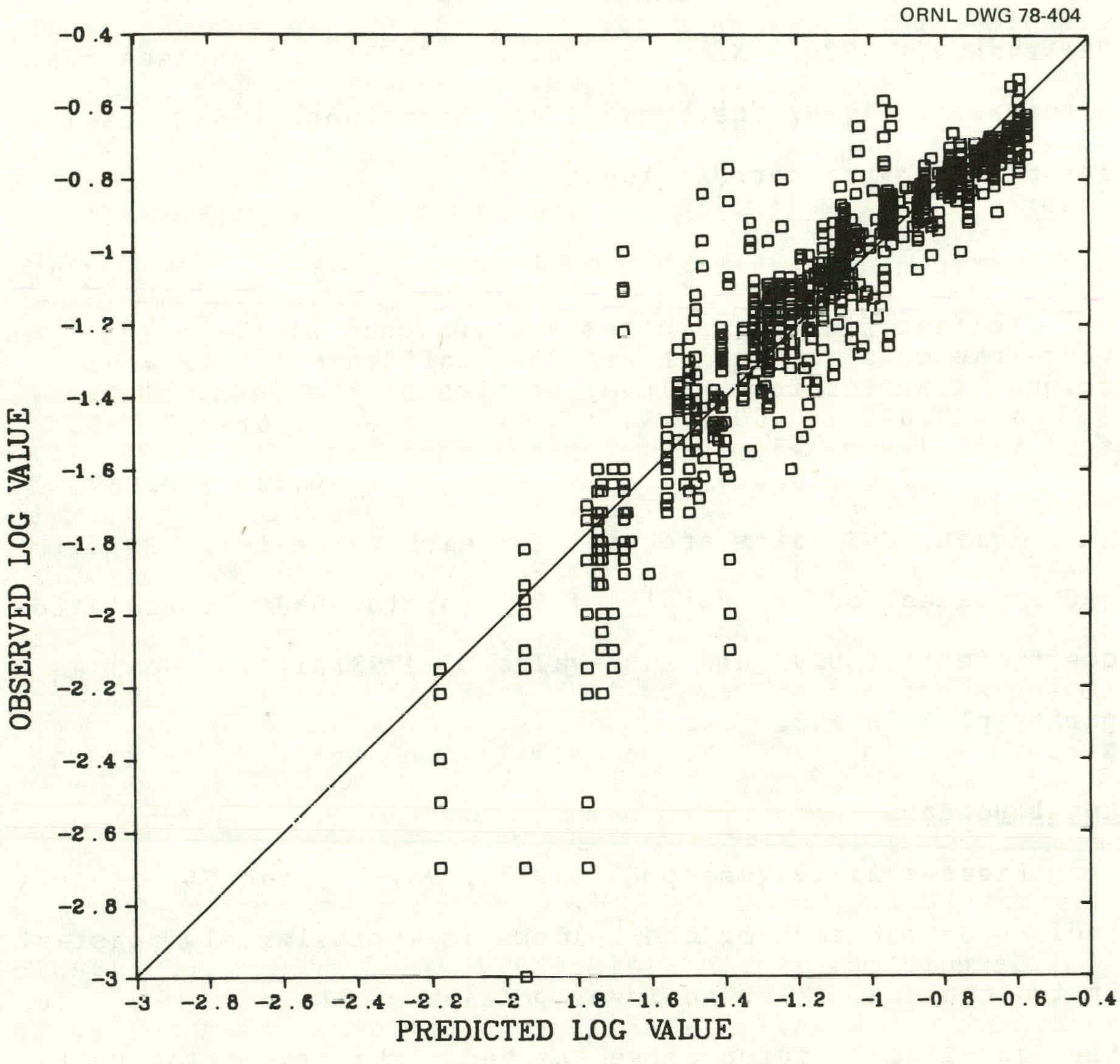

Figure 34. Predicted versus experimental overall gas holdup values.

standard deviation of the normalized Gaussian curves. The error function was used to fit the gas and solid holdup curves, and the liquid holdup curve was determined as the residual of Eq. (1). Use of the error function was essentially equivalent to use of the probability integral since the two are related by the following:

$$\mathrm{erf}(x) = 2\Phi\ (\sqrt{2}\ x) \quad . \tag{31}$$

Thus, the gas holdup curves were fitted by the following:

$$\varepsilon_G = [(P_G - 1)/-2]\varepsilon_G''' + [(P_G + 1)/2]\varepsilon_G'' \quad , \tag{32}$$

where

$$P_G = \mathrm{erf}\ [(h - I_G)/\sigma_G] \quad . \tag{33}$$

The solid holdup was fitted in a similar manner using the error function and the knowledge that the solid holdup in the gas-liquid region of the column is zero:

$$\varepsilon_S = [(P_S + 1)/2]\varepsilon_S''' \quad , \tag{34}$$

where

$$P_S = -\mathrm{erf}\ [(h - I_S)/\sigma_S] \quad , \tag{35}$$

and

I = inflection point in local holdup-versus-height curve,

σ = standard deviation in local holdup-versus-height curve.

The liquid holdup at each point was obtained from the residual of Eq. (1).

Thus, knowledge of seven parameters--ε_G''', ε_G'', ε_S''', σ_S, σ_G, I_S, and I_G--allows one to construct each of the curves showing phase holdup versus axial column position. An example of such a fit in shown in Fig. 35. For the system shown, the seven parameters are:

$\varepsilon_G''' = 0.072,$	$I_G = 45.7$ cm,
$\varepsilon_G'' = 0.129,$	$\sigma_S = 2.83$ cm,
$\varepsilon_S''' = 0.511,$	$\sigma_G = 2.64$ cm.
$I_S = 44.8$ cm,	

Treatment of the experimental data in this way and correlation of the seven parameters with fluid and solid properties and experimental conditions using least-squares multiple linear regression analysis resulted in a predictive equation for each parameter.

The gas holdup in the three-phase region of the column was successfully correlated by the following:

$$\varepsilon_G''' = a\,[U_G^5(\rho_S-\rho_L)/U_L\, g\, \sigma_{LV}]^b \quad , \qquad (36)$$

where the constants and their 95% confidence limits are:

$a = 0.159 \pm 0.008,$

$b = 0.150 \pm 0.006.$

Equation (36), shown as a parity plot in Fig. 36, had a

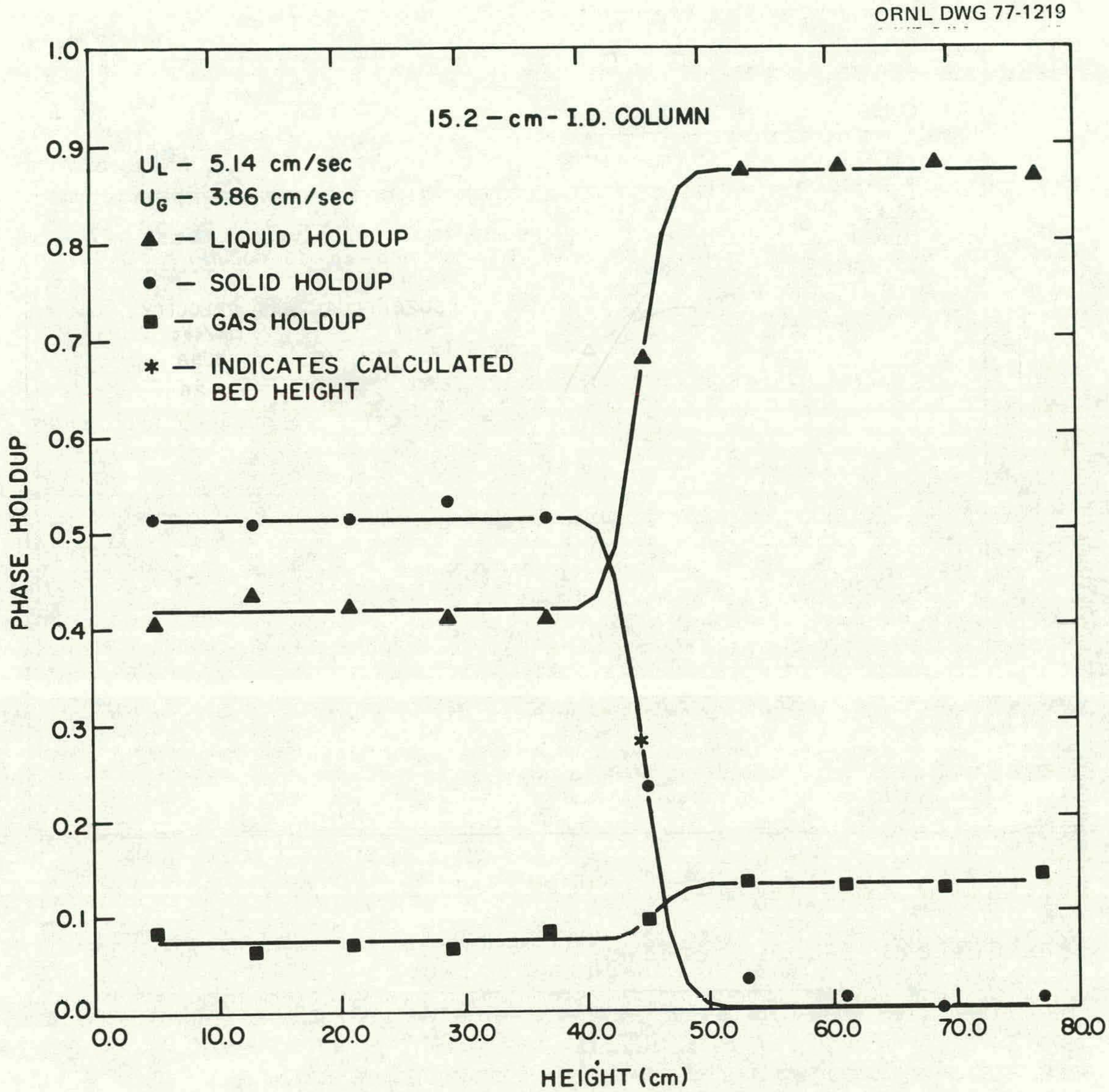

Figure 35. Fit of local holdup profiles for the air-water-glass beads.

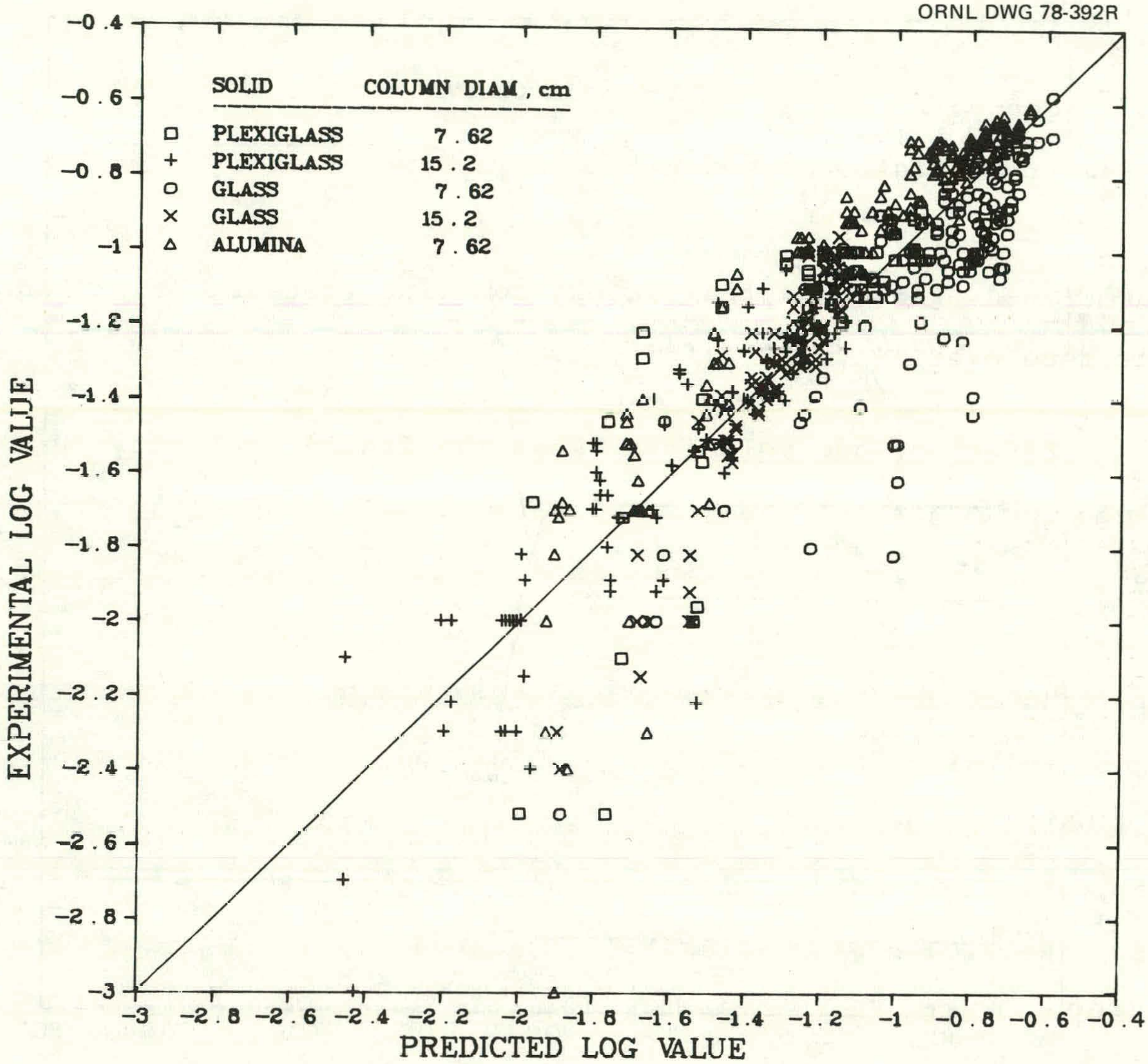

Figure 36. Predicted versus experimental values of the gas holdup in the three-phase region.

correlation coefficient of 0.89 and an F-value of 2155, and was based on a total of 555 points.

The gas holdup in the two-phase portion of the column can be predicted using the following dimensionless correlation:

$$\varepsilon_G'' = a\,[U_G^{\,4}(\rho_S-\rho_L)/g\,\sigma_{LV}]^b \quad , \tag{37}$$

where the constants and their 95% confidence limits are:

a = 0.237 ± 0.010,

b = 0.185 ± 0.006.

Equation (37) had a correlation coefficient of 0.93 and an F-value of 4266. The 634 points on which it was based are shown as a parity plot in Fig. 37.

The solid holdup in the bed was correlated as the bed porosity as follows:

$$1-\varepsilon_S''' = a\,Ar^b\,Re_L^{\,c}\,(H/H_o)^d \quad , \tag{38}$$

where the constants and their 95% confidence limits are:

a = 1.990 ± 0.273, c = 0.197 ± 0.011,

b = -0.178 ± 0.012, d = 0.298 ± 0.018.

A parity plot of Eq. (38) is shown in Fig. 38. The equation had a correlation coefficient of 0.95 and an F-value of 2529, and was based on 762 points.

The expanded bed height used in Eq. (38) was also correlated with the system properties and resulted in the following:

$$H/H_o = a\,Fr_G^{\,b}\,Re_L^{\,c}\,Ar^d\,[(\rho_S-\rho_L)/\rho_L]^e \quad , \tag{39}$$

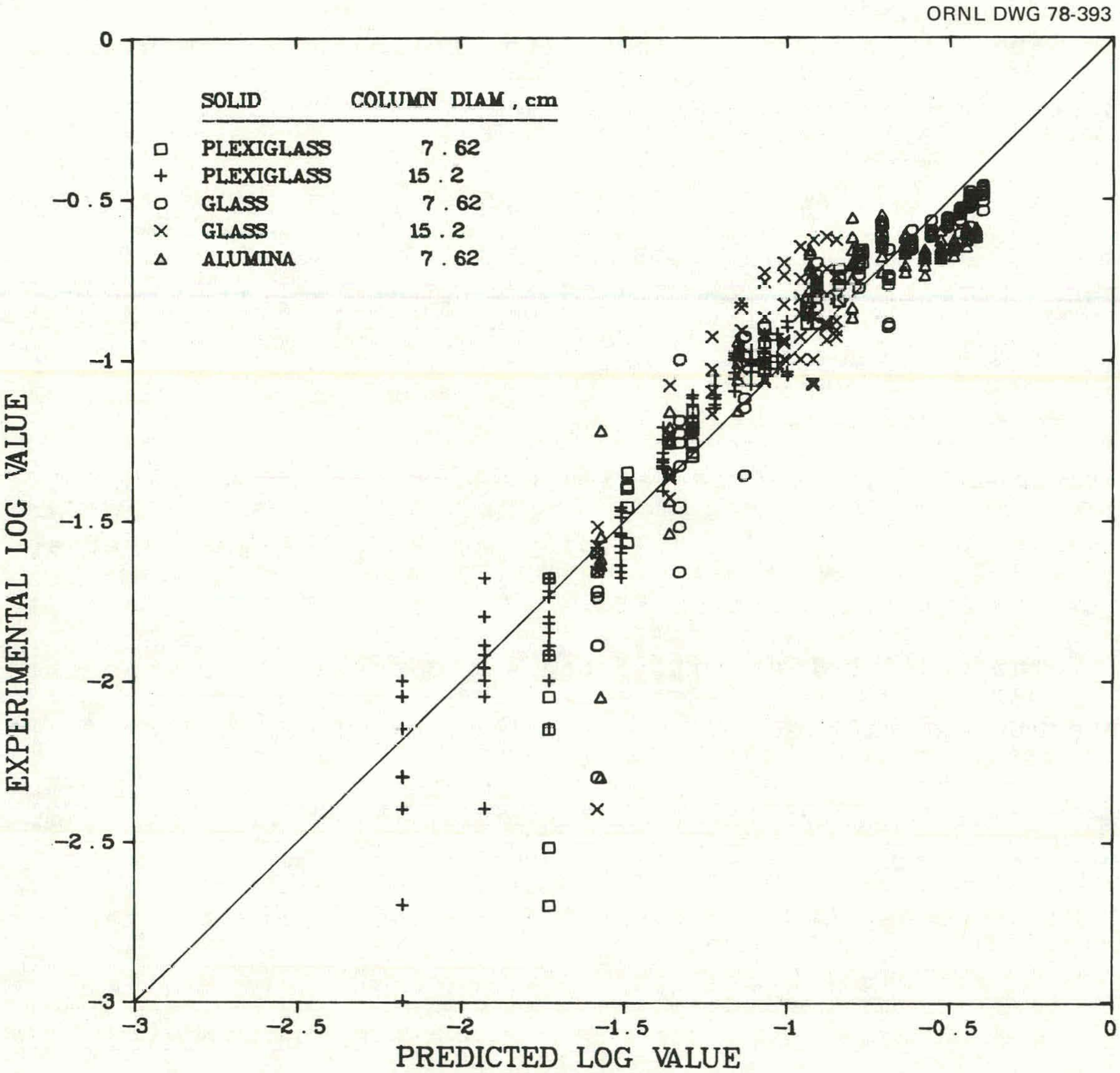

Figure 37. Predicted versus experimental values of the gas holdup in the two-phase region.

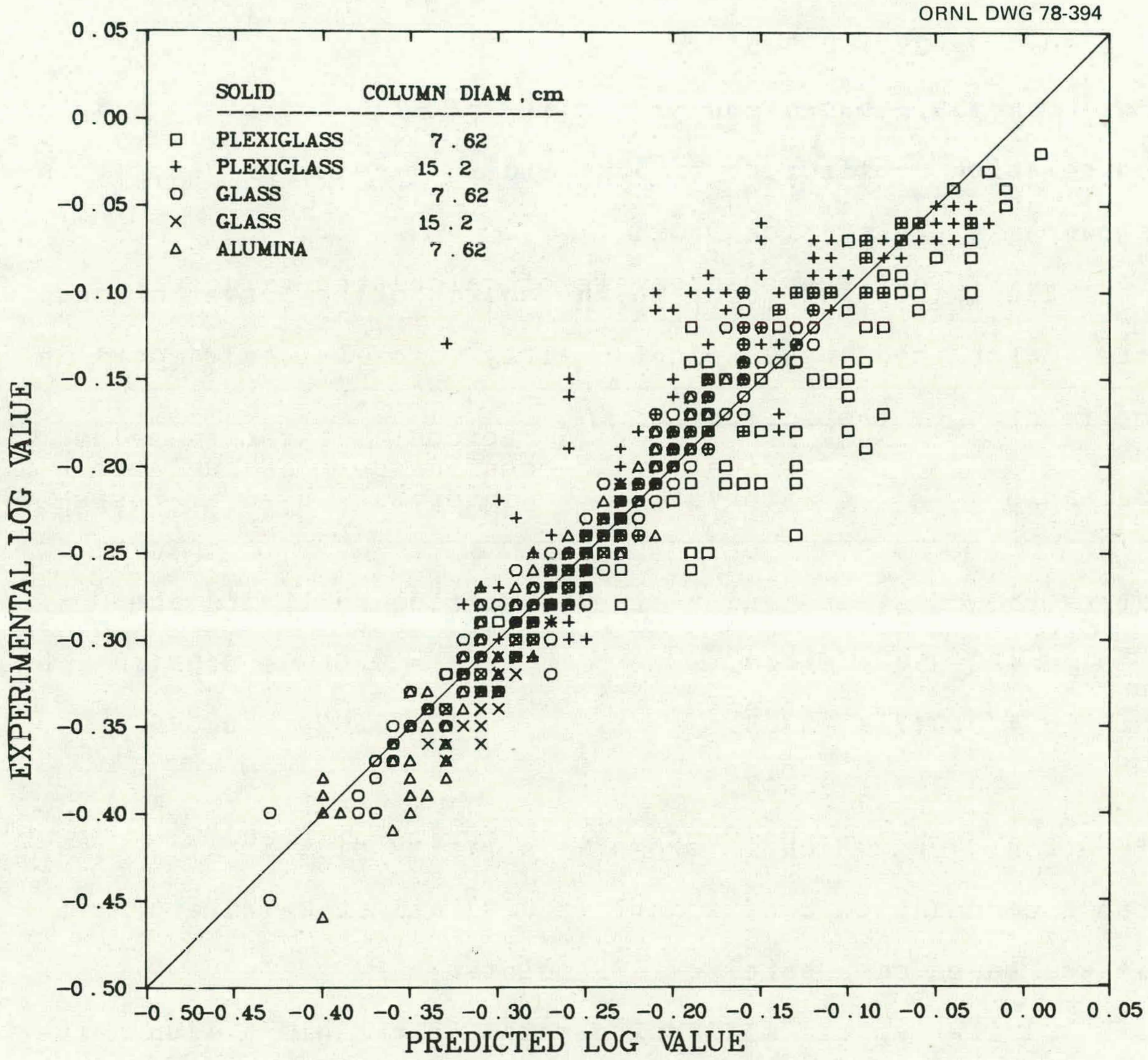

Figure 38. Predicted versus experimental values of the solid holdup in the three-phase region.

where the constants and their 95% confidence limits are:

$a = 10.483 \pm 5.7$, $d = -0.295 \pm 0.039$,

$b = 0.069 \pm 0.005$, $e = -0.305 \pm 0.027$.

$c = 0.429 \pm 0.025$,

Equation (39), based on a total of 706 points, had a correlation coefficient of 0.90 and an F-value of 762; it is shown as a parity plot in Fig. 39.

The inflection point in the solid holdup curve followed the calculated bed height fairly closely and could be correlated by the following:

$$I_S = a\, U_G^{\,b}\, U_L^{\,c}\, D_c^{\,d}\, H^e \quad , \tag{40}$$

where the constants and their 95% confidence limits are:

$a = 2.354 \pm 0.440$, $d = 0.061 \pm 0.031$,

$b = 0.017 \pm 0.008$, $e = 0.628 \pm 0.045$.

$c = 0.247 \pm 0.017$,

Equation (40), which is shown as a parity plot in Fig. 40, had a correlation coefficient of 0.92 and an F-value of 875; it was based on a total of 689 points.

Similarly, the inflection point in the gas holdup curve followed that in the solid holdup curve, yielding the following correlation:

$$I_G/H_o = a\, (\rho_S-\rho_L)^b\, d_p^{\,c}\, D_c^{\,d}\, I_S^{\,e} \quad , \tag{41}$$

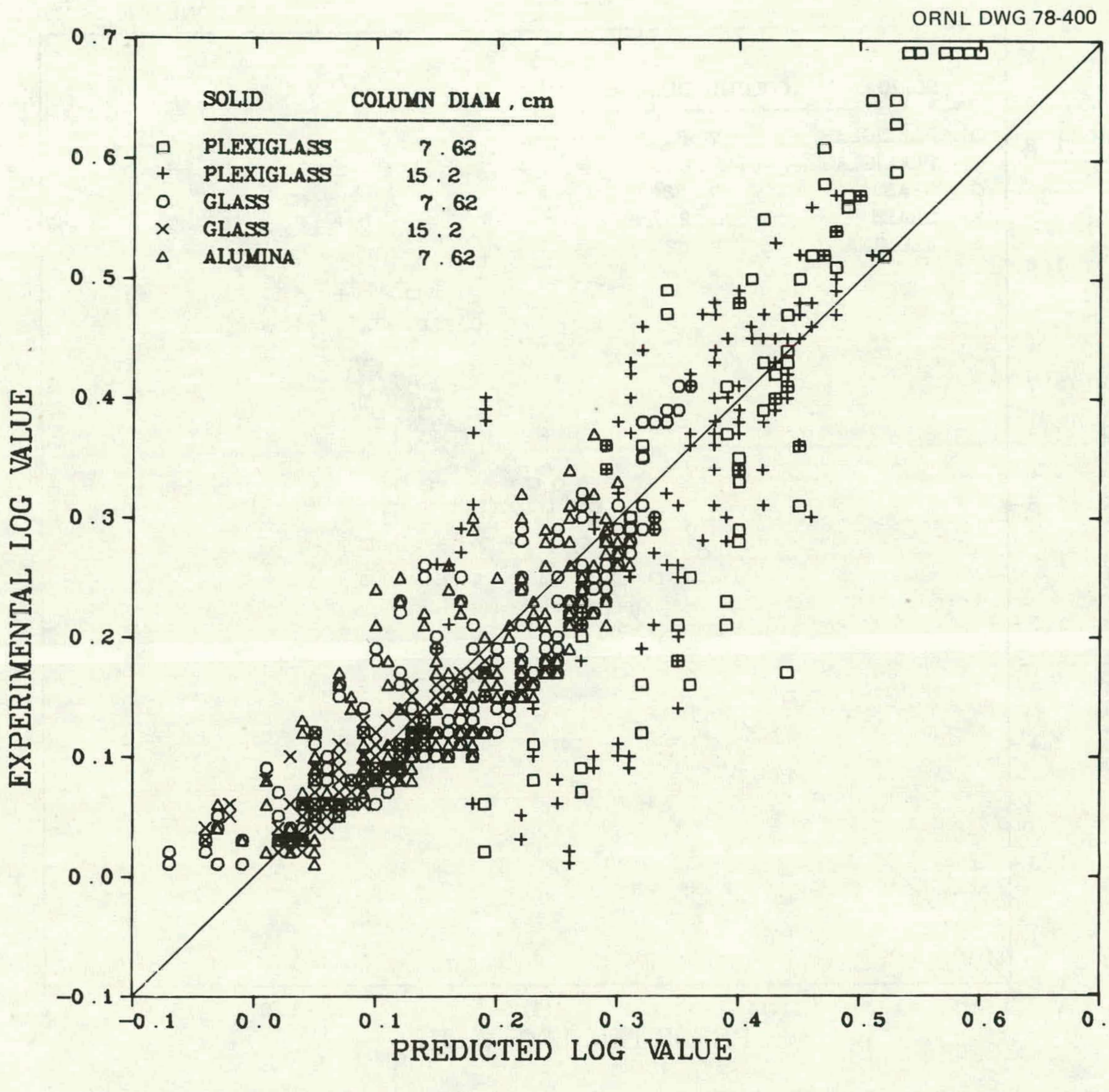

Figure 39. Predicted versus experimental expanded bed height values.

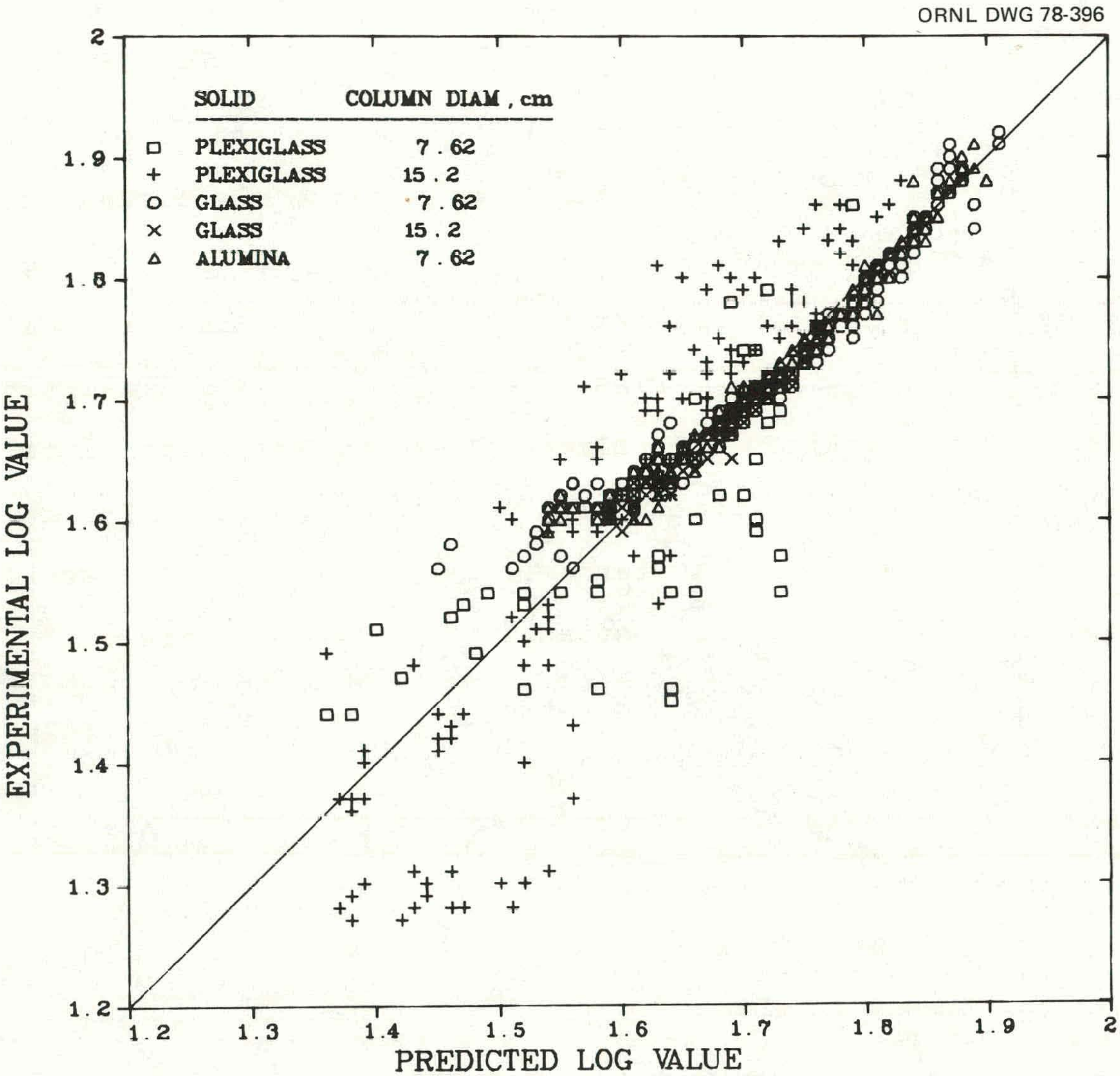

Figure 40. Predicted versus experimental values of the inflection points in the solid holdup curve.

where the constants and their 95% confidence limits are:

$a = 0.027 \pm 0.006$, $d = 0.170 \pm 0.045$,

$b = -0.250 \pm 0.026$, $e = 0.875 \pm 0.049$.

$c = -0.145 \pm 0.123$,

Equation (41), based on a total of 635 points and shown in Fig. 41 as a parity plot, had a correlation coefficient of 0.85 and an F-value of 408.

The standard deviations in the local holdup-versus-height curves were the most difficult parameters to measure (a slight variation in the local holdup affected the standard deviation considerably) and hence to correlate. The standard deviation in the solid phase holdup curve can be estimated from the following:

$$\sigma_S/H_o = a\, C_D^{\,b}\, Fr_H^{\,c} \quad , \tag{42}$$

where the constants and their 95% confidence limits are:

$a = 5.510 \times 10^{-6} \pm 3.3 \times 10^{-6}$,

$b = -1.015 \pm 0.052$,

$c = -0.840 \pm 0.048$,

and

$$C_D = (\rho_S - \rho_L) d_p / \rho_L\, U_G^{\,2} \quad ,$$

$$Fr_H = U_G^{\,2}/gH \quad .$$

Equation (42), shown in Fig. 42 as a parity plot, had a correlation coefficient of 0.84 and an F-value of 752; it was based on a total of 635 points.

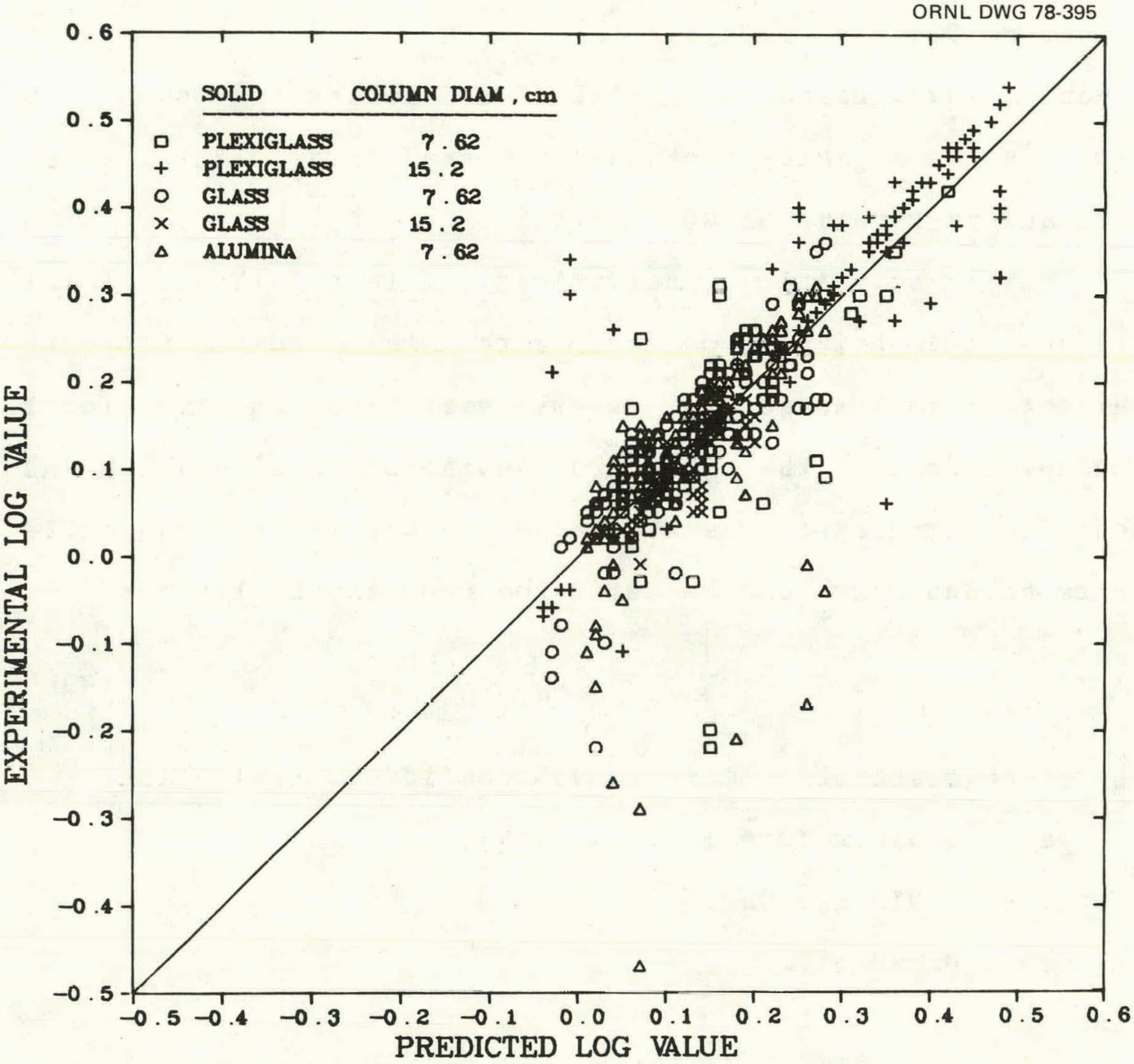

Figure 41. Predicted versus experimental values of the inflection points in the gas holdup curve.

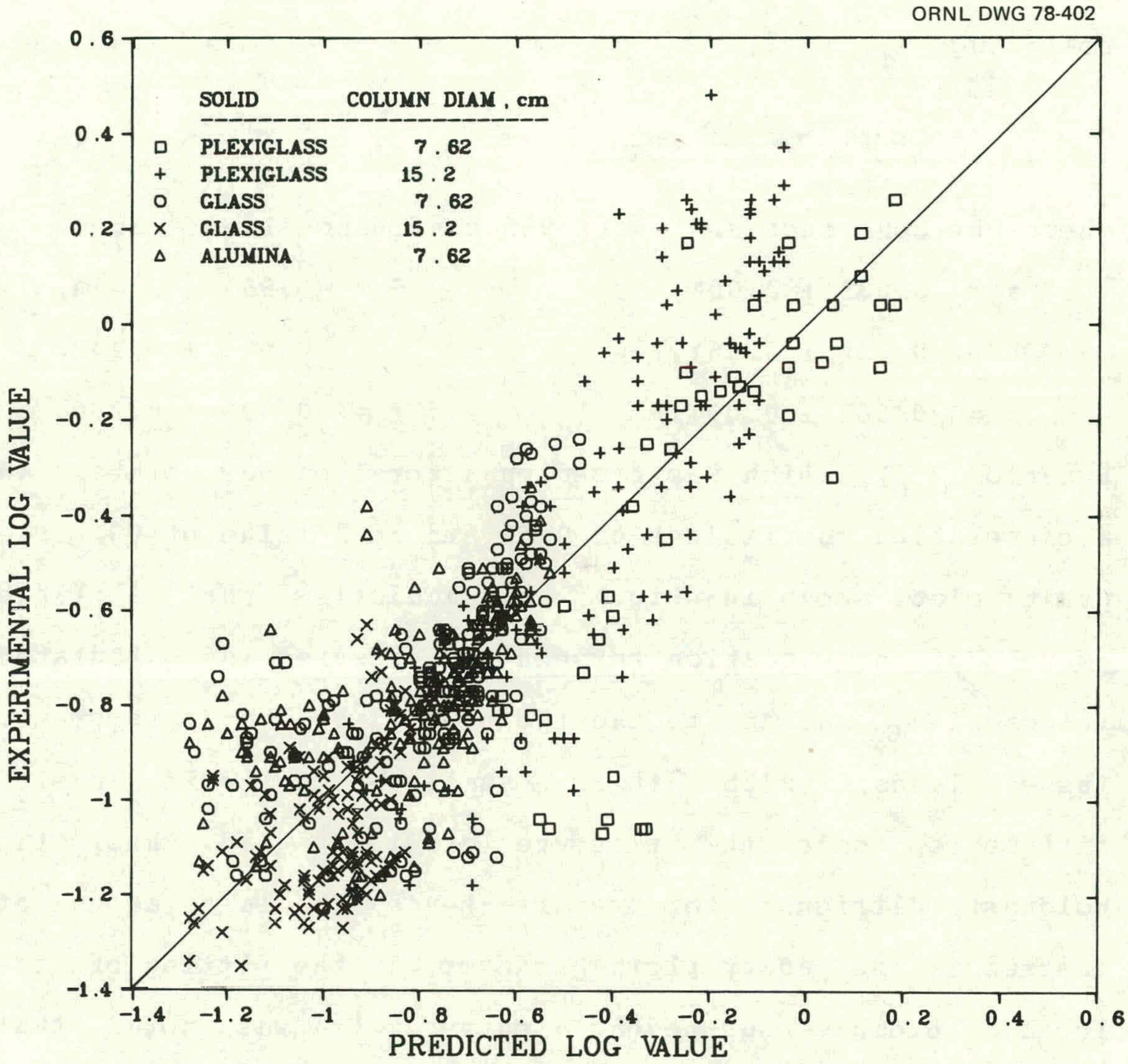

Figure 42. Predicted versus experimental values of the standard deviations in the solid holdup curve.

The standard deviation in the gas phase holdup curve, unfortunately, was even more difficult to correlate than σ_S. A very rough estimate of σ_G can be obtained from the following:

$$\sigma_G/H_o = a\,(\varepsilon_G'' - \varepsilon_G''')^b\,(\rho_S - \rho_L)^c\,d_p^{\,d}\,H^e\,\sigma_S^{\,f}\,, \tag{43}$$

where the constants and their 95% confidence limits are:

a = 0.005 ± 0.004,	d = −0.861 ± 0.461,
b = 0.132 ± 0.061,	e = 0.693 ± 0.242,
c = −0.362 ± 0.094,	f = 0.429 ± 0.090.

Equation (43), which was based on a total of 609 points, had a correlation coefficient of 0.66 and an F-value of 93. The parity plot, shown in Fig. 43, indicates that a large amount of the variation between the measured and calculated values of σ_G was due to the two plexiglass beads systems. These beads, with their small solid/liquid density difference, made the pressure gradient (and thus the holdups) difficult to measure--hence the large amount of scatter in the parity plot. However, in the fitting of the local holdup-versus-height curves, it was noted that smoother fits resulted when the gas and solid phase inflection points and standard deviations were similar. Therefore, it might be more appropriate if the inflection point and the standard deviation in the gas phase curve were estimated by equating them to the predicted solid phase values rather than by using Eqs. (41) and (43).

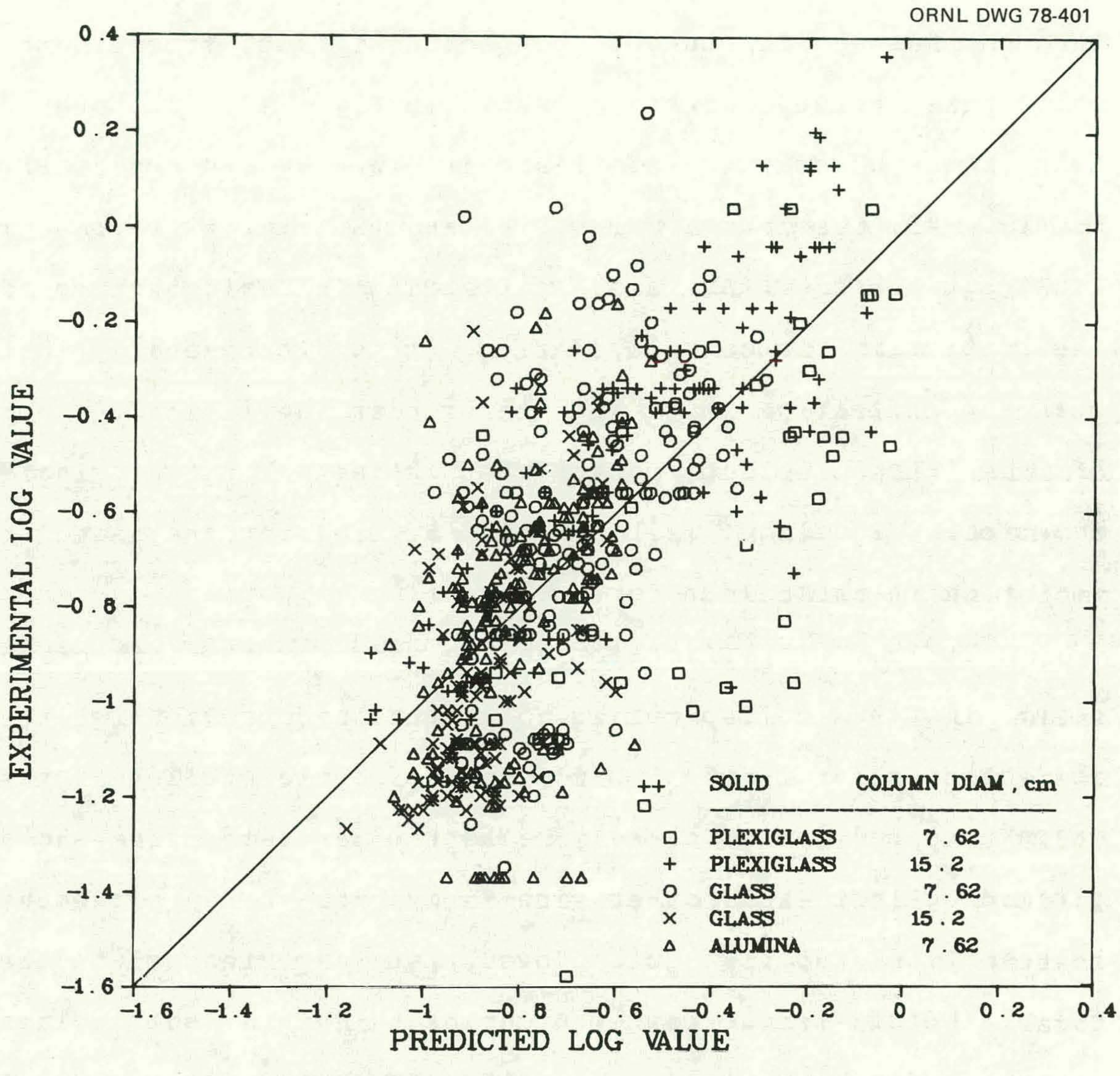

Figure 43. Predicted versus experimental values of the standard deviations in the gas holdup curve.

Figure 44 shows the inflection points in the gas phase holdup curves plotted against the solid phase holdup inflection points. Similarly, the standard deviations in the gas phase holdup curves are plotted against those in the solid phase holdup curves, as shown in Fig. 45. Although a fair amount of scatter is evident in Fig. 44 and especially in Fig. 45, the data in Figs. 41 and 43, which represent least-square fits, are also scattered. In fact, because of the scatter in the correlated fits, it is recommended that both the inflection point and the standard deviation of each of the three holdup curves be estimated by a single equation. Equation (42) should be used for the standard deviation in the holdup curves.

A further simplification can be made for the inflection point in the holdup curves. As mentioned previously, the inflection point in the solid holdup curve followed the calculated bed height closely. The two parameters are shown plotted against each other in Fig. 46. The agreement between the two is quite good, as expected, since the calculated bed height represents that height in the column of an equivalent homogeneous bed. Disagreements occurred chiefly in beds of plexiglass beads, particularly those that were highly expanded.

An example of an expanded bed of plexiglass beads is shown in Fig. 47. Under the set of conditions indicated, the concentration of solids decreased very gradually to zero, giving a solid phase inflection point of 36 cm.

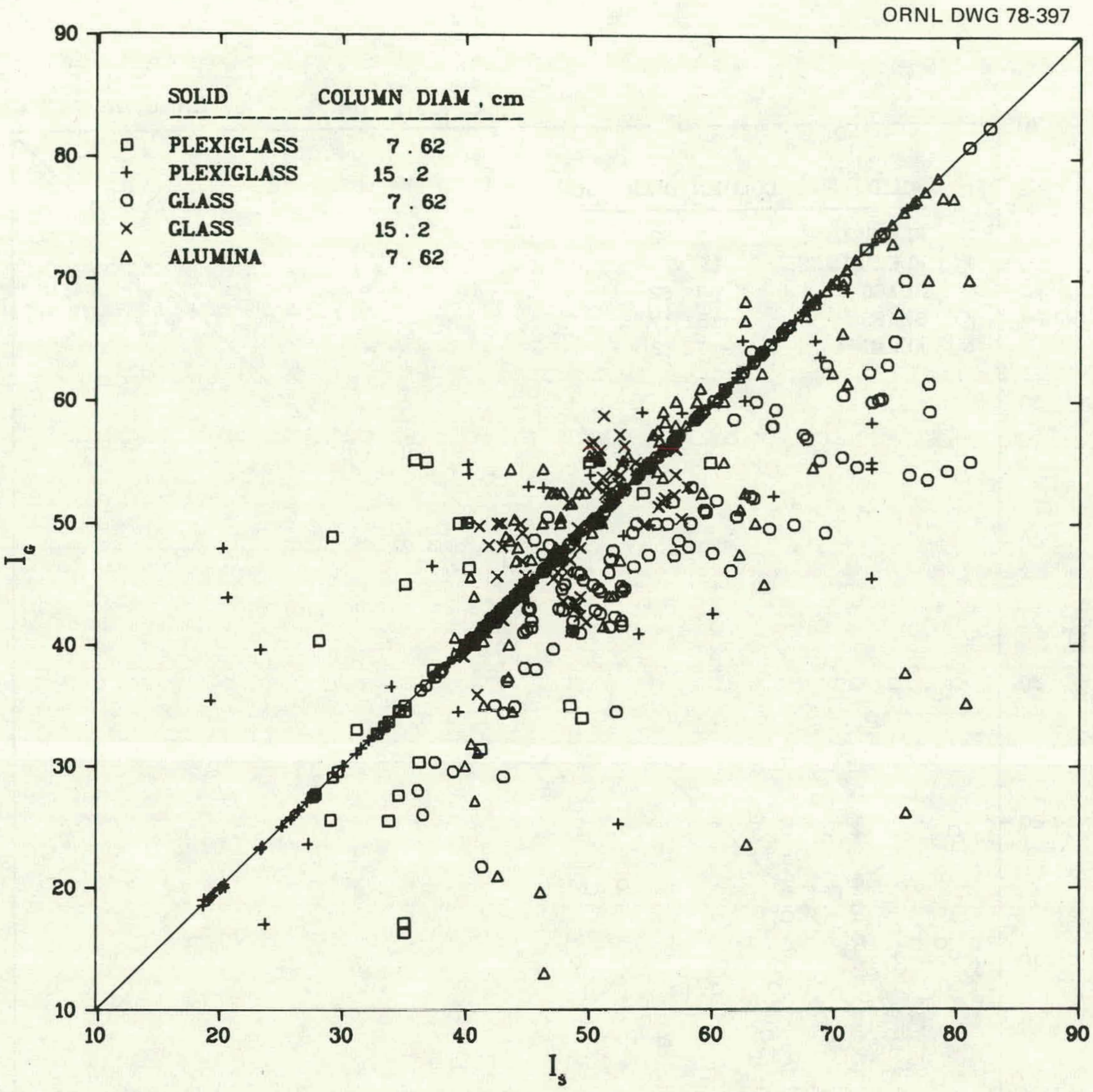

Figure 44. Gas-holdup-curve inflection points versus solid-holdup-curve inflection points.

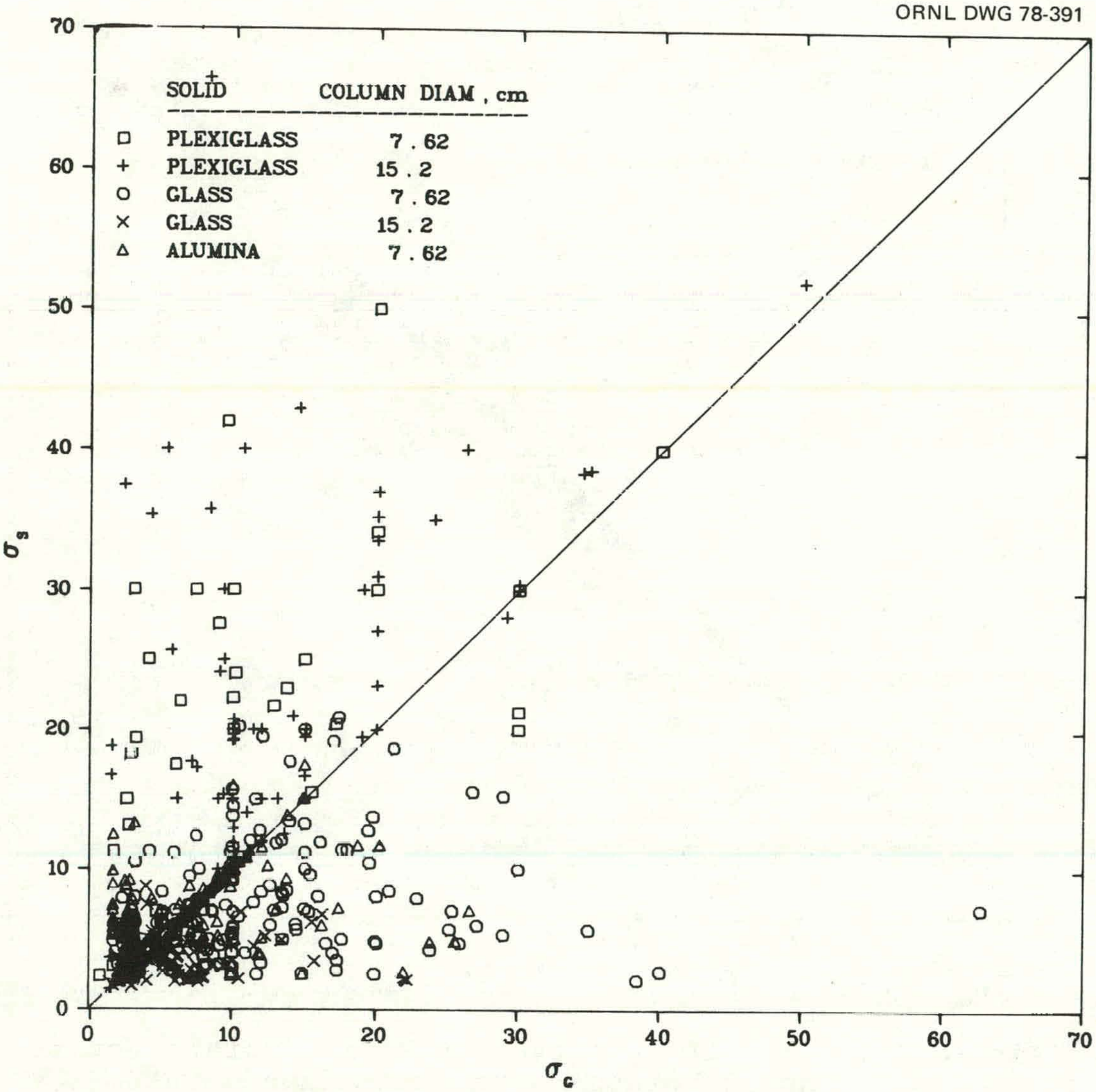

Figure 45. Standard deviations for the gas holdup curve versus those for the solid holdup curve.

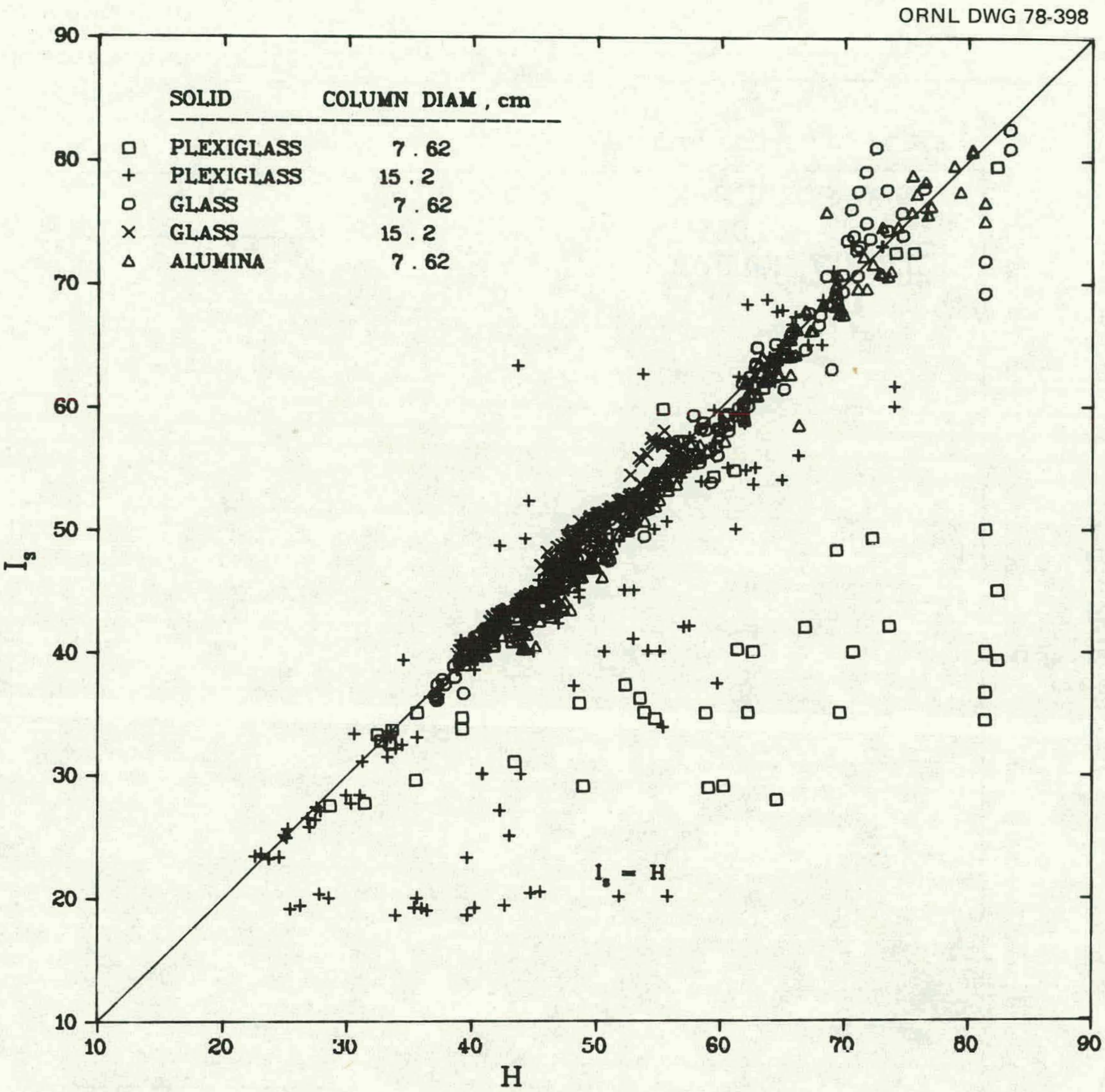

Figure 46. Inflection points in the solid holdup curve versus the calculated bed heights.

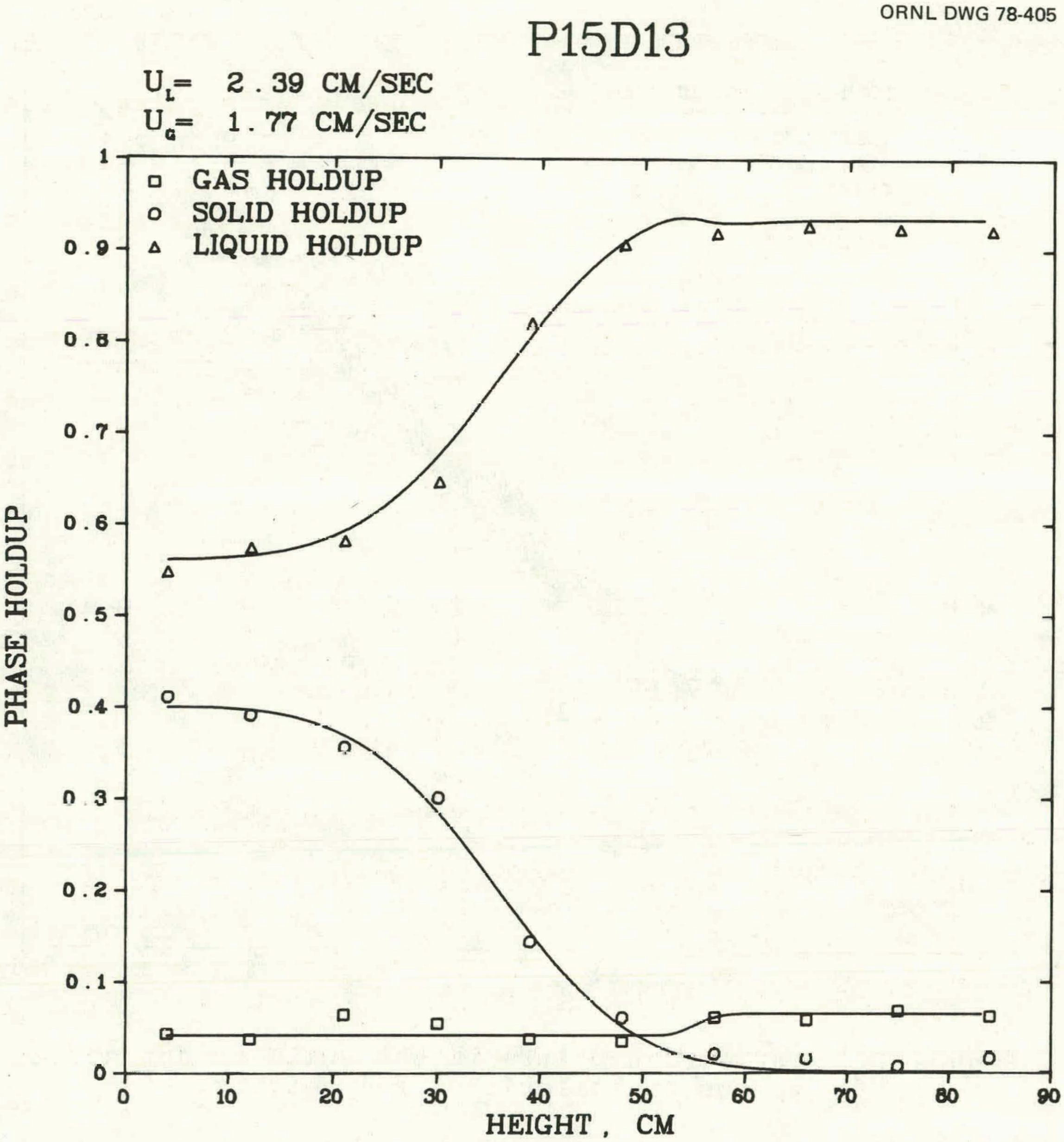

Figure 47. Axial variation of phase holdups in a bed of plexiglass beads.

However, the pressure gradient over the two- and three-phase regions yielded a calculated bed height of 49 cm. It has been mentioned several times that the low solid/liquid density difference of the plexiglass beads made calculation of the bed heights and pressure drops subject to larger potential errors than those associated with the other solids studied. Thus, with the possible exception of very low solid/liquid density difference systems, it is recommended that Eq. (39) be used to predict both the expanded bed heights and the inflection points in the three holdup curves.

In summary, then, it is recommended that the following dimensionless correlations be used to construct phase holdup versus column position curves: (a) Equations (36)-(38) for estimating the gas and solid phase holdups in the two- and three-phase regions, (b) Equation (39) for determining the inflection point in each of the three phase holdup curves; and (c) Equation (42) for calculating the standard deviation in each of the three phase holdup curves.

All of the parameters employed in these correlations [Eqs. (36)-(43)] are expressed in CGS units. The correlations were based on a varying number of total points, depending on how many of the points used were zero (i.e., ε_G''', ε_G'', σ_G, and I_G) and how many were associated with zero gas flow rates. Such points could not be logarithm transformed and hence could not be used in the multiple linear regression analysis. Also, a number of experimental conditions were used such that the bed height was above the highest manometer tap. The transition between the three- and two-phase regions could not be determined under such conditions; therefore, only the solid phase holdup was measured.

Care should be exercised when applying these correlations to systems with physical parameters far removed from those used in this study. All of the beads used herein were spherical, and the remaining physical parameters covered in these correlations are given in Tables 1 and 2 (see page 34).

CHAPTER 7

CONCLUSIONS

The minimum gas and liquid velocities required to fluidize various types of solids were determined and correlated as a function of particle size, particle density, and liquid viscosity; no effect of the initial bed height or column diameter was found.

Overall phase holdups determined from a homogeneous bed model were combined with similarly determined literature data to yield correlations for the overall solid and gas phase holdups. The overall solid holdup, which was primarily a function of the liquid velocity, solid/liquid density difference, and the particle diameter, varied proportionally with the latter two parameters and inversely with the liquid velocity. The overall gas holdup was primarily a function of the gas velocity and was almost proportional to it.

An electroconductivity technique was adapted for use in three-phase fluidized beds and permitted measurement of the local phase holdups to be determined as a function of position in the columns. This technique has shown the existence of a transition region as the bed goes from a three-phase to a two-phase system. The transition region where the solids concentration drops to zero was found to increase in width with increasing gas velocity, but was unaffected by changes in liquid velocity or column diameter.

One disadvantage of the technique is that it can only be applied to systems with electroconductive liquids. However, since most real or prototype systems either use water or can be simulated with a fluid capable of being made electroconductive, this handicap is not overly restrictive. The technique can be successfully applied to a number of systems, including porous alumina beads if a correction is made for their internal porosity.

Using the seven parameters determined from the local gas and solid holdup profiles, it was possible to fit each of the holdup-versus-column height curves. Use of the dimensionless correlations of just five of these parameters-- ε_G''', ε_G'', ε_S''', σ_S , and H-- should give a reactor designer more information concerning important phase distributions than is available from the simpler homogeneous bed model, and thus aid in the rational design of reactors in which local conditions throughout the bed must be considered. Of course, the correlations should not be used for conditions far beyond the range on which they are based.

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LIST OF REFERENCES

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APPENDIX A

CALCULATION OF BED HEIGHT AND PRESSURE DROP FOR RUN G50E13

$$U_G = 3.58 \text{ cm/sec}$$

The manometers are read at static conditions (when gas and liquid velocities are zero) to correct for the slightly different position of the manometers with the meter sticks. Then for a given gas flow rate, the liquid rate is varied, and the manometer heights measured at each liquid rate. The pressure drop due to flow between a particular manometer and the bottom pressure tap is calculated from the following:

$$\Delta h_i = m_1 - m_i + (m_{i,o} - m_{1,o}) \quad , \tag{44}$$

where

Δh_i = pressure drop due to flow between taps i and 1,

m_1 = height of liquid in manometer 1 (bottom tap),

m_i = height of liquid in manometer i,

$m_{i,o}$ = height of liquid in manometer i under static conditions,

$m_{1,o}$ = height of liquid in manometer 1 under static conditions.

Some of the raw data for run G50E13 are shown in Table 8. The first line shows the manometer heights under static conditions. Line 2 shows the manometer heights for a superficial liquid velocity of 10.14 cm/sec. The pressure

Table 8. Raw data for run G50E13

	Line 1	Line 2
Gas velocity, cm/sec	0	3.58
Liquid velocity, cm/sec	0	10.14
Bed height, cm	37	65
m_1, cm water	45.8	66.5
m_2, cm water	45.8	63.5
m_3, cm water	45.8	60.3
m_4, cm water	45.6	57.3
m_5, cm water	45.5	54.2
m_6, cm water	45.5	51.0
m_7, cm water	45.5	48.3
m_8, cm water	45.4	45.4
m_9, cm water	45.5	44.8
m_{10}, cm water	45.5	45.9
m_{11}, cm water	45.5	47.0

drops can then be calculated by using the following equation:

$$\Delta h_2 = m_1 - m_2 + (m_{2,o} - m_{1,o}) \quad , \tag{45}$$

$$\Delta h_2 = 66.5 - 63.5 + (45.8 - 45.8) = 3.0 \text{ cm water,}$$
$$\Delta h_3 = 66.5 - 60.3 + (45.8 - 45.8) = 6.2 \text{ cm water,}$$
$$\Delta h_4 = 66.5 - 57.3 + (45.6 - 45.8) = 9.0 \text{ cm water,}$$
$$\Delta h_5 = 66.5 - 54.2 + (45.5 - 45.8) = 12.0 \text{ cm water,}$$
$$\Delta h_6 = 66.5 - 51.0 + (45.5 - 45.8) = 15.2 \text{ cm water,}$$
$$\Delta h_7 = 66.5 - 48.3 + (45.5 - 45.8) = 17.9 \text{ cm water,}$$
$$\Delta h_8 = 66.5 - 45.4 + (45.4 - 45.8) = 20.7 \text{ cm water,}$$
$$\Delta h_9 = 66.5 - 44.8 + (45.5 - 45.8) = 21.4 \text{ cm water,}$$
$$\Delta h_{10} = 66.5 - 45.9 + (45.5 - 45.8) = 20.3 \text{ cm water,}$$
$$\Delta h_{11} = 66.5 - 47.0 + (45.5 - 45.8) = 19.2 \text{ cm water.}$$

The pressure taps 2-11 in the 7.62-cm-ID column are located along the column wall at heights of 8.8, 17.8, 26.8, 35.8, 44.8, 53.6, 62.3, 71.3, 80.3, and 88.8 cm, respectively, above the bottom of the bed. Plotting the pressure drops Δh versus their respective tap height results in Fig. 2 (see page 8). Fitting straight lines to the pressure drop in and above the bed results in:

$$\Delta h_{\text{in bed}} = 0.194 + 0.3307\ h \quad , \tag{46}$$

$$\Delta h_{\text{above bed}} = 30.37 - 0.1257\ h \quad , \tag{47}$$

where h is the height above the bottom of the bed. Solving these two equations simultaneously gives the point of intersection of the two lines, corresponding to the calculated bed height and the pressure drop across the bed. As shown in Fig. 2 (see page 8), the point of intersection corresponds to a calculated height of 66 cm and a pressure drop of 22 cm water.

Calculating the bed pressure drop in this manner for each liquid rate and then plotting the two values as shown in Fig. 48, the minimum liquid fluidization velocity at the set gas rate can be found as the intersection of the curve for the pressure drop through the packed bed and that for the pressure drop through the bed once it has been fluidized. For U_G = 3.58 cm/sec, $U_{L,mf}$ is found to be 2.15 cm/sec.

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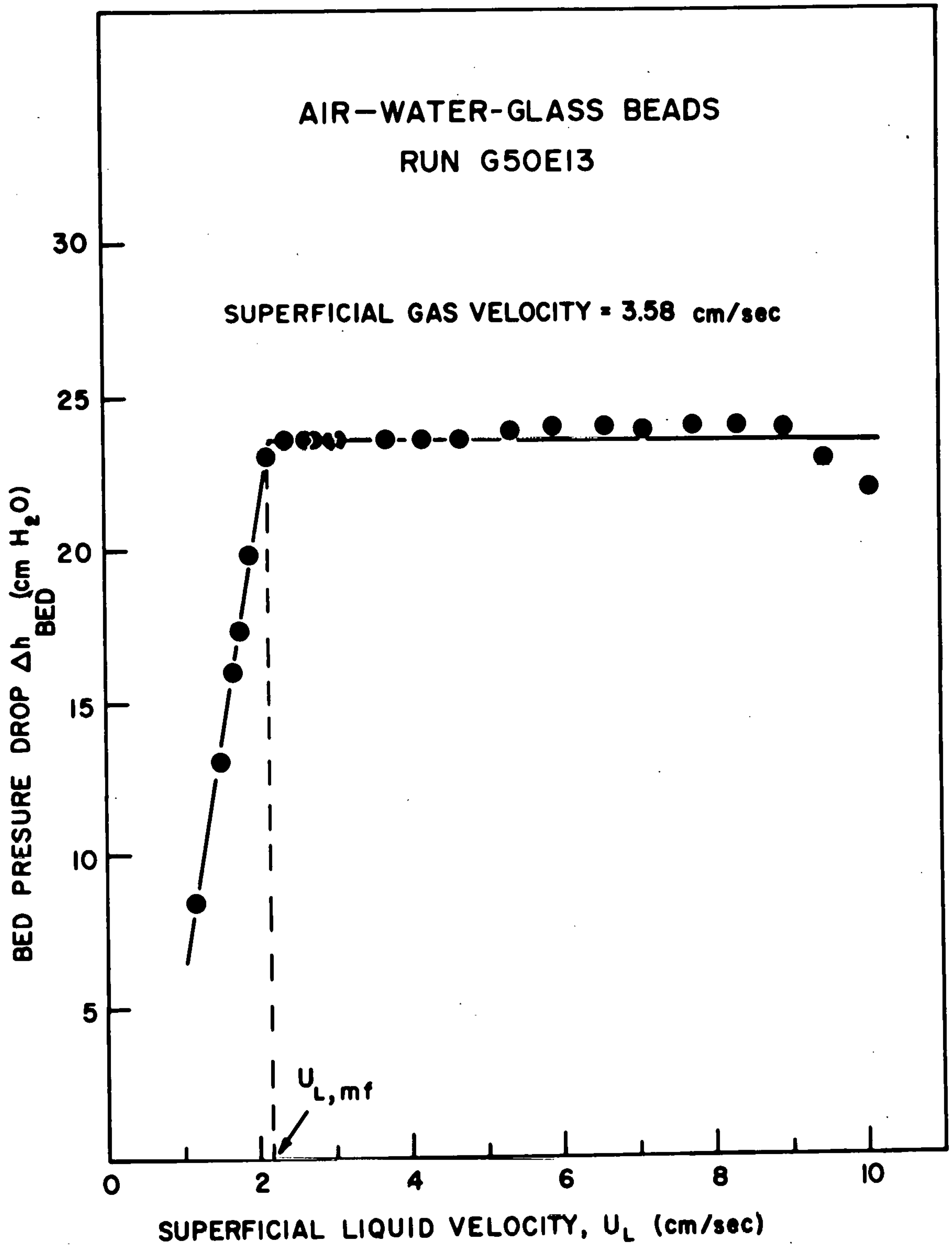

Figure 48. Use of the bed pressure-drop-versus-liquid velocity curves to obtain the minimum liquid fluidization velocity.

APPENDIX B

SAMPLE CALCULATIONS USING RUN G22L16

Calculation of Pressure Gradient

The pressure gradient was calculated from data obtained using the following conditions:

$$D_c = 15.2 \text{ cm},$$

$$U_G = 3.86 \text{ cm/sec},$$

$$\gamma_o = 4.13 \text{ mmho}.$$

For $U_L = 0$, the pressure drop readings obtained were 34.5- , 34.4- , 34.4- , 34.4- , 34.3- , 34.3- , 34.4- , 34.5- , 34.5- , 34.7- , and 34.6-cm water for m_1 through m_{11}, respectively.

The pressure drop readings obtained for U_L = 5.14 cm/sec were 58.0- , 53.4- , 48.8- , 44.2- , 39.3- , 34.8- , 33.3- , 33.9- , 34.7- , 35.9- , and 36.6-cm water for m_1 through m_{11}, respectively.

The conductivity readings obtained for U_L = 5.14 cm/sec were 1.67, 1.78, 1.73, 1.68, 1.68, 2.79, 3.59, 3.61, 3.62, and 3.57 mmho at column heights of 5, 13, 21, 29, 37, 45, 53, 61, 69, and 77 cm, respectively.

Calculation of the pressure drops as shown in the previous section (Appendix A) gave 4.5- , 9.1- , 13.7- , 18.5- , 23.0- , 24.6- , 24.1- , 23.3- , 22.3- , and 21.5-cm water for Δh_2 through Δh_{11}, respectively.

The pressure taps 1-11 in the 15.2-cm-ID column are located along the wall at heights of 1, 9, 17, 25, 33, 41, 49, 57, 65, 73, and 80 cm, respectively, above the bottom of the bed. Fitting straight lines to the pressure drops in and above the bed results in a calculated bed height of 44.75 cm.

The total pressure drop at any point in the column is the pressure drop due to flow plus the static head. Thus the total pressure drop is calculated from the following:

$$\Delta P_i = \rho_L \, g \, (\Delta h_i + T_i - T_1) \quad , \tag{48}$$

where

ΔP_i = total pressure drop between pressure taps i and 1,

T_i = height above column bottom for pressure tap i.

Calculation of the total pressure drops then gives the following:

$$\Delta P_2 = (0.995)(981)(\ 4.5 + \ 9 - 1) = 12201.2 \text{ dyn/cm}^2,$$
$$\Delta P_3 = (0.995)(981)(\ 9.1 + 17 - 1) = 24500.0 \text{ dyn/cm}^2,$$
$$\Delta P_4 = (0.995)(981)(13.7 + 25 - 1) = 36798.8 \text{ dyn/cm}^2,$$
$$\Delta P_5 = (0.995)(981)(18.5 + 33 - 1) = 49292.8 \text{ dyn/cm}^2,$$
$$\Delta P_6 = (0.995)(981)(23.0 + 41 - 1) = 61494.0 \text{ dyn/cm}^2,$$
$$\Delta P_7 = (0.995)(981)(24.6 + 49 - 1) = 70864.5 \text{ dyn/cm}^2,$$
$$\Delta P_8 = (0.995)(981)(24.1 + 57 - 1) = 78185.2 \text{ dyn/cm}^2,$$
$$\Delta P_9 = (0.995)(981)(23.3 + 65 - 1) = 85213.1 \text{ dyn/cm}^2,$$
$$\Delta P_{10} = (0.995)(981)(22.3 + 73 - 1) = 92045.8 \text{ dyn/cm}^2,$$
$$\Delta P_{11} = (0.995)(981)(21.5 + 80 - 1) = 98097.5 \text{ dyn/cm}^2.$$

The calculated bed height was found to be 44.75 cm. Thus, pressure taps 1-6 were located in the bed, while taps 7-11 were situated above the bed. Performing a least-squares linear fit to the total pressure drops in the bed as a function of height results in the following equation:

$$\Delta P_{\text{in bed}} = -1698.4 + 1542.2\ h \quad . \tag{49}$$

<u>Pressure Gradient Method for Calculation of Overall Holdups</u>

The solid holdup can be determined by using Eq. (3):

$$\varepsilon_S = \rho_S AH \quad . \tag{3}$$

Substitution of numerical values yields:

$$\varepsilon_S = (9556.3)/(2.243)(182.4)(44.75) = 0.522.$$

Equation (2) is:

$$\Delta P = gH(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) \quad . \tag{2}$$

Therefore,

$$d(\Delta P)/d(H) = g(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) \quad , \tag{50}$$

assuming that the holdups are constant over the entire bed and that $d(\Delta P)/d(h)$ is the slope of the ΔP-versus-h line. Thus, substitution into the above yields:

$$1542.2 = 981[0.995\,\varepsilon_L + 0.0013\,\varepsilon_G + 2.243(0.522)],$$

$$1.572 = 0.995\varepsilon_L + 0.0013\,\varepsilon_G + 1.171,$$

$$0.401 = 0.995\varepsilon_L + 0.0013\,\varepsilon_G .$$

Substituting into Eq. (1) gives:

$$1 = \varepsilon_L + \varepsilon_G + \varepsilon_S,$$
$$1 = \varepsilon_L + \varepsilon_G + 0.522.$$

Therefore,

$$\varepsilon_L + \varepsilon_G = 0.478.$$

Solving these two equations simultaneously then yields the remaining two holdups:

$$0.401 = 0.995\,\varepsilon_L + 0.0013\,\varepsilon_G,$$
$$0.478 = \varepsilon_L + \varepsilon_G.$$

Therefore,

$$\varepsilon_L = 0.403,$$
$$\varepsilon_G = 0.075,$$
$$\varepsilon_S = 0.522.$$

<u>Conductivity Method for Determination of Overall Holdups</u>

Equation (7), in which the conductivity is measured at the middle of the bed, can also be used to calculate the overall holdups;

$$\varepsilon_L = \gamma/\gamma_o \quad (7)$$

The bed height is 44.75 cm, and the conductivity at the middle of the bed is 1.73 mmhos. Thus,

$$\varepsilon_L = 1.73/4.13 = 0.419.$$

Substituting into Eq. (2) yields:

$$1542.2 = 981[0.995(0.419) + 0.0013\ \varepsilon_G + 2.243\ \varepsilon_S],$$

$$1.572 = 0.417 + 0.0013\ \varepsilon_G + 2.243\ \varepsilon_S,$$

$$1.155 = 0.0013\ \varepsilon_G + 2.243\ \varepsilon_S.$$

Substituting into Eq. (1) gives:

$$1 = 0.419 + \varepsilon_G + \varepsilon_S,$$

or

$$\varepsilon_G + \varepsilon_S = 0.581.$$

Solving these two equations simultaneously then yields the remaining two holdups:

$$1.155 = 0.0013\ \varepsilon_G + 2.243\ \varepsilon_S,$$

$$0.581 = \varepsilon_G + \varepsilon_S.$$

Therefore,

$$\varepsilon_L = 0.419,$$

$$\varepsilon_G = 0.066,$$

$$\varepsilon_S = 0.515.$$

<u>Calculation of Incremental Holdups</u>

Equation (7) can be used to calculate the liquid holdup as a function of height in the column:

$$\varepsilon_L = \gamma/\gamma_o \quad . \tag{7}$$

At h = 5, $\varepsilon_L = 1.67/4.13 = 0.404$,

At h = 13, $\varepsilon_L = 1.78/4.13 = 0.431$,

At h = 21, $\varepsilon_L = 1.73/4.13 = 0.419$, At $h = 29$, $\varepsilon_L = 1.68/4.13 = 0.407$,

At $h = 37$, $\varepsilon_L = 1.68/4.13 = 0.407$,

At $h = 45$, $\varepsilon_L = 2.79/4.13 = 0.676$,

At $h = 53$, $\varepsilon_L = 3.59/4.13 = 0.869$,

At $h = 61$, $\varepsilon_L = 3.61/4.13 = 0.874$,

At $h = 69$, $\varepsilon_L = 3.62/4.13 = 0.887$,

At $h = 77$, $\varepsilon_L = 3.57/4.13 = 0.864$.

Substitution into Eq. (10) for just the column increment around the column height of 5 cm results in:

$$dP/dh = g(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) \quad , \qquad (10)$$

$$(\Delta P_2 - \Delta P_1)/(T_2 - T_1) = g(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) \quad , \qquad (51)$$

or

$$(12201.2-0)/(9-1) = 981[0.995(0.404)+0.0013\varepsilon_G+2.243\varepsilon_S],$$

$$1.153 = 0.0013\,\varepsilon_G + 2.243\varepsilon_S \,.$$

Substitution into Eq. (1) yields:

$$1 = 0.404 + \varepsilon_G + \varepsilon_S \,,$$

$$0.596 = \varepsilon_G + \varepsilon_S \,.$$

Simultaneous solution of these two equations then gives:

$$1.153 = 0.0013\,\varepsilon_G + 2.243\varepsilon_S \,,$$

$$0.596 = \varepsilon_G + \varepsilon_S \,.$$

Therefore,

$$\varepsilon_G = 0.082,$$

$$\varepsilon_S = 0.514.$$

Substitution into Eq. (10) for the column increment around the column height of 13 cm yields:

$$(\Delta P_3 - \Delta P_2)/(T_3 - T_2) = g(\varepsilon_L\rho_L + \varepsilon_G\rho_G + \varepsilon_S\rho_S) \quad , \qquad (52)$$

or

$$(24500-12201.2)/(17-9) = 981[0.995(0.431)+0.0013\varepsilon_G-2.243\,\varepsilon_S],$$

$$1.138 = 0.0013\,\varepsilon_G + 2.243\,\varepsilon_S.$$

Substitution into Equation (1) gives:

$$1 = 0.431 + \varepsilon_G + \varepsilon_S,$$

$$0.569 = \varepsilon_G + \varepsilon_S.$$

Therefore,

$$\varepsilon_G = 0.062,$$

$$\varepsilon_S = 0.507.$$

In this manner, all of the holdups can be obtained as a function of height in the column, as shown in Table 9.

Fit of Local Incremental Holdups

The local holdups for Run G22L16 for U_L = 5.14 cm/sec are plotted as a function of column position in Fig. 35 (see page 89). Each holdup curve was fitted using the error function as described previously. The constant portion of the holdups was calculated by determining the best horizontal fit to the gas and solid holdup curves, starting at the bottom (or top) of the column and progressing toward the middle of the column, one point at a time. Points were

Table 9. Calculation of holdups as a function of position within the column

Column height (cm)	Liquid holdup	Gas holdup	Solid holdup
5	0.404	0.082	0.514
13	0.431	0.062	0.507
21	0.419	0.068	0.513
29	0.407	0.064	0.529
37	0.407	0.081	0.513
45	0.676	0.092	0.233
53	0.869	0.131	0.030
61	0.874	0.126	0.011
69	0.877	0.123	-0.001
77	0.864	0.136	0.009

continually added until one was found that gave a poor horizontal fit. Consequently, the gas holdup in the bed was determined using the lowest five points:

$$\varepsilon_G''' = (0.082 + 0.062 + 0.068 + 0.064 + 0.081)/5 = 0.072.$$

Similarly, the gas holdup above the bed was determined using the uppermost four points:

$$\varepsilon_G'' = (0.136 + 0.123 + 0.126 + 0.131)/4 = 0.129.$$

The solid holdup in the bed, on the other hand, used only the lowest three points since addition of the fourth point gave a poor horizontal fit:

$$\varepsilon_S''' = (0.514 + 0.507 + 0.513)/3 = 0.511.$$

Once the constant portions of the holdup curves are determined, an average is calculated. For the gas holdup curve, this average was:

$$\varepsilon_{G,avg} = (0.072 + 0.129)/2 = 0.1005.$$

The error function is then fitted to two points on either side of this average, using the point of inflection, I_G, and a standard deviation, σ_G, as follows:

$$\begin{aligned} \mathrm{erf}(Y_A) &= (\varepsilon_{G,A} - \varepsilon_{G,avg})/(\varepsilon_{G,avg} - \varepsilon_G''') \quad , \qquad (53) \\ &= (0.131-0.1005)/(0.1005-0.072) = 1.0702; \end{aligned}$$

$$\begin{aligned} \mathrm{erf}(Y_B) &= (\varepsilon_{G,B} - \varepsilon_{G,avg})/(\varepsilon_{G,avg} - \varepsilon_G''') \quad , \qquad (54) \\ &= (0.092-0.1005)/(0.1005-0.072) = -0.2982; \end{aligned}$$

where

$\varepsilon_{G,A}$ = the local gas holdup at the first point above $\varepsilon_{G,avg}$,

$\varepsilon_{G,B}$ = the local gas holdup at the first point below $\varepsilon_{G,avg}$.

The terms Y_A and Y_B are then found by taking the inverse error function of 1.0702 and -0.2982, respectively. Since the error function cannot be greater than 1 or smaller than -1, any such values are set equal to 0.9999 or -0.9999. Then,

$$Y_A = \mathrm{erf}^{-1}\,[\mathrm{erf}(Y_A)] \quad , \tag{55}$$
$$= \mathrm{erf}^{-1}(0.9999) = 2.765;$$

$$Y_B = \mathrm{erf}^{-1}\,[\mathrm{erf}(Y_B)] \quad , \tag{56}$$
$$= \mathrm{erf}^{-1}(-0.2982) = -0.265.$$

The standard deviation around $\varepsilon_{G,avg}$ is given by:

$$\sigma_G = (h_A - I_G)/Y_A = (h_B - I_G)/Y_B \quad , \tag{57}$$

where

h_A = position of first point where $\varepsilon_G > \varepsilon_{G,avg}$,

h_B = position of first point where $\varepsilon_G < \varepsilon_{G,avg}$.

Solving the two equations simultaneously gives I_G:

$$I_G = (Y_A\, h_B - Y_B\, h_A)/(Y_A - Y_B) \quad , \tag{58}$$
$$=[(2.765)(45)-(-0.265)(53)]/[2.765-(-0.265)]=45.7 \text{ cm}.$$

Then, the standard deviation can be found by using one of the above equations:

$$\sigma_G = (53-45.7)/(2.765) = 2.64 \text{ cm.}$$

The gas holdup curve is then fitted using Eq. (32):

$$\varepsilon_G = [(P_G - 1)/-2]\varepsilon_G''' + [(P_G + 1)/2]\varepsilon_G'' , \qquad (32)$$

where

$$P_G = \text{erf } [(h - I_G)/\sigma_G] . \qquad (33)$$

For a column position of 10 cm above the bottom of the bed:

$$P_G = \text{erf}[(10-45.7)/2.64)] = \text{erf}(-13.523) = -1,$$

$$\varepsilon_G = [(-1-1)/-2]0.072 + [(-1+1)/2]0.129 = 0.072.$$

For a column position of 47 cm above the bottom of the bed:

$$P_G = \text{erf}[(47-45.7)/2.64] = \text{erf}(0.492) = 0.516,$$

$$\varepsilon_G = [(0.516-1)/(-2)]0.072 + [(0.516 + 1)/2]0.129,$$

$$\varepsilon_G = 0.017 + 0.098 = 0.115.$$

For a column position of 70 cm above the bottom of the bed:

$$P_G = \text{erf}[(70-45.7)/2.64] = \text{erf}(9.205) = 1,$$

$$\varepsilon_G = [(1-1)/(-2)]0.072 + [(1+1)/2]0.129 = 0.129.$$

The solid holdup curve is fitted in the same manner, remembering that $\varepsilon_S'' = 0$. The liquid holdup curve is then fitted as the residual of Eq. (1).

APPENDIX C

MINIMUM FLUIDIZATION VELOCITY DATA

The MF velocity data for all the systems studied, including that of Bloxom et al. [1975], are presented in Table 10. Run numbers that start with "M" are MF data measured by Bloxom et al. The headings in the table correspond to the following:

1. DC is the column diameter in cm,
2. DP is the particle diameter in cm,
3. RHOS is the solid density in g/cm³,
4. RHOL is the liquid density in g/cm³,
5. MUL is the liquid viscosity in cP,
6. UG is the gas velocity in cm/sec,
7. ULMF is the minimum liquid fluidization velocity.

Table 10. Minimum fluidization velocities

RUN	DC	DP	RHOS	RHOL	MUL	UG	ULMF
G70A13	7.62	0.46	2.24	0.995	0.010	0.0	4.15
G71A13	7.62	0.46	2.24	0.995	0.010	0.0	4.15
G81B13	7.62	0.46	2.24	0.995	0.010	0.44	3.50
G76C13	7.62	0.46	2.24	0.995	0.010	0.95	3.10
G33D13	7.62	0.46	2.24	0.995	0.010	1.77	2.60
G55D13	7.62	0.46	2.24	0.995	0.010	1.78	2.61
G27E13	7.62	0.46	2.24	0.995	0.010	3.56	2.50
G50E13	7.62	0.46	2.24	0.995	0.010	3.58	2.15
G56E13	7.62	0.46	2.24	0.995	0.010	3.58	2.15
G57F13	7.62	0.46	2.24	0.995	0.010	5.36	1.94
G54F13	7.62	0.46	2.24	0.995	0.010	5.30	1.85
G59G13	7.62	0.46	2.24	0.995	0.010	7.08	1.80
G53H13	7.62	0.46	2.24	0.995	0.010	8.91	1.63
G60H13	7.62	0.46	2.24	0.995	0.010	8.90	1.65
G64I13	7.62	0.46	2.24	0.995	0.010	10.54	1.45
G73I13	7.62	0.46	2.24	0.995	0.010	10.54	1.45
G78J13	7.62	0.46	2.24	0.995	0.010	12.23	1.40
G83J13	7.62	0.46	2.24	0.995	0.010	12.28	1.45
G68K13	7.62	0.46	2.24	0.995	0.010	13.95	1.35
G79L13	7.62	0.46	2.24	0.995	0.010	15.65	1.30
G84M13	7.62	0.46	2.24	0.995	0.010	17.15	1.10
G89A13	7.62	0.46	2.24	0.995	0.010	0.0	3.65
G90D13	7.62	0.46	2.24	0.995	0.010	1.73	2.80
G91F13	7.62	0.46	2.24	0.995	0.010	5.26	1.73
G92I13	7.62	0.46	2.24	0.995	0.010	10.51	1.32
G93I13	7.62	0.46	2.24	0.995	0.010	10.48	1.37
G94A13	7.62	0.46	2.24	0.995	0.010	0.0	3.65
G95D13	7.62	0.46	2.24	0.995	0.010	1.74	2.60
G96F13	7.62	0.46	2.24	0.995	0.010	5.24	1.80
G97I13	7.62	0.46	2.24	0.995	0.010	10.45	1.41
P01A13	7.62	0.63	1.17	0.995	0.010	0.0	1.75
P02B13	7.62	0.63	1.17	0.995	0.010	0.45	1.24
P03C13	7.62	0.63	1.17	0.995	0.010	0.95	0.95
P04D13	7.62	0.63	1.17	0.995	0.010	1.78	0.50
P05E13	7.62	0.63	1.17	0.995	0.010	3.57	0.25
P06A13	7.62	0.63	1.17	0.995	0.010	0.0	1.72
P07B13	7.62	0.63	1.17	0.995	0.010	0.45	1.30
P08C13	7.62	0.63	1.17	0.995	0.010	0.94	0.85
P09D13	7.62	0.63	1.17	0.995	0.010	1.78	0.55
P10E13	7.62	0.63	1.17	0.995	0.010	3.57	0.28
P01A16	15.24	0.63	1.17	0.995	0.010	0.0	1.58
P02B16	15.24	0.63	1.17	0.995	0.010	0.11	1.47
P03C16	15.24	0.63	1.17	0.995	0.010	0.23	1.38
P04D16	15.24	0.63	1.17	0.995	0.010	0.44	1.10
P05E16	15.24	0.63	1.17	0.995	0.010	0.88	0.86
P06F16	15.24	0.63	1.17	0.995	0.010	1.32	0.77
P07G16	15.24	0.63	1.17	0.995	0.010	1.77	0.40
P08H16	15.24	0.63	1.17	0.995	0.010	2.23	0.25
P09I16	15.24	0.63	1.17	0.995	0.010	2.66	0.21

Table 10 (continued)

RUN	DC	DP	RHOS	RHOL	MUL	UG	ULMF
P10J16	15.24	0.63	1.17	0.995	0.010	3.09	0.15
P11K16	15.24	0.63	1.17	0.995	0.010	3.51	0.10
P12L16	15.24	0.63	1.17	0.995	0.010	3.93	0.08
G01A16	15.24	0.46	2.24	0.995	0.010	0.0	4.10
G02D16	15.24	0.46	2.24	0.995	0.010	0.44	3.12
G03E16	15.24	0.46	2.24	0.995	0.010	0.88	3.03
G04F16	15.24	0.46	2.24	0.995	0.010	1.32	2.50
G05G16	15.24	0.46	2.24	0.995	0.010	1.76	2.53
G06H16	15.24	0.46	2.24	0.995	0.010	2.20	2.58
G07I16	15.24	0.46	2.24	0.995	0.010	2.64	2.45
G08J16	15.24	0.46	2.24	0.995	0.010	3.07	2.30
G09K16	15.24	0.46	2.24	0.995	0.010	3.50	2.26
G10L16	15.24	0.46	2.24	0.995	0.010	3.90	2.26
G11M16	15.24	0.46	2.24	0.995	0.010	4.32	2.21
S01A13	7.62	0.19	1.72	0.995	0.010	0.0	1.20
S02B13	7.62	0.19	1.72	0.995	0.010	0.44	1.10
S03C13	7.62	0.19	1.72	0.995	0.010	0.93	1.02
S04D13	7.62	0.19	1.72	0.995	0.010	1.76	1.05
S05E13	7.62	0.19	1.72	0.995	0.010	3.52	0.68
S06F13	7.62	0.19	1.72	0.995	0.010	5.30	0.63
S07A13	7.62	0.19	1.72	0.995	0.010	0.0	1.15
S08C13	7.62	0.19	1.72	0.995	0.010	0.93	1.25
S09G13	7.62	0.19	1.72	0.995	0.010	7.03	0.60
S10H13	7.62	0.19	1.72	0.995	0.010	8.67	0.45
S11I13	7.62	0.19	1.72	0.995	0.010	10.35	0.40
A01A13	7.62	0.62	1.99	0.995	0.010	0.0	5.00
A02B13	7.62	0.62	1.99	0.995	0.010	0.49	4.30
A03C13	7.62	0.62	1.99	0.995	0.010	0.94	3.85
A04D13	7.62	0.62	1.99	0.995	0.010	1.77	3.18
A05E13	7.62	0.62	1.99	0.995	0.010	3.51	2.59
A06F13	7.62	0.62	1.99	0.995	0.010	5.28	2.02
A07G13	7.62	0.62	1.99	0.995	0.010	7.03	1.82
A08H13	7.62	0.62	1.99	0.995	0.010	8.79	1.60
A09I13	7.62	0.62	1.99	0.995	0.010	10.57	1.59
A10J13	7.62	0.62	1.99	0.995	0.010	12.33	1.33
A11K13	7.62	0.62	1.99	0.995	0.010	14.07	1.28
A12L13	7.62	0.62	1.99	0.995	0.010	15.74	1.21
A13M13	7.62	0.62	1.99	0.995	0.010	17.42	1.23
K01A13	7.62	0.62	2.20	0.995	0.010	0.0	4.97
K03C13	7.62	0.62	2.20	0.995	0.010	0.92	4.15
K04D13	7.62	0.62	2.20	0.995	0.010	1.75	3.80
K05E13	7.62	0.62	2.20	0.995	0.010	3.51	3.05
K06A13	7.62	0.62	2.20	0.995	0.010	0.0	4.80
K07G13	7.62	0.62	2.20	0.995	0.010	7.02	2.27
K08B13	7.62	0.62	2.20	0.995	0.010	0.44	4.65
K09I13	7.62	0.62	2.20	0.995	0.010	10.57	2.02
K10K13	7.62	0.62	2.20	0.995	0.010	14.03	1.92
K11M13	7.62	0.62	2.20	0.995	0.010	17.44	1.75
C01A13	7.62	0.32	2.24	0.995	0.010	0.0	2.88

Table 10 (continued)

RUN	DC	DP	RHOS	RHOL	MUL	UG	ULMF
C02B13	7.62	0.32	2.24	0.995	0.010	0.43	2.32
C03C13	7.62	0.32	2.24	0.995	0.010	0.92	1.90
C04D13	7.62	0.32	2.24	0.995	0.010	1.76	1.60
C05E13	7.62	0.32	2.24	0.995	0.010	3.48	1.36
C06G13	7.62	0.32	2.24	0.995	0.010	6.97	1.03
C07G13	7.62	0.32	2.24	0.995	0.010	6.98	1.04
C08I13	7.62	0.32	2.24	0.995	0.010	10.45	0.96
C09K13	7.62	0.32	2.24	0.995	0.010	13.82	0.80
C10M13	7.62	0.32	2.24	0.995	0.010	17.26	0.78
M01E13	7.62	0.46	2.24	0.995	0.010	3.49	2.40
M04F13	7.62	0.46	2.24	0.995	0.010	5.23	1.87
M05G13	7.62	0.46	2.24	0.995	0.010	6.97	1.70
M02G13	7.62	0.46	2.24	0.995	0.010	6.98	1.68
M07G13	7.62	0.46	2.24	0.995	0.010	7.04	1.67
M06H13	7.62	0.46	2.24	0.995	0.010	8.78	1.68
M03I13	7.62	0.46	2.24	0.995	0.010	10.51	1.55
M09K13	7.62	0.46	2.24	0.995	0.010	14.06	1.32
M29E43	7.62	0.46	2.24	1.100	0.038	3.54	1.06
M30F43	7.62	0.46	2.24	1.100	0.038	5.31	1.04
M31G43	7.62	0.46	2.24	1.100	0.038	7.10	1.03
M32H43	7.62	0.46	2.24	1.100	0.038	8.87	0.87
M33J43	7.62	0.46	2.24	1.100	0.038	12.40	0.88
M23E73	7.62	0.46	2.24	1.140	0.069	3.54	0.93
M24F73	7.62	0.46	2.24	1.140	0.057	5.33	0.88
M25G73	7.62	0.46	2.24	1.140	0.065	7.10	0.75
M26H73	7.62	0.46	2.24	1.140	0.065	8.87	0.77
M27J73	7.62	0.46	2.24	1.140	0.064	12.42	0.61
M17E93	7.62	0.46	2.24	1.150	0.091	3.54	0.72
M18F93	7.62	0.46	2.24	1.150	0.091	5.31	0.72
M19G93	7.62	0.46	2.24	1.150	0.092	7.05	0.63
M20H93	7.62	0.46	2.24	1.150	0.089	8.81	0.62
M21J93	7.62	0.46	2.24	1.150	0.088	12.32	0.58
M12E113	7.62	0.46	2.24	1.160	0.110	3.53	0.60
M13F113	7.62	0.46	2.24	1.160	0.116	5.29	0.67
M14G113	7.62	0.46	2.24	1.160	0.114	7.02	0.60
M15H113	7.62	0.46	2.24	1.160	0.115	8.77	0.58
M16J113	7.62	0.46	2.24	1.160	0.114	12.28	0.51

APPENDIX D

OVERALL PHASE HOLDUP DATA

__Obtained From the Literature__

The overall gas and solid holdups obtained from the literature and used in Eqs. (29) and (30) are presented in Table 11. The headings in the table are the same as those in Table 10 with the addition of the following:

1. UL is the liquid velocity in cm/sec,
2. EL is the overall liquid holdup,
3. EG is the overall gas holdup,
4. ES is the overall solid holdup.

The heading labeled "LITR" indicates the reference for that line of data. The code corresponds to the following:

1. DAKS is Dakshinamurty et al. [1971],
2. OST is Ostergaard [1965],
3. KIM is Kim et al. [1975],
4. EFVA is Efremov and Vakhrushev [1970],
5. BREC is Bruce and Revel-Chion [1974],
6. OSTH is Ostergaard and Thiesen [1966],
7. MIOS is Michelsen and Ostergaard [1970],
8. BHEP is Bhatia and Epstein [1974],
9. MUKH is Mukherjee et al. [1974],
10. RIGC is Rigby and Capes [1970],
11. KHOS is Khosrowshahi et al. [1975],
12. BLOX is Bloxom et al. [1975].

Table 11. Overall phase holdups obtained from the literature

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.13	2.70	0.995	0.008	0.0	2.7			0.583
DAKS	5.6	0.13	2.70	0.995	0.008	0.4	2.7			0.598
DAKS	5.6	0.13	2.70	0.995	0.008	0.8	2.7			0.597
DAKS	5.6	0.13	2.70	0.995	0.008	1.1	2.7			0.586
DAKS	5.6	0.13	2.70	0.995	0.008	3.4	2.7			0.538
DAKS	5.6	0.13	2.70	0.995	0.008	3.8	2.7			0.511
DAKS	5.6	0.13	2.70	0.995	0.008	3.9	2.7			0.492
DAKS	5.6	0.13	2.70	0.995	0.008	0.0	2.7			0.661
DAKS	5.6	0.13	2.70	0.995	0.008	0.4	1.8			0.680
DAKS	5.6	0.13	2.70	0.995	0.008	0.8	1.8			0.676
DAKS	5.6	0.13	2.70	0.995	0.008	1.1	1.8			0.670
DAKS	5.6	0.13	2.70	0.995	0.008	1.8	1.8			0.647
DAKS	5.6	0.13	2.70	0.995	0.008	2.4	1.8			0.638
DAKS	5.6	0.13	2.70	0.995	0.008	3.4	1.8			0.606
DAKS	5.6	0.13	2.70	0.995	0.008	3.8	1.8			0.594
DAKS	5.6	0.13	2.70	0.995	0.008	3.9	1.8			0.588
DAKS	5.6	0.13	2.70	0.995	0.008	0.0	5.0			0.462
DAKS	5.6	0.13	2.70	0.995	0.008	0.4	5.0			0.461
DAKS	5.6	0.13	2.70	0.995	0.008	0.8	5.0			0.461
DAKS	5.6	0.13	2.70	0.995	0.008	1.1	5.0			0.459
DAKS	5.6	0.13	2.70	0.995	0.008	1.8	5.0			0.450
DAKS	5.6	0.13	2.70	0.995	0.008	3.4	5.0			0.427
DAKS	5.6	0.13	2.70	0.995	0.008	3.8	5.0			0.411
DAKS	5.6	0.13	2.70	0.995	0.008	3.9	5.0			0.409
DAKS	5.6	0.13	2.70	0.995	0.008	0.0	4.2			0.501
DAKS	5.6	0.13	2.70	0.995	0.008	0.4	4.2			0.512
DAKS	5.6	0.13	2.70	0.995	0.008	0.8	4.2			0.501
DAKS	5.6	0.13	2.70	0.995	0.008	1.1	4.2			0.497
DAKS	5.6	0.13	2.70	0.995	0.008	1.8	4.2			0.483
DAKS	5.6	0.13	2.70	0.995	0.008	3.4	4.2			0.453
DAKS	5.6	0.13	2.70	0.995	0.008	3.8	4.2			0.445
DAKS	5.6	0.13	2.70	0.995	0.008	3.9	4.2			0.424
DAKS	5.6	0.13	2.70	0.800	0.017	0.0	5.7			0.434
DAKS	5.6	0.13	2.70	0.800	0.017	0.4	5.7			0.416
DAKS	5.6	0.13	2.70	0.800	0.017	0.9	5.7			0.370
DAKS	5.6	0.13	2.70	0.800	0.017	1.4	5.7			0.333
DAKS	5.6	0.13	2.70	0.800	0.017	1.7	5.7			0.325
DAKS	5.6	0.13	2.70	0.800	0.017	0.0	4.8			0.474
DAKS	5.6	0.13	2.70	0.800	0.017	0.4	4.8			0.465
DAKS	5.6	0.13	2.70	0.800	0.017	0.9	4.8			0.412
DAKS	5.6	0.13	2.70	0.800	0.017	1.4	4.8			0.386
DAKS	5.6	0.13	2.70	0.800	0.017	1.7	4.8			0.362
DAKS	5.6	0.13	2.70	0.800	0.017	0.0	3.8			0.509
DAKS	5.6	0.13	2.70	0.800	0.017	0.4	3.8			0.491
DAKS	5.6	0.13	2.70	0.800	0.017	0.9	3.8			0.458
DAKS	5.6	0.13	2.70	0.800	0.017	1.4	3.8			0.430
DAKS	5.6	0.13	2.70	0.800	0.017	1.7	3.8			0.390
DAKS	5.6	0.13	2.70	0.800	0.017	0.0	3.1			0.590
DAKS	5.6	0.13	2.70	0.800	0.017	0.4	3.1			0.543

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.13	2.70	0.800	0.017	0.9	3.1			0.520
DAKS	5.6	0.13	2.70	0.800	0.017	1.4	3.1			0.491
DAKS	5.6	0.13	2.70	0.800	0.017	1.7	3.1			0.467
DAKS	5.6	0.13	2.70	0.800	0.017	0.0	2.0			0.622
DAKS	5.6	0.13	2.70	0.800	0.017	0.4	2.0			0.600
DAKS	5.6	0.13	2.70	0.800	0.017	0.9	2.0			0.570
DAKS	5.6	0.13	2.70	0.800	0.017	1.4	2.0			0.541
DAKS	5.6	0.13	2.70	0.800	0.017	1.7	2.0			0.520
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	5.0			0.366
DAKS	5.6	0.11	2.70	0.995	0.008	0.2	5.0			0.373
DAKS	5.6	0.11	2.70	0.995	0.008	1.3	5.0			0.375
DAKS	5.6	0.11	2.70	0.995	0.008	1.8	5.0			0.366
DAKS	5.6	0.11	2.70	0.995	0.008	4.0	5.0			0.329
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	4.2			0.400
DAKS	5.6	0.11	2.70	0.995	0.008	1.2	4.2			0.414
DAKS	5.6	0.11	2.70	0.995	0.008	1.5	4.2			0.407
DAKS	5.6	0.11	2.70	0.995	0.008	1.7	4.2			0.400
DAKS	5.6	0.11	2.70	0.995	0.008	4.0	4.2			0.355
DAKS	5.6	0.11	2.70	0.995	0.008	5.5	4.2			0.329
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	3.3			0.457
DAKS	5.6	0.11	2.70	0.995	0.008	0.1	3.3			0.462
DAKS	5.6	0.11	2.70	0.995	0.008	0.6	3.3			0.466
DAKS	5.6	0.11	2.70	0.995	0.008	1.1	3.3			0.454
DAKS	5.6	0.11	2.70	0.995	0.008	1.7	3.3			0.446
DAKS	5.6	0.11	2.70	0.995	0.008	3.3	3.3			0.412
DAKS	5.6	0.11	2.70	0.995	0.008	5.2	3.3			0.379
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	2.5			0.500
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	2.5			0.502
DAKS	5.6	0.11	2.70	0.995	0.008	0.1	2.5			0.504
DAKS	5.6	0.11	2.70	0.995	0.008	0.9	2.5			0.507
DAKS	5.6	0.11	2.70	0.995	0.008	1.7	2.5			0.507
DAKS	5.6	0.11	2.70	0.995	0.008	2.5	2.5			0.502
DAKS	5.6	0.11	2.70	0.995	0.008	3.3	2.5			0.473
DAKS	5.6	0.11	2.70	0.995	0.008	4.9	2.5			0.452
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	1.8			0.566
DAKS	5.6	0.11	2.70	0.995	0.008	0.0	1.8			0.557
DAKS	5.6	0.11	2.70	0.995	0.008	0.6	1.8			0.546
DAKS	5.6	0.11	2.70	0.995	0.008	1.1	1.8			0.539
DAKS	5.6	0.11	2.70	0.995	0.008	2.0	1.8			0.536
DAKS	5.6	0.11	2.70	0.995	0.008	3.3	1.8			0.518
DAKS	5.6	0.11	2.70	0.995	0.008	4.7	1.8			0.516
DAKS	5.6	0.22	2.71	0.995	0.008	0.0	7.4			0.378
DAKS	5.6	0.22	2.71	0.995	0.008	0.3	7.4			0.370
DAKS	5.6	0.22	2.71	0.995	0.008	1.5	7.4			0.383
DAKS	5.6	0.22	2.71	0.995	0.008	2.1	7.4			0.361
DAKS	5.6	0.22	2.71	0.995	0.008	4.0	7.4			0.337
DAKS	5.6	0.22	2.71	0.995	0.008	6.0	7.4			0.300
DAKS	5.6	0.22	2.71	0.995	0.008	0.0	6.6			0.421
DAKS	5.6	0.22	2.71	0.995	0.008	0.2	6.6			0.438
DAKS	5.6	0.22	2.71	0.995	0.008	1.4	6.6			0.415

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.22	2.71	0.995	0.008	2.9	6.6			0.404
DAKS	5.6	0.22	2.71	0.995	0.008	4.1	6.6			0.387
DAKS	5.6	0.22	2.71	0.995	0.008	6.0	6.6			0.364
DAKS	5.6	0.22	2.71	0.995	0.008	0.0	6.1			0.459
DAKS	5.6	0.22	2.71	0.995	0.008	0.6	6.1			0.476
DAKS	5.6	0.22	2.71	0.995	0.008	0.9	6.1			0.471
DAKS	5.6	0.22	2.71	0.995	0.008	2.8	6.1			0.449
DAKS	5.6	0.22	2.71	0.995	0.008	4.1	6.1			0.428
DAKS	5.6	0.22	2.71	0.995	0.008	6.1	6.1			0.400
DAKS	5.6	0.22	2.71	0.995	0.008	0.0	5.0			0.500
DAKS	5.6	0.22	2.71	0.995	0.008	0.4	5.0			0.509
DAKS	5.6	0.22	2.71	0.995	0.008	1.8	5.0			0.500
DAKS	5.6	0.22	2.71	0.995	0.008	2.6	5.0			0.495
DAKS	5.6	0.22	2.71	0.995	0.008	3.5	5.0			0.481
DAKS	5.6	0.22	2.71	0.995	0.008	5.9	5.0			0.445
DAKS	5.6	0.22	2.71	0.995	0.008	0.0	4.3			0.540
DAKS	5.6	0.22	2.71	0.995	0.008	0.2	4.3			0.562
DAKS	5.6	0.22	2.71	0.995	0.008	1.2	4.3			0.545
DAKS	5.6	0.22	2.71	0.995	0.008	2.7	4.3			0.530
DAKS	5.6	0.22	2.71	0.995	0.008	4.2	4.3			0.520
DAKS	5.6	0.22	2.71	0.995	0.008	6.3	4.3			0.486
DAKS	5.6	0.33	2.40	0.995	0.008	0.0	9.0			0.416
DAKS	5.6	0.33	2.40	0.995	0.008	0.3	9.0			0.416
DAKS	5.6	0.33	2.40	0.995	0.008	1.0	9.0			0.413
DAKS	5.6	0.33	2.40	0.995	0.008	2.0	9.0			0.402
DAKS	5.6	0.33	2.40	0.995	0.008	3.2	9.0			0.386
DAKS	5.6	0.33	2.40	0.995	0.008	4.6	9.0			0.367
DAKS	5.6	0.33	2.40	0.995	0.008	0.0	8.0			0.451
DAKS	5.6	0.33	2.40	0.995	0.008	0.3	8.0			0.450
DAKS	5.6	0.33	2.40	0.995	0.008	1.0	8.0			0.442
DAKS	5.6	0.33	2.40	0.995	0.008	2.0	8.0			0.432
DAKS	5.6	0.33	2.40	0.995	0.008	3.2	8.0			0.414
DAKS	5.6	0.33	2.40	0.995	0.008	4.6	8.0			0.402
DAKS	5.6	0.33	2.40	0.995	0.008	0.0	7.2			0.490
DAKS	5.6	0.33	2.40	0.995	0.008	0.3	7.2			0.494
DAKS	5.6	0.33	2.40	0.995	0.008	1.0	7.2			0.484
DAKS	5.6	0.33	2.40	0.995	0.008	2.0	7.2			0.454
DAKS	5.6	0.33	2.40	0.995	0.008	3.2	7.2			0.442
DAKS	5.6	0.33	2.40	0.995	0.008	4.6	7.2			0.431
DAKS	5.6	0.33	2.40	0.995	0.008	0.0	6.6			0.510
DAKS	5.6	0.33	2.40	0.995	0.008	0.3	6.6			0.516
DAKS	5.6	0.33	2.40	0.995	0.008	1.0	6.6			0.504
DAKS	5.6	0.33	2.40	0.995	0.008	2.0	6.6			0.494
DAKS	5.6	0.33	2.40	0.995	0.008	3.2	6.6			0.478
DAKS	5.6	0.33	2.40	0.995	0.008	4.6	6.6			0.463
DAKS	5.6	0.33	2.40	0.995	0.008	0.0	6.1			0.563
DAKS	5.6	0.33	2.40	0.995	0.008	1.0	6.1			0.559
DAKS	5.6	0.33	2.40	0.995	0.008	1.2	6.1			0.550
DAKS	5.6	0.33	2.40	0.995	0.008	1.3	6.1			0.541
DAKS	5.6	0.33	2.40	0.995	0.008	2.6	6.1			0.520

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.33	2.40	0.995	0.008	3.6	6.1			0.504
DAKS	5.6	0.33	2.40	0.995	0.008	4.6	6.1			0.494
OST	7.6	0.05	2.83	0.999	0.011	0.0	2.8			0.258
OST	7.6	0.05	2.83	0.999	0.011	0.2	2.8			0.310
OST	0.0	0.05	2.83	0.999	0.011	0.6	2.8			0.314
OST	0.0	0.05	2.83	0.999	0.011	0.9	2.8			0.314
OST	0.0	0.05	2.83	0.999	0.011	0.0	2.6			0.295
OST	0.0	0.05	2.83	0.999	0.011	0.2	2.6			0.331
OST	0.0	0.05	2.83	0.999	0.011	0.6	2.6			0.340
OST	0.0	0.05	2.83	0.999	0.011	0.9	2.6			0.337
OST	0.0	0.05	2.83	0.999	0.011	0.0	2.3			0.320
OST	0.0	0.05	2.83	0.999	0.011	0.2	2.3			0.354
OST	0.0	0.05	2.83	0.999	0.011	0.6	2.3			0.366
OST	0.0	0.05	2.83	0.999	0.011	0.9	2.3			0.364
OST	0.0	0.05	2.83	0.999	0.011	0.0	2.0			0.350
OST	0.0	0.05	2.83	0.999	0.011	0.2	2.0			0.378
OST	0.0	0.05	2.83	0.999	0.011	0.6	2.0			0.387
OST	0.0	0.05	2.83	0.999	0.011	0.9	2.0			0.389
OST	0.0	0.05	2.83	0.999	0.011	0.0	1.7			0.376
OST	0.0	0.05	2.83	0.999	0.011	0.2	1.7			0.406
OST	0.0	0.05	2.83	0.999	0.011	0.6	1.7			0.412
OST	0.0	0.05	2.83	0.999	0.011	0.9	1.7			0.413
OST	0.0	0.05	2.83	0.999	0.011	0.0	1.4			0.408
OST	0.0	0.05	2.83	0.999	0.011	0.2	1.4			0.425
OST	0.0	0.05	2.83	0.999	0.011	0.6	1.4			0.430
OST	0.0	0.05	2.83	0.999	0.011	0.9	1.4			0.447
OST	0.0	0.05	2.83	0.999	0.011	0.0	1.1			0.457
OST	0.0	0.05	2.83	0.999	0.011	0.2	1.1			0.460
OST	0.0	0.05	2.83	0.999	0.011	0.6	1.1			0.466
OST	0.0	0.05	2.83	0.999	0.011	0.9	1.1			0.476
OST	0.0	0.03	2.40	0.998	0.009	0.0	1.9			0.177
OST	0.0	0.03	2.40	0.998	0.009	0.4	1.9			0.231
OST	0.0	0.03	2.40	0.998	0.009	0.7	1.9			0.260
OST	0.0	0.03	2.40	0.998	0.009	1.1	1.9			0.265
OST	0.0	0.03	2.40	0.998	0.009	1.3	1.9			0.283
OST	0.0	0.03	2.40	0.998	0.009	1.8	1.9			0.282
OST	0.0	0.03	2.40	0.998	0.009	0.0	1.1			0.307
OST	0.0	0.03	2.40	0.998	0.009	0.4	1.1			0.333
OST	0.0	0.03	2.40	0.998	0.009	0.7	1.1			0.342
OST	0.0	0.03	2.40	0.998	0.009	1.1	1.1			0.353
OST	0.0	0.03	2.40	0.998	0.009	1.3	1.1			0.355
OST	0.0	0.03	2.40	0.998	0.009	1.8	1.1			0.354
OST	1.2	0.05	2.90	0.998	0.009	0.0	3.4			0.200
OST	1.2	0.05	2.90	0.998	0.009	0.0	3.4			0.203
OST	1.2	0.05	2.90	0.998	0.009	0.0	3.4			0.208
OST	1.2	0.05	2.90	0.998	0.009	0.1	3.4			0.211
OST	1.2	0.05	2.90	0.998	0.009	0.1	3.4			0.215
OST	1.2	0.05	2.90	0.998	0.009	0.1	3.4			0.218
OST	1.2	0.05	2.90	0.998	0.009	0.2	3.4			0.222
OST	1.2	0.05	2.90	0.998	0.009	0.2	3.4			0.227

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
OST	1.2	0.05	2.90	0.998	0.009	0.3	3.4			0.225
OST	1.2	0.05	2.90	0.998	0.009	0.4	3.4			0.229
OST	1.2	0.05	2.90	0.998	0.009	0.5	3.4			0.226
OST	1.2	0.05	2.90	0.998	0.009	0.0	2.9			0.239
OST	1.2	0.05	2.90	0.998	0.009	0.0	2.9			0.245
OST	1.2	0.05	2.90	0.998	0.009	0.0	2.9			0.248
OST	1.2	0.05	2.90	0.998	0.009	0.1	2.9			0.249
OST	1.2	0.05	2.90	0.998	0.009	0.1	2.9			0.251
OST	1.2	0.05	2.90	0.998	0.009	0.1	2.9			0.255
OST	1.2	0.05	2.90	0.998	0.009	0.2	2.9			0.255
OST	1.2	0.05	2.90	0.998	0.009	0.2	2.9			0.257
OST	1.2	0.05	2.90	0.998	0.009	0.3	2.9			0.259
OST	1.2	0.05	2.90	0.998	0.009	0.4	2.9			0.259
OST	1.2	0.05	2.90	0.998	0.009	0.5	2.9			0.257
OST	1.2	0.05	2.90	0.998	0.009	0.0	2.3			0.292
OST	1.2	0.05	2.90	0.998	0.009	0.0	2.3			0.303
OST	1.2	0.05	2.90	0.998	0.009	0.1	2.3			0.303
OST	1.2	0.05	2.90	0.998	0.009	0.1	2.3			0.304
OST	1.2	0.05	2.90	0.998	0.009	0.1	2.3			0.308
OST	1.2	0.05	2.90	0.998	0.009	0.2	2.3			0.309
OST	1.2	0.05	2.90	0.998	0.009	0.2	2.3			0.309
OST	1.2	0.05	2.90	0.998	0.009	0.3	2.3			0.309
OST	1.2	0.05	2.90	0.998	0.009	0.4	2.3			0.308
OST	1.2	0.05	2.90	0.998	0.009	0.5	2.3			0.304
KIM	4.8	0.60	2.30	0.960	0.014	0.0	7.7			0.502
KIM	4.8	0.60	2.30	0.960	0.014	1.5	7.7			0.502
KIM	4.8	0.60	2.30	0.960	0.014	3.4	7.7			0.479
KIM	4.8	0.60	2.30	0.960	0.014	9.9	7.7			0.422
KIM	4.8	0.60	2.30	0.960	0.014	16.3	7.7			0.371
KIM	4.8	0.60	2.30	0.960	0.014	0.0	3.8			0.611
KIM	4.8	0.60	2.30	0.960	0.014	1.5	3.8			0.601
KIM	4.8	0.60	2.30	0.960	0.014	3.4	3.8			0.582
KIM	4.8	0.60	2.30	0.960	0.014	9.9	3.8			0.545
KIM	4.8	0.60	2.30	0.960	0.014	16.3	3.8			0.488
KIM	4.8	0.60	2.30	1.090	0.024	0.0	7.7			0.482
KIM	4.8	0.60	2.30	1.090	0.024	1.5	7.7			0.464
KIM	4.8	0.60	2.30	1.090	0.024	5.7	7.7			0.416
KIM	4.8	0.60	2.30	1.090	0.024	11.3	7.7			0.384
KIM	4.8	0.60	2.30	1.090	0.024	16.3	7.7			0.351
KIM	4.8	0.60	2.30	1.090	0.024	0.0	3.8			0.600
KIM	4.8	0.60	2.30	1.090	0.024	1.5	3.8			0.576
KIM	4.8	0.60	2.30	1.090	0.024	5.7	3.8			0.544
KIM	4.8	0.60	2.30	1.090	0.024	11.3	3.8			0.482
KIM	4.8	0.60	2.30	1.090	0.024	16.3	3.8			0.445
KIM	4.8	0.60	2.30	1.000	0.200	0.0	7.7			0.355
KIM	4.8	0.60	2.30	1.000	0.200	1.5	7.7			0.336
KIM	4.8	0.60	2.30	1.000	0.200	5.7	7.7			0.313
KIM	4.8	0.60	2.30	1.000	0.200	11.3	7.7			0.313
KIM	4.8	0.60	2.30	1.000	0.200	0.0	3.8			0.487
KIM	4.8	0.60	2.30	1.000	0.200	1.5	3.8			0.487

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.60	2.30	1.000	0.200	5.7	3.8			0.464
KIM	4.8	0.60	2.30	1.000	0.200	11.3	3.8			0.431
KIM	4.8	0.60	2.30	1.000	0.200	16.3	3.8			0.421
KIM	4.8	0.60	2.30	1.000	0.010	0.0	7.7			0.512
KIM	4.8	0.60	2.30	1.000	0.010	1.5	7.7			0.512
KIM	4.8	0.60	2.30	1.000	0.010	5.7	7.7			0.479
KIM	4.8	0.60	2.30	1.000	0.010	11.3	7.7			0.441
KIM	4.8	0.60	2.30	1.000	0.010	16.3	7.7			0.408
KIM	4.8	0.60	2.30	1.000	0.010	0.0	3.8			0.615
KIM	4.8	0.60	2.30	1.000	0.010	1.5	3.8			0.611
KIM	4.8	0.60	2.30	1.000	0.010	5.7	3.8			0.573
KIM	4.8	0.60	2.30	1.000	0.010	11.3	3.8			0.549
KIM	4.8	0.60	2.30	1.000	0.010	16.3	3.8			0.535
KIM	4.8	0.60	2.30	1.170	0.076	0.0	7.7			0.445
KIM	4.8	0.60	2.30	1.170	0.076	1.5	7.7			0.426
KIM	4.8	0.60	2.30	1.170	0.076	5.7	7.7			0.375
KIM	4.8	0.60	2.30	1.170	0.076	11.3	7.7			0.341
KIM	4.8	0.60	2.30	1.170	0.076	16.3	7.7			0.341
KIM	4.8	0.60	2.30	1.170	0.076	0.0	3.8			0.548
KIM	4.8	0.60	2.30	1.170	0.076	1.5	3.8			0.539
KIM	4.8	0.60	2.30	1.170	0.076	5.7	3.8			0.478
KIM	4.8	0.60	2.30	1.170	0.076	11.3	3.8			0.421
KIM	4.8	0.60	2.30	1.170	0.076	16.3	3.8			0.384
KIM	4.8	0.60	2.30	1.000	0.700	0.0	7.7			0.285
KIM	4.8	0.60	2.30	1.000	0.700	1.5	7.7			0.290
KIM	4.8	0.60	2.30	1.000	0.700	2.9	7.7			0.294
KIM	4.8	0.60	2.30	1.000	0.700	5.7	7.7			0.299
KIM	4.8	0.60	2.30	1.000	0.700	8.6	7.7			0.304
KIM	4.8	0.60	2.30	1.000	0.700	0.0	3.8			0.407
KIM	4.8	0.60	2.30	1.000	0.700	1.5	3.8			0.416
KIM	4.8	0.60	2.30	1.000	0.700	2.9	3.8			0.421
KIM	4.8	0.60	2.30	1.000	0.700	5.7	3.8			0.431
KIM	4.8	0.60	2.30	1.000	0.700	10.8	3.8			0.421
KIM	4.8	0.26	2.52	1.090	0.014	0.0	7.7			0.495
KIM	4.8	0.26	2.52	1.090	0.014	1.4	7.7			0.495
KIM	4.8	0.26	2.52	1.090	0.014	2.9	7.7			0.445
KIM	4.8	0.26	2.52	1.090	0.014	5.7	7.7			0.435
KIM	4.8	0.26	2.52	1.090	0.014	0.0	3.8			0.575
KIM	4.8	0.26	2.52	1.090	0.014	1.4	3.8			0.565
KIM	4.8	0.26	2.52	1.090	0.014	2.9	3.8			0.555
KIM	4.8	0.26	2.52	1.090	0.014	5.7	3.8			0.445
KIM	4.8	0.26	2.52	1.090	0.024	0.0	7.7			0.360
KIM	4.8	0.26	2.52	1.090	0.024	1.4	7.7			0.350
KIM	4.8	0.26	2.52	1.090	0.024	2.8	7.7			0.335
KIM	4.8	0.26	2.52	1.090	0.024	5.6	7.7			0.330
KIM	4.8	0.26	2.52	1.090	0.024	0.0	3.8			0.535
KIM	4.8	0.26	2.52	1.090	0.024	1.4	3.8			0.530
KIM	4.8	0.26	2.52	1.090	0.024	2.8	3.8			0.525
KIM	4.8	0.26	2.52	1.090	0.024	5.6	3.8			0.510
KIM	4.8	0.26	2.52	1.090	0.085	0.0	7.7			0.415

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.26	2.52	1.090	0.085	0.8	7.7			0.415
KIM	4.8	0.26	2.52	1.090	0.085	1.4	7.7			0.415
KIM	4.8	0.26	2.52	1.090	0.085	2.8	7.7			0.410
KIM	4.8	0.26	2.52	1.090	0.085	5.5	7.7			0.390
KIM	4.8	0.26	2.52	1.090	0.085	0.0	3.8			0.560
KIM	4.8	0.26	2.52	1.090	0.085	0.8	3.8			0.570
KIM	4.8	0.26	2.52	1.090	0.085	1.4	3.8			0.575
KIM	4.8	0.26	2.52	1.090	0.085	2.8	3.8			0.560
KIM	4.8	0.26	2.52	1.090	0.085	5.5	3.8			0.475
KIM	4.8	0.26	2.52	1.090	0.010	0.0	7.7			0.440
KIM	4.8	0.26	2.52	1.090	0.010	1.5	7.7			0.430
KIM	4.8	0.26	2.52	1.090	0.010	3.0	7.7			0.420
KIM	4.8	0.26	2.52	1.090	0.010	5.1	7.7			0.405
KIM	4.8	0.26	2.52	1.090	0.010	6.1	7.7			0.400
KIM	4.8	0.26	2.52	1.090	0.010	0.0	3.8			0.585
KIM	4.8	0.26	2.52	1.090	0.010	1.5	3.8			0.570
KIM	4.8	0.26	2.52	1.090	0.010	3.0	3.8			0.555
KIM	4.8	0.26	2.52	1.090	0.010	6.1	3.8			0.540
KIM	4.8	0.26	2.52	1.170	0.076	0.0	7.7			0.255
KIM	4.8	0.26	2.52	1.170	0.076	1.5	7.7			0.250
KIM	4.8	0.26	2.52	1.170	0.076	2.8	7.7			0.245
KIM	4.8	0.26	2.52	1.170	0.076	0.0	3.8			0.475
KIM	4.8	0.26	2.52	1.170	0.076	1.5	3.8			0.460
KIM	4.8	0.26	2.52	1.170	0.076	2.8	3.8			0.440
KIM	4.8	0.26	2.52	1.170	0.076	5.8	3.8			0.395
KIM	4.8	0.26	2.52	1.000	0.200	0.0	7.7			0.320
KIM	4.8	0.26	2.52	1.000	0.200	0.7	7.7			0.325
KIM	4.8	0.26	2.52	1.000	0.200	1.4	7.7			0.330
KIM	4.8	0.26	2.52	1.000	0.200	2.8	7.7			0.330
KIM	4.8	0.26	2.52	1.000	0.200	5.8	7.7			0.315
KIM	4.8	0.26	2.52	1.000	0.200	0.0	3.8			0.465
KIM	4.8	0.26	2.52	1.000	0.200	0.7	3.8			0.480
KIM	4.8	0.26	2.52	1.000	0.200	1.4	3.8			0.480
KIM	4.8	0.26	2.52	1.000	0.200	2.8	3.8			0.465
KIM	4.8	0.26	2.52	1.000	0.200	5.8	3.8			0.440
KIM	4.8	0.10	2.95	1.000	0.010	0.0	5.4			0.317
KIM	4.8	0.10	2.95	1.000	0.010	0.7	5.4			0.352
KIM	4.8	0.10	2.95	1.000	0.010	1.4	5.4			0.378
KIM	4.8	0.10	2.95	1.000	0.010	3.1	5.4			0.391
KIM	4.8	0.10	2.95	1.000	0.010	5.6	5.4			0.391
KIM	4.8	0.10	2.95	1.000	0.010	0.0	3.8			0.404
KIM	4.8	0.10	2.95	1.000	0.010	0.7	3.8			0.435
KIM	4.8	0.10	2.95	1.000	0.010	1.4	3.8			0.457
KIM	4.8	0.10	2.95	1.000	0.010	3.1	3.8			0.474
KIM	4.8	0.10	2.95	1.000	0.010	5.6	3.8			0.470
KIM	4.8	0.10	2.95	1.090	0.024	0.0	7.6			0.217
KIM	4.8	0.10	2.95	1.090	0.024	0.7	7.6			0.230
KIM	4.8	0.10	2.95	1.090	0.024	1.4	7.6			0.248
KIM	4.8	0.10	2.95	1.090	0.024	3.1	7.6			0.270
KIM	4.8	0.10	2.95	1.090	0.024	5.6	7.6			0.265

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.10	2.95	1.090	0.024	0.0	3.8			0.413
KIM	4.8	0.10	2.95	1.090	0.024	0.7	3.8			0.435
KIM	4.8	0.10	2.95	1.090	0.024	1.4	3.8			0.443
KIM	4.8	0.10	2.95	1.090	0.024	3.1	3.8			0.465
KIM	4.8	0.10	2.95	1.090	0.024	5.6	3.8			0.391
KIM	4.8	0.10	2.95	1.000	0.057	0.0	7.6			0.199
KIM	4.8	0.10	2.95	1.000	0.057	0.7	7.6			0.230
KIM	4.8	0.10	2.95	1.000	0.057	1.4	7.6			0.248
KIM	4.8	0.10	2.95	1.000	0.057	3.1	7.6			0.278
KIM	4.8	0.10	2.95	1.000	0.057	5.6	7.6			0.261
KIM	4.8	0.10	2.95	1.000	0.057	0.0	5.4			0.361
KIM	4.8	0.10	2.95	1.000	0.057	0.7	5.4			0.374
KIM	4.8	0.10	2.95	1.000	0.057	1.4	5.4			0.370
KIM	4.8	0.10	2.95	1.000	0.057	3.1	5.4			0.370
KIM	4.8	0.10	2.95	1.000	0.057	5.6	5.4			0.343
KIM	4.8	0.10	2.95	0.960	0.014	0.0	7.6			0.174
KIM	4.8	0.10	2.95	0.960	0.014	0.7	7.6			0.204
KIM	4.8	0.10	2.95	0.960	0.014	1.4	7.6			0.217
KIM	4.8	0.10	2.95	0.960	0.014	3.1	7.6			0.220
KIM	4.8	0.10	2.95	0.960	0.014	5.6	7.6			0.235
KIM	4.8	0.10	2.95	0.960	0.014	0.0	5.4			0.296
KIM	4.8	0.10	2.95	0.960	0.014	0.7	5.4			0.322
KIM	4.8	0.10	2.95	0.960	0.014	1.4	5.4			0.330
KIM	4.8	0.10	2.95	0.960	0.014	3.1	5.4			0.343
KIM	4.8	0.10	2.95	0.960	0.014	5.6	5.4			0.348
KIM	4.8	0.10	2.95	1.150	0.046	0.0	7.6			0.144
KIM	4.8	0.10	2.95	1.150	0.046	0.7	7.6			0.170
KIM	4.8	0.10	2.95	1.150	0.046	1.4	7.6			0.191
KIM	4.8	0.10	2.95	1.150	0.046	3.1	7.6			0.209
KIM	4.8	0.10	2.95	1.150	0.046	5.6	7.6			0.191
KIM	4.8	0.10	2.95	1.150	0.046	0.0	5.4			0.287
KIM	4.8	0.10	2.95	1.150	0.046	0.7	5.4			0.304
KIM	4.8	0.10	2.95	1.150	0.046	1.4	5.4			0.304
KIM	4.8	0.10	2.95	1.150	0.046	3.1	5.4			0.296
KIM	4.8	0.10	2.95	1.150	0.046	5.6	5.4			0.291
KIM	4.8	0.10	2.95	1.000	0.063	0.0	7.6			0.122
KIM	4.8	0.10	2.95	1.000	0.063	0.7	7.6			0.170
KIM	4.8	0.10	2.95	1.000	0.063	1.4	7.6			0.213
KIM	4.8	0.10	2.95	1.000	0.063	3.1	7.6			0.222
KIM	4.8	0.10	2.95	1.000	0.063	5.6	7.6			0.191
KIM	4.8	0.10	2.95	1.000	0.063	0.0	5.4			0.274
KIM	4.8	0.10	2.95	1.000	0.063	0.7	5.4			0.309
KIM	4.8	0.10	2.95	1.000	0.063	1.4	5.4			0.326
KIM	4.8	0.10	2.95	1.000	0.063	3.1	5.4			0.300
KIM	4.8	0.10	2.95	1.000	0.063	5.6	5.4			0.278
EFVA	10.2	0.22	2.50	0.999	0.010	0.0	11.0			0.287
EFVA	10.2	0.22	2.50	0.999	0.010	0.2	11.0			0.287
EFVA	10.2	0.22	2.50	0.999	0.010	0.4	11.0			0.281
EFVA	10.2	0.22	2.50	0.999	0.010	0.7	11.0			0.287
EFVA	10.2	0.22	2.50	0.999	0.010	1.0	11.0			0.290

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
EFVA	10.2	0.22	2.50	0.999	0.010	1.3	11.0			0.290
EFVA	10.2	0.22	2.50	0.999	0.010	2.4	11.0			0.296
EFVA	10.2	0.22	2.50	0.999	0.010	3.3	11.0			0.291
EFVA	10.2	0.22	2.50	0.999	0.010	0.0	8.5			0.365
EFVA	10.2	0.22	2.50	0.999	0.010	0.2	8.5			0.366
EFVA	10.2	0.22	2.50	0.999	0.010	0.4	8.5			0.362
EFVA	10.2	0.22	2.50	0.999	0.010	0.7	8.5			0.369
EFVA	10.2	0.22	2.50	0.999	0.010	0.9	8.5			0.366
EFVA	10.2	0.22	2.50	0.999	0.010	1.3	8.5			0.362
EFVA	10.2	0.22	2.50	0.999	0.010	2.4	8.5			0.362
EFVA	10.2	0.22	2.50	0.999	0.010	3.3	8.5			0.362
EFVA	10.2	0.22	2.50	0.999	0.010	0.0	6.2			0.461
EFVA	10.2	0.22	2.50	0.999	0.010	0.2	6.2			0.455
EFVA	10.2	0.22	2.50	0.999	0.010	0.4	6.2			0.458
EFVA	10.2	0.22	2.50	0.999	0.010	0.7	6.2			0.461
EFVA	10.2	0.22	2.50	0.999	0.010	0.9	6.2			0.460
EFVA	10.2	0.22	2.50	0.999	0.010	1.3	6.2			0.451
EFVA	10.2	0.22	2.50	0.999	0.010	2.2	6.2			0.442
EFVA	10.2	0.22	2.50	0.999	0.010	3.2	6.2			0.442
EFVA	10.0	0.21	2.46	0.995	0.010	0.0	7.3			0.418
EFVA	10.0	0.21	2.46	0.995	0.010	0.2	7.3			0.416
EFVA	10.0	0.21	2.46	0.995	0.010	0.4	7.3			0.412
EFVA	10.0	0.21	2.46	0.995	0.010	0.6	7.3			0.415
EFVA	10.0	0.21	2.46	0.995	0.010	1.1	7.3			0.418
EFVA	10.0	0.21	2.46	0.995	0.010	1.7	7.3			0.413
EFVA	10.0	0.21	2.46	0.995	0.010	2.5	7.3			0.413
EFVA	10.0	0.21	2.46	0.995	0.010	3.1	7.3			0.408
EFVA	10.0	0.21	2.46	0.995	0.010	0.0	4.2			0.506
EFVA	10.0	0.21	2.46	0.995	0.010	0.1	4.2			0.504
EFVA	10.0	0.21	2.46	0.995	0.010	0.3	4.2			0.501
EFVA	10.0	0.21	2.46	0.995	0.010	0.6	4.2			0.506
EFVA	10.0	0.21	2.46	0.995	0.010	1.1	4.2			0.504
EFVA	10.0	0.21	2.46	0.995	0.010	1.7	4.2			0.496
EFVA	10.0	0.21	2.46	0.995	0.010	2.5	4.2			0.499
EFVA	10.0	0.21	2.46	0.995	0.010	3.1	4.2			0.494
EFVA	10.0	0.06	2.46	0.999	0.010	0.0	2.4			0.325
EFVA	10.0	0.06	2.46	0.999	0.010	0.3	2.4			0.346
EFVA	10.0	0.06	2.46	0.999	0.010	0.5	2.4			0.362
EFVA	10.0	0.06	2.46	0.999	0.010	0.9	2.4			0.364
EFVA	10.0	0.06	2.46	0.999	0.010	1.2	2.4			0.365
EFVA	10.0	0.06	2.46	0.999	0.010	1.8	2.4			0.367
EFVA	10.0	0.06	2.46	0.999	0.010	2.3	2.4			0.367
EFVA	10.2	0.06	2.94	0.999	0.010	0.0	1.6			0.405
EFVA	10.2	0.06	2.94	0.999	0.010	0.2	1.6			0.441
EFVA	10.2	0.06	2.94	0.999	0.010	0.4	1.6			0.444
EFVA	10.2	0.06	2.94	0.999	0.010	0.7	1.6			0.433
EFVA	10.2	0.06	2.94	0.999	0.010	0.9	1.6			0.436
EFVA	10.2	0.06	2.94	0.999	0.010	1.4	1.6			0.435
EFVA	10.2	0.06	2.94	0.999	0.010	1.7	1.6			0.433
EFVA	10.0	0.06	2.46	0.999	0.010	0.0	5.2			0.165

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
EFVA	10.0	0.06	2.46	0.999	0.010	0.3	5.2			0.212
EFVA	10.0	0.06	2.46	0.999	0.010	0.6	5.2			0.221
EFVA	10.0	0.06	2.46	0.999	0.010	0.9	5.2			0.233
EFVA	10.0	0.06	2.46	0.999	0.010	1.3	5.2			0.237
EFVA	10.0	0.06	2.46	0.999	0.010	1.8	5.2			0.239
EFVA	10.0	0.06	2.46	0.999	0.010	2.3	5.2			0.240
EFVA	10.2	0.06	2.94	0.999	0.010	0.0	3.6			0.200
EFVA	10.2	0.06	2.94	0.999	0.010	0.2	3.6			0.271
EFVA	10.2	0.06	2.94	0.999	0.010	0.4	3.6			0.273
EFVA	10.2	0.06	2.94	0.999	0.010	0.7	3.6			0.276
EFVA	10.2	0.06	2.94	0.999	0.010	0.9	3.6			0.282
EFVA	10.2	0.06	2.94	0.999	0.010	1.4	3.6			0.283
EFVA	10.2	0.06	2.94	0.999	0.010	1.8	3.6			0.282
EFVA	10.2	0.06	2.94	0.999	0.010	1.9	3.6			0.282
DAKS	5.6	0.33	2.40	0.800	0.017	0.0	10.6			0.400
DAKS	5.6	0.33	2.40	0.800	0.017	0.5	10.6			0.388
DAKS	5.6	0.33	2.40	0.800	0.017	0.9	10.6			0.390
DAKS	5.6	0.33	2.40	0.800	0.017	1.2	10.6			0.372
DAKS	5.6	0.33	2.40	0.800	0.017	1.9	10.6			0.354
DAKS	5.6	0.33	2.40	0.800	0.017	2.6	10.6			0.343
DAKS	5.6	0.33	2.40	0.800	0.017	3.4	10.6			0.324
DAKS	5.6	0.33	2.40	0.800	0.017	4.7	10.6			0.300
DAKS	5.6	0.33	2.40	0.800	0.017	0.0	9.5			0.437
DAKS	5.6	0.33	2.40	0.800	0.017	0.5	9.5			0.424
DAKS	5.6	0.33	2.40	0.800	0.017	0.9	9.5			0.412
DAKS	5.6	0.33	2.40	0.800	0.017	1.2	9.5			0.398
DAKS	5.6	0.33	2.40	0.800	0.017	1.9	9.5			0.384
DAKS	5.6	0.33	2.40	0.800	0.017	2.6	9.5			0.369
DAKS	5.6	0.33	2.40	0.800	0.017	3.3	9.5			0.354
DAKS	5.6	0.33	2.40	0.800	0.017	4.7	9.5			0.310
DAKS	5.6	0.33	2.40	0.800	0.017	0.0	8.4			0.453
DAKS	5.6	0.33	2.40	0.800	0.017	0.5	8.4			0.446
DAKS	5.6	0.33	2.40	0.800	0.017	0.9	8.4			0.440
DAKS	5.6	0.33	2.40	0.800	0.017	1.2	8.4			0.428
DAKS	5.6	0.33	2.40	0.800	0.017	1.9	8.4			0.403
DAKS	5.6	0.33	2.40	0.800	0.017	2.6	8.4			0.391
DAKS	5.6	0.33	2.40	0.800	0.017	3.4	8.9			0.370
DAKS	5.6	0.33	2.40	0.800	0.017	4.8	8.4			0.332
DAKS	5.6	0.33	2.40	0.800	0.017	0.0	7.6			0.500
DAKS	5.6	0.33	2.40	0.800	0.017	0.5	7.6			0.482
DAKS	5.6	0.33	2.40	0.800	0.017	0.9	7.6			0.472
DAKS	5.6	0.33	2.40	0.800	0.017	1.2	7.6			0.462
DAKS	5.6	0.33	2.40	0.800	0.017	1.8	7.6			0.434
DAKS	5.6	0.33	2.40	0.800	0.017	2.6	7.6			0.400
DAKS	5.6	0.33	2.40	0.800	0.017	3.4	7.6			0.387
DAKS	5.6	0.33	2.40	0.800	0.017	4.8	7.6			0.357
DAKS	5.6	0.33	2.40	0.800	0.017	0.0	6.8			0.526
DAKS	5.6	0.33	2.40	0.800	0.017	0.5	6.8			0.500
DAKS	5.6	0.33	2.40	0.800	0.017	0.9	6.8			0.497
DAKS	5.6	0.33	2.40	0.800	0.017	1.2	6.8			0.484

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.33	2.40	0.800	0.017	1.8	6.8			0.454
DAKS	5.6	0.33	2.40	0.800	0.017	2.6	6.8			0.437
DAKS	5.6	0.33	2.40	0.800	0.017	3.4	6.8			0.409
DAKS	5.6	0.33	2.40	0.800	0.017	4.7	6.8			0.378
DAKS	5.6	0.68	2.40	0.995	0.008	0.0	12.9			0.448
DAKS	5.6	0.68	2.40	0.995	0.008	1.0	12.9			0.438
DAKS	5.6	0.68	2.40	0.995	0.008	1.8	12.9			0.414
DAKS	5.6	0.68	2.40	0.995	0.008	2.8	12.9			0.408
DAKS	5.6	0.68	2.40	0.995	0.008	3.3	12.9			0.391
DAKS	5.6	0.68	2.40	0.995	0.008	4.1	12.9			0.361
DAKS	5.6	0.68	2.40	0.995	0.008	0.0	10.8			0.524
DAKS	5.6	0.68	2.40	0.995	0.008	1.0	10.8			0.514
DAKS	5.6	0.68	2.40	0.995	0.008	1.8	10.8			0.509
DAKS	5.6	0.68	2.40	0.995	0.008	2.8	10.8			0.495
DAKS	5.6	0.68	2.40	0.995	0.008	3.3	10.8			0.480
DAKS	5.6	0.68	2.40	0.995	0.008	0.0	10.0			0.556
DAKS	5.6	0.68	2.40	0.995	0.008	0.6	10.0			0.550
DAKS	5.6	0.68	2.40	0.995	0.008	0.8	10.0			0.544
DAKS	5.6	0.68	2.40	0.995	0.008	1.0	10.0			0.550
DAKS	5.6	0.68	2.40	0.995	0.008	1.8	10.0			0.536
DAKS	5.6	0.68	2.40	0.995	0.008	2.8	10.0			0.518
DAKS	5.6	0.68	2.40	0.995	0.008	0.0	9.0			0.580
DAKS	5.6	0.68	2.40	0.995	0.008	0.6	9.0			0.570
DAKS	5.6	0.68	2.40	0.995	0.008	0.8	9.0			0.565
DAKS	5.6	0.68	2.40	0.995	0.008	1.0	9.0			0.562
DAKS	5.6	0.68	2.40	0.995	0.008	1.8	9.0			0.553
DAKS	5.6	0.68	2.40	0.995	0.008	2.8	9.0			0.540
DAKS	5.6	0.68	2.40	0.995	0.008	0.0	8.0			0.609
DAKS	5.6	0.68	2.40	0.995	0.008	0.6	8.0			0.591
DAKS	5.6	0.68	2.40	0.995	0.008	0.8	8.0			0.589
DAKS	5.6	0.68	2.40	0.995	0.008	1.0	8.0			0.586
DAKS	5.6	0.68	2.40	0.995	0.008	1.8	8.0			0.573
DAKS	5.6	0.68	2.40	0.995	0.008	2.8	8.0			0.564
DAKS	5.6	0.68	2.40	0.800	0.017	0.0	14.6			0.452
DAKS	5.6	0.68	2.40	0.800	0.017	0.6	14.6			0.452
DAKS	5.6	0.68	2.40	0.800	0.017	1.0	14.6			0.448
DAKS	5.6	0.68	2.40	0.800	0.017	1.4	14.6			0.444
DAKS	5.6	0.68	2.40	0.800	0.017	1.9	14.6			0.439
DAKS	5.6	0.68	2.40	0.800	0.017	2.7	14.6			0.409
DAKS	5.6	0.68	2.40	0.800	0.017	3.4	14.6			0.398
DAKS	5.6	0.68	2.40	0.800	0.017	4.9	14.6			0.382
DAKS	5.6	0.68	2.40	0.800	0.017	0.0	12.3			0.530
DAKS	5.6	0.68	2.40	0.800	0.017	0.6	12.3			0.524
DAKS	5.6	0.68	2.40	0.800	0.017	1.0	12.3			0.515
DAKS	5.6	0.68	2.40	0.800	0.017	1.4	12.3			0.509
DAKS	5.6	0.68	2.40	0.800	0.017	1.9	12.3			0.498
DAKS	5.6	0.68	2.40	0.800	0.017	2.7	12.3			0.470
DAKS	5.6	0.68	2.40	0.800	0.017	3.4	12.3			0.455
DAKS	5.6	0.68	2.40	0.800	0.017	4.9	12.3			0.439
DAKS	5.6	0.68	2.40	0.800	0.017	0.0	11.2			0.561

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.68	2.40	0.800	0.017	0.6	11.2			0.552
DAKS	5.6	0.68	2.40	0.800	0.017	1.0	11.2			0.539
DAKS	5.6	0.68	2.40	0.800	0.017	1.4	11.2			0.536
DAKS	5.6	0.68	2.40	0.800	0.017	1.9	11.2			0.526
DAKS	5.6	0.68	2.40	0.800	0.017	2.7	11.2			0.491
DAKS	5.6	0.68	2.40	0.800	0.017	3.4	11.2			0.477
DAKS	5.6	0.68	2.40	0.800	0.017	4.9	11.2			0.465
DAKS	5.6	0.68	2.40	0.800	0.017	0.0	10.5			0.591
DAKS	5.6	0.68	2.40	0.800	0.017	0.6	10.5			0.574
DAKS	5.6	0.68	2.40	0.800	0.017	1.0	10.5			0.570
DAKS	5.6	0.68	2.40	0.800	0.017	1.4	10.5			0.567
DAKS	5.6	0.68	2.40	0.800	0.017	1.9	10.5			0.552
DAKS	5.6	0.68	2.40	0.800	0.017	2.7	10.5			0.517
DAKS	5.6	0.68	2.40	0.800	0.017	3.4	10.5			0.500
DAKS	5.6	0.68	2.40	0.800	0.017	4.8	10.5			0.483
DAKS	5.6	0.68	2.40	0.800	0.017	0.0	9.5			0.635
DAKS	5.6	0.68	2.40	0.800	0.017	0.6	9.5			0.618
DAKS	5.6	0.68	2.40	0.800	0.017	1.0	9.5			0.602
DAKS	5.6	0.68	2.40	0.800	0.017	1.4	9.5			0.591
DAKS	5.6	0.68	2.40	0.800	0.017	1.9	9.5			0.576
DAKS	5.6	0.68	2.40	0.800	0.017	2.7	9.5			0.539
DAKS	5.6	0.68	2.40	0.800	0.017	3.4	9.5			0.524
DAKS	5.6	0.68	2.40	0.800	0.017	4.9	9.5			0.494
DAKS	5.6	0.49	2.26	0.995	0.008	0.0	11.9			0.459
DAKS	5.6	0.49	2.26	0.995	0.008	0.6	11.9			0.444
DAKS	5.6	0.49	2.26	0.995	0.008	0.8	11.9			0.428
DAKS	5.6	0.49	2.26	0.995	0.008	1.2	11.9			0.415
DAKS	5.6	0.49	2.26	0.995	0.008	1.8	11.9			0.412
DAKS	5.6	0.49	2.26	0.995	0.008	2.5	11.9			0.395
DAKS	5.6	0.49	2.26	0.995	0.008	3.0	11.9			0.385
DAKS	5.6	0.49	2.26	0.995	0.008	3.5	11.9			0.358
DAKS	5.6	0.49	2.26	0.995	0.008	4.0	11.9			0.342
DAKS	5.6	0.49	2.26	0.995	0.008	0.0	11.3			0.488
DAKS	5.6	0.49	2.26	0.995	0.008	0.6	11.3			0.467
DAKS	5.6	0.49	2.26	0.995	0.008	0.8	11.3			0.464
DAKS	5.6	0.49	2.26	0.995	0.008	1.2	11.3			0.458
DAKS	5.6	0.49	2.26	0.995	0.008	1.8	11.3			0.439
DAKS	5.6	0.49	2.26	0.995	0.008	2.5	11.3			0.417
DAKS	5.6	0.49	2.26	0.995	0.008	3.0	11.3			0.406
DAKS	5.6	0.49	2.26	0.995	0.008	3.5	11.2			0.379
DAKS	5.6	0.49	2.26	0.995	0.008	4.0	11.3			0.368
DAKS	5.6	0.49	2.26	0.995	0.008	0.0	10.5			0.500
DAKS	5.6	0.49	2.26	0.995	0.008	0.6	10.5			0.491
DAKS	5.6	0.49	2.26	0.995	0.008	0.8	10.5			0.482
DAKS	5.6	0.49	2.26	0.995	0.008	1.2	10.5			0.471
DAKS	5.6	0.49	2.26	0.995	0.008	1.8	10.5			0.455
DAKS	5.6	0.49	2.26	0.995	0.008	2.5	10.5			0.448
DAKS	5.6	0.49	2.26	0.995	0.008	3.0	10.5			0.423
DAKS	5.6	0.49	2.26	0.995	0.008	3.5	10.5			0.414
DAKS	5.6	0.49	2.26	0.995	0.008	4.0	10.5			0.394

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.49	2.26	0.995	0.008	0.0	9.0			0.550
DAKS	5.6	0.49	2.26	0.995	0.008	0.6	9.0			0.526
DAKS	5.6	0.49	2.26	0.995	0.008	0.8	9.0			0.520
DAKS	5.6	0.49	2.26	0.995	0.008	1.2	9.0			0.509
DAKS	5.6	0.49	2.26	0.995	0.008	1.8	9.0			0.500
DAKS	5.6	0.49	2.26	0.995	0.008	2.5	9.0			0.471
DAKS	5.6	0.49	2.26	0.995	0.008	3.0	9.0			0.461
DAKS	5.6	0.49	2.26	0.995	0.008	3.5	9.0			0.445
DAKS	5.6	0.49	2.26	0.995	0.008	4.0	9.0			0.429
DAKS	5.6	0.49	2.26	0.995	0.008	0.0	8.0			0.579
DAKS	5.6	0.49	2.26	0.995	0.008	0.6	8.0			0.550
DAKS	5.6	0.49	2.26	0.995	0.008	0.8	8.0			0.541
DAKS	5.6	0.49	2.26	0.995	0.008	1.2	8.0			0.529
DAKS	5.6	0.49	2.26	0.995	0.008	1.8	8.0			0.511
DAKS	5.6	0.49	2.26	0.995	0.008	2.5	8.0			0.511
DAKS	5.6	0.49	2.26	0.995	0.008	3.0	8.0			0.499
DAKS	5.6	0.49	2.26	0.995	0.008	3.5	8.0			0.483
DAKS	5.6	0.49	2.26	0.995	0.008	4.0	8.0			0.464
DAKS	5.6	0.49	2.26	0.800	0.017	0.0	10.9			0.554
DAKS	5.6	0.49	2.26	0.800	0.017	0.5	10.9			0.535
DAKS	5.6	0.49	2.26	0.800	0.017	1.0	10.9			0.521
DAKS	5.6	0.49	2.26	0.800	0.017	1.3	10.9			0.506
DAKS	5.6	0.49	2.26	0.800	0.017	1.9	10.9			0.502
DAKS	5.6	0.49	2.26	0.800	0.017	2.7	10.9			0.489
DAKS	5.6	0.49	2.26	0.800	0.017	3.5	10.9			0.475
DAKS	5.6	0.49	2.26	0.800	0.017	4.8	10.9			0.448
DAKS	5.6	0.49	2.26	0.800	0.017	0.0	10.2			0.580
DAKS	5.6	0.49	2.26	0.800	0.017	0.5	10.2			0.561
DAKS	5.6	0.49	2.26	0.800	0.017	1.0	10.2			0.551
DAKS	5.6	0.49	2.26	0.800	0.017	1.3	10.2			0.541
DAKS	5.6	0.49	2.26	0.800	0.017	1.9	10.2			0.529
DAKS	5.6	0.49	2.26	0.800	0.017	2.7	10.2			0.521
DAKS	5.6	0.49	2.26	0.800	0.017	3.5	10.2			0.501
DAKS	5.6	0.49	2.26	0.800	0.017	4.8	10.2			0.469
DAKS	5.6	0.49	2.26	0.800	0.017	0.0	9.0			0.602
DAKS	5.6	0.49	2.26	0.800	0.017	0.5	9.0			0.600
DAKS	5.6	0.49	2.26	0.800	0.017	1.0	9.0			0.585
DAKS	5.6	0.49	2.26	0.800	0.017	1.3	9.0			0.572
DAKS	5.6	0.49	2.26	0.800	0.017	1.9	9.0			0.558
DAKS	5.6	0.49	2.26	0.800	0.017	2.7	9.0			0.537
DAKS	5.6	0.49	2.26	0.800	0.017	3.5	9.0			0.520
DAKS	5.6	0.49	2.26	0.800	0.017	4.8	9.0			0.496
DAKS	5.6	0.49	2.26	0.800	0.017	0.0	7.8			0.649
DAKS	5.6	0.49	2.26	0.800	0.017	0.5	7.8			0.621
DAKS	5.6	0.49	2.26	0.800	0.017	1.0	7.8			0.599
DAKS	5.6	0.49	2.26	0.800	0.017	1.3	7.8			0.598
DAKS	5.6	0.49	2.26	0.800	0.017	1.9	7.8			0.583
DAKS	5.6	0.49	2.26	0.800	0.017	2.7	7.8			0.566
DAKS	5.6	0.49	2.26	0.800	0.017	3.5	7.8			0.547
DAKS	5.6	0.49	2.26	0.800	0.017	4.8	7.8			0.515

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.49	2.26	0.800	0.017	0.0	6.8			0.686
DAKS	5.6	0.49	2.26	0.800	0.017	0.5	6.8			0.666
DAKS	5.6	0.49	2.26	0.800	0.017	1.0	6.8			0.640
DAKS	5.6	0.49	2.26	0.800	0.017	1.3	6.8			0.632
DAKS	5.6	0.49	2.26	0.800	0.017	1.9	6.8			0.618
DAKS	5.6	0.49	2.26	0.800	0.017	2.7	6.8			0.595
DAKS	5.6	0.49	2.26	0.800	0.017	3.5	6.8			0.571
DAKS	5.6	0.49	2.26	0.800	0.017	4.8	6.8			0.540
DAKS	5.6	0.30	7.71	0.995	0.008	0.0	15.1			0.542
DAKS	5.6	0.30	7.71	0.995	0.008	0.6	15.1			0.528
DAKS	5.6	0.30	7.71	0.995	0.008	1.0	15.1			0.516
DAKS	5.6	0.30	7.71	0.995	0.008	1.4	15.1			0.511
DAKS	5.6	0.30	7.71	0.995	0.008	1.9	15.1			0.509
DAKS	5.6	0.30	7.71	0.995	0.008	2.6	15.1			0.484
DAKS	5.6	0.30	7.71	0.995	0.008	3.4	15.1			0.473
DAKS	5.6	0.30	7.71	0.995	0.008	4.7	15.1			0.461
DAKS	5.6	0.30	7.71	0.995	0.008	0.0	12.9			0.573
DAKS	5.6	0.30	7.71	0.995	0.008	0.6	12.9			0.567
DAKS	5.6	0.30	7.71	0.995	0.008	1.0	12.9			0.561
DAKS	5.6	0.30	7.71	0.995	0.008	1.4	12.9			0.558
DAKS	5.6	0.30	7.71	0.995	0.008	1.9	12.9			0.549
DAKS	5.6	0.30	7.71	0.995	0.008	2.6	12.9			0.520
DAKS	5.6	0.30	7.71	0.995	0.008	3.4	12.9			0.497
DAKS	5.6	0.30	7.71	0.995	0.008	4.7	12.9			0.476
DAKS	5.6	0.30	7.71	0.995	0.008	0.0	11.9			0.600
DAKS	5.6	0.30	7.71	0.995	0.008	0.6	11.9			0.600
DAKS	5.6	0.30	7.71	0.995	0.008	1.0	11.9			0.596
DAKS	5.6	0.30	7.71	0.995	0.008	1.4	11.9			0.591
DAKS	5.6	0.30	7.71	0.995	0.008	2.6	11.9			0.546
DAKS	5.6	0.30	7.71	0.995	0.008	3.4	11.9			0.532
DAKS	5.6	0.30	7.71	0.995	0.008	4.7	11.9			0.516
DAKS	5.6	0.30	7.71	0.995	0.008	0.0	11.3			0.633
DAKS	5.6	0.30	7.71	0.995	0.008	0.6	11.3			0.615
DAKS	5.6	0.30	7.71	0.995	0.008	1.0	11.3			0.605
DAKS	5.6	0.30	7.71	0.995	0.008	1.4	11.3			0.600
DAKS	5.6	0.30	7.71	0.995	0.008	1.9	11.3			0.590
DAKS	5.6	0.30	7.71	0.995	0.008	2.6	11.3			0.566
DAKS	5.6	0.30	7.71	0.995	0.008	3.4	11.3			0.552
DAKS	5.6	0.30	7.71	0.995	0.008	4.7	11.3			0.525
DAKS	5.6	0.30	7.71	0.800	0.017	0.0	18.9			0.548
DAKS	5.6	0.30	7.71	0.800	0.017	0.3	18.9			0.528
DAKS	5.6	0.30	7.71	0.800	0.017	0.8	18.9			0.522
DAKS	5.6	0.30	7.71	0.800	0.017	1.3	18.9			0.517
DAKS	5.6	0.30	7.71	0.800	0.017	1.9	18.9			0.504
DAKS	5.6	0.30	7.71	0.800	0.017	3.0	18.9			0.500
DAKS	5.6	0.30	7.71	0.800	0.017	3.4	18.9			0.498
DAKS	5.6	0.30	7.71	0.800	0.017	4.1	18.9			0.489
DAKS	5.6	0.30	7.71	0.800	0.017	0.0	15.1			0.581
DAKS	5.6	0.30	7.71	0.800	0.017	0.3	15.1			0.564
DAKS	5.6	0.30	7.71	0.800	0.017	0.8	15.1			0.562

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
DAKS	5.6	0.30	7.71	0.800	0.017	1.3	15.1			0.553
DAKS	5.6	0.30	7.71	0.800	0.017	2.0	15.1			0.528
DAKS	5.6	0.30	7.71	0.800	0.017	3.0	15.1			0.533
DAKS	5.6	0.30	7.71	0.800	0.017	3.4	15.1			0.522
DAKS	5.6	0.30	7.71	0.800	0.017	4.1	15.1			0.508
DAKS	5.6	0.30	7.71	0.800	0.017	0.0	13.5			0.600
DAKS	5.6	0.30	7.71	0.800	0.017	0.3	13.5			0.612
DAKS	5.6	0.30	7.71	0.800	0.017	0.5	13.5			0.612
DAKS	5.6	0.30	7.71	0.800	0.017	0.8	13.5			0.600
DAKS	5.6	0.30	7.71	0.800	0.017	1.7	13.5			0.575
DAKS	5.6	0.30	7.71	0.800	0.017	3.0	13.5			0.575
DAKS	5.6	0.30	7.71	0.800	0.017	3.4	13.5			0.570
DAKS	5.6	0.30	7.71	0.800	0.017	4.1	13.5			0.560
DAKS	5.6	0.30	7.71	0.800	0.017	0.0	12.8			0.636
DAKS	5.6	0.30	7.71	0.800	0.017	0.3	12.8			0.644
DAKS	5.6	0.30	7.71	0.800	0.017	0.5	12.8			0.636
DAKS	5.6	0.30	7.71	0.800	0.017	0.8	12.8			0.630
DAKS	5.6	0.30	7.71	0.800	0.017	1.3	12.8			0.625
DAKS	5.6	0.30	7.71	0.800	0.017	1.9	12.8			0.595
DAKS	5.6	0.30	7.71	0.800	0.017	3.0	12.8			0.595
DAKS	5.6	0.30	7.71	0.800	0.017	3.6	12.8			0.581
DAKS	5.6	0.30	7.71	0.800	0.017	4.1	12.8			0.572
BREC	4.6	0.20	2.75	0.995	0.008	2.5	15.7			0.159
BREC	4.6	0.20	2.75	0.995	0.008	4.9	15.7			0.153
BREC	4.6	0.20	2.75	0.995	0.008	8.7	15.7			0.151
BREC	4.6	0.20	2.75	0.995	0.008	11.5	15.7			0.149
BREC	4.6	0.20	2.75	0.995	0.008	14.1	15.7			0.147
BREC	4.6	0.20	2.75	0.995	0.008	18.4	15.7			0.143
BREC	4.6	0.20	2.75	0.995	0.008	2.5	14.6			0.182
BREC	4.6	0.20	2.75	0.995	0.008	4.9	14.6			0.178
BREC	4.6	0.20	2.75	0.995	0.008	8.7	14.6			0.174
BREC	4.6	0.20	2.75	0.995	0.008	11.5	14.6			0.172
BREC	4.6	0.20	2.75	0.995	0.008	14.1	14.6			0.171
BREC	4.6	0.20	2.75	0.995	0.008	18.4	14.6			0.168
BREC	4.6	0.20	2.75	0.995	0.008	26.0	14.6			0.161
BREC	4.6	0.20	2.75	0.995	0.008	2.5	13.1			0.229
BREC	4.6	0.20	2.75	0.995	0.008	4.9	13.1			0.231
BREC	4.6	0.20	2.75	0.995	0.008	8.7	13.1			0.232
BREC	4.6	0.20	2.75	0.995	0.008	11.5	13.1			0.234
BREC	4.6	0.20	2.75	0.995	0.008	14.1	13.1			0.234
BREC	4.6	0.20	2.75	0.995	0.008	18.4	13.1			0.234
BREC	4.6	0.20	2.75	0.995	0.008	26.0	13.1			0.235
BREC	4.6	0.20	2.75	0.995	0.008	32.0	13.1			0.229
BREC	4.6	0.20	2.75	0.995	0.008	37.5	13.1			0.229
BREC	4.6	0.20	2.75	0.995	0.008	43.0	13.1			0.224
BREC	4.6	0.20	2.75	0.995	0.008	2.5	11.6			0.267
BREC	4.6	0.20	2.75	0.995	0.008	4.9	11.6			0.268
BREC	4.6	0.20	2.75	0.995	0.008	8.7	11.6			0.272
BREC	4.6	0.20	2.75	0.995	0.008	11.5	11.6			0.274
BREC	4.6	0.20	2.75	0.995	0.008	14.1	11.6			0.274

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BREC	4.6	0.20	2.75	0.995	0.008	18.4	11.6			0.276
BREC	4.6	0.20	2.75	0.995	0.008	26.0	11.6			0.278
BREC	4.6	0.20	2.75	0.995	0.008	32.0	11.6			0.276
BREC	4.6	0.20	2.75	0.995	0.008	37.5	11.6			0.277
BREC	4.6	0.20	2.75	0.995	0.008	43.0	11.6			0.274
BREC	4.6	0.20	2.75	0.995	0.008	2.5	8.8			0.365
BREC	4.6	0.20	2.75	0.995	0.008	4.9	8.8			0.370
BREC	4.6	0.20	2.75	0.995	0.008	8.7	8.8			0.377
BREC	4.6	0.20	2.75	0.995	0.008	11.5	8.8			0.380
BREC	4.6	0.20	2.75	0.995	0.008	14.1	8.8			0.382
BREC	4.6	0.20	2.75	0.995	0.008	18.4	8.8			0.385
BREC	4.6	0.20	2.75	0.995	0.008	26.0	8.8			0.389
BREC	4.6	0.20	2.75	0.995	0.008	32.0	8.8			0.387
BREC	4.6	0.20	2.75	0.995	0.008	37.5	8.8			0.384
BREC	4.6	0.20	2.75	0.995	0.008	43.0	8.8			0.377
BREC	4.6	0.20	2.75	0.995	0.008	2.5	6.1			0.459
BREC	4.6	0.20	2.75	0.995	0.008	4.9	6.1			0.470
BREC	4.6	0.20	2.75	0.995	0.008	8.7	6.1			0.476
BREC	4.6	0.20	2.75	0.995	0.008	11.5	6.1			0.481
BREC	4.6	0.20	2.75	0.995	0.008	14.1	6.1			0.483
BREC	4.6	0.20	2.75	0.995	0.008	18.4	6.1			0.487
BREC	4.6	0.20	2.75	0.995	0.008	26.0	6.1			0.490
BREC	4.6	0.20	2.75	0.995	0.008	32.0	6.1			0.490
BREC	4.6	0.20	2.75	0.995	0.008	37.5	6.1			0.488
BREC	4.6	0.20	2.75	0.995	0.008	42.5	6.1			0.482
BREC	4.6	0.20	2.75	0.995	0.008	2.5	5.1			0.503
BREC	4.6	0.20	2.75	0.995	0.008	4.9	5.1			0.506
BREC	4.6	0.20	2.75	0.995	0.008	8.7	5.1			0.515
BREC	4.6	0.20	2.75	0.995	0.008	11.5	5.1			0.518
BREC	4.6	0.20	2.75	0.995	0.008	14.1	5.1			0.521
BREC	4.6	0.20	2.75	0.995	0.008	18.4	5.1			0.526
BREC	4.6	0.20	2.75	0.995	0.008	26.0	5.1			0.526
BREC	4.6	0.20	2.75	0.995	0.008	32.0	5.1			0.512
BREC	4.6	0.20	2.75	0.995	0.008	37.5	5.1			0.505
BREC	4.6	0.20	2.75	0.995	0.008	43.0	5.1			0.495
BREC	4.6	0.40	2.75	0.995	0.008	2.5	15.7			0.354
BREC	4.6	0.40	2.75	0.995	0.008	4.9	15.7			0.346
BREC	4.6	0.40	2.75	0.995	0.008	8.7	15.7			0.343
BREC	4.6	0.40	2.75	0.995	0.008	11.5	15.7			0.340
BREC	4.6	0.40	2.75	0.995	0.008	14.1	15.7			0.338
BREC	4.6	0.40	2.75	0.995	0.008	18.4	15.7			0.332
BREC	4.6	0.40	2.75	0.995	0.008	26.0	15.7			0.328
BREC	4.6	0.40	2.75	0.995	0.008	32.0	15.7			0.318
BREC	4.6	0.40	2.75	0.995	0.008	37.5	15.7			0.311
BREC	4.6	0.40	2.75	0.995	0.008	43.0	15.7			0.307
BREC	4.6	0.40	2.75	0.995	0.008	2.5	14.6			0.383
BREC	4.6	0.40	2.75	0.995	0.008	4.9	14.6			0.376
BREC	4.6	0.40	2.75	0.995	0.008	8.7	14.6			0.367
BREC	4.6	0.40	2.75	0.995	0.008	1.1	14.6			0.364
BREC	4.6	0.40	2.75	0.995	0.008	14.1	14.6			0.361

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BREC	4.6	0.40	2.75	0.995	0.008	18.4	14.6			0.355
BREC	4.6	0.40	2.75	0.995	0.008	26.0	14.6			0.346
BREC	4.6	0.40	2.75	0.995	0.008	32.0	14.6			0.338
BREC	4.6	0.40	2.75	0.995	0.008	37.5	14.6			0.330
BREC	4.6	0.40	2.75	0.995	0.008	43.0	14.6			0.321
BREC	4.6	0.40	2.75	0.995	0.008	2.5	13.1			0.409
BREC	4.6	0.40	2.75	0.995	0.008	4.9	13.1			0.403
BREC	4.6	0.40	2.75	0.995	0.008	8.7	13.1			0.397
BREC	4.6	0.40	2.75	0.995	0.008	11.5	13.1			0.394
BREC	4.6	0.40	2.75	0.995	0.008	14.1	13.1			0.389
BREC	4.6	0.40	2.75	0.995	0.008	18.4	13.1			0.384
BREC	4.6	0.40	2.75	0.995	0.008	26.0	13.1			0.373
BREC	4.6	0.40	2.75	0.995	0.008	32.0	13.1			0.366
BREC	4.6	0.40	2.75	0.995	0.008	37.5	13.1			0.361
BREC	4.6	0.40	2.75	0.995	0.008	43.0	13.1			0.355
BREC	4.6	0.40	2.75	0.995	0.008	2.5	11.6			0.439
BREC	4.6	0.40	2.75	0.995	0.008	4.9	11.6			0.432
BREC	4.6	0.40	2.75	0.995	0.008	8.7	11.6			0.427
BREC	4.6	0.40	2.75	0.995	0.008	11.5	11.6			0.423
BREC	4.6	0.40	2.75	0.995	0.008	14.1	11.6			0.418
BREC	4.6	0.40	2.75	0.995	0.008	18.4	11.6			0.414
BREC	4.6	0.40	2.75	0.995	0.008	26.0	11.6			0.405
BREC	4.6	0.40	2.75	0.995	0.008	32.0	11.6			0.400
BREC	4.6	0.40	2.75	0.995	0.008	37.5	11.6			0.394
BREC	4.6	0.40	2.75	0.995	0.008	43.0	11.6			0.387
BREC	4.6	0.40	2.75	0.995	0.008	2.5	8.8			0.518
BREC	4.6	0.40	2.75	0.995	0.008	4.9	8.8			0.511
BREC	4.6	0.40	2.75	0.995	0.008	8.7	8.8			0.503
BREC	4.6	0.40	2.75	0.995	0.008	11.5	8.8			0.499
BREC	4.6	0.40	2.75	0.995	0.008	14.1	8.8			0.496
BREC	4.6	0.40	2.75	0.995	0.008	18.4	8.8			0.490
BREC	4.6	0.40	2.75	0.995	0.008	26.0	8.8			0.484
BREC	4.6	0.40	2.75	0.995	0.008	32.0	8.8			0.480
BREC	4.6	0.40	2.75	0.995	0.008	37.5	8.8			0.476
BREC	4.6	0.40	2.75	0.995	0.008	43.0	8.8			0.470
BREC	4.6	0.40	2.75	0.995	0.008	2.5	6.1			0.612
BREC	4.6	0.40	2.75	0.995	0.008	4.9	6.1			0.609
BREC	4.6	0.40	2.75	0.995	0.008	8.7	6.1			0.590
BREC	4.6	0.40	2.75	0.995	0.008	11.5	6.1			0.586
BREC	4.6	0.40	2.75	0.995	0.008	14.1	6.1			0.584
BREC	4.6	0.40	2.75	0.995	0.008	18.4	6.1			0.583
BREC	4.6	0.40	2.75	0.995	0.008	26.0	6.1			0.579
BREC	4.6	0.40	2.75	0.995	0.008	32.0	6.1			0.572
BREC	4.6	0.40	2.75	0.995	0.008	37.5	6.1			0.568
BREC	4.6	0.40	2.75	0.995	0.008	43.0	6.1			0.565
BREC	4.6	0.60	2.45	0.995	0.008	2.5	15.7			0.349
BREC	4.6	0.60	2.45	0.995	0.008	4.9	15.7			0.339
BREC	4.6	0.60	2.45	0.995	0.008	8.7	15.7			0.337
BREC	4.6	0.60	2.45	0.995	0.008	11.5	15.7			0.332
BREC	4.6	0.60	2.45	0.995	0.008	14.1	15.7			0.328

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BREC	4.6	0.60	2.45	0.995	0.008	18.4	15.7			0.319
BREC	4.6	0.60	2.45	0.995	0.008	26.0	15.7			0.317
BREC	4.6	0.60	2.45	0.995	0.008	32.0	15.7			0.310
BREC	4.6	0.60	2.45	0.995	0.008	37.5	15.7			0.303
BREC	4.6	0.60	2.45	0.995	0.008	43.0	15.7			0.302
BREC	4.6	0.60	2.45	0.995	0.008	2.5	14.6			0.374
BREC	4.6	0.60	2.45	0.995	0.008	4.9	14.6			0.367
BREC	4.6	0.60	2.45	0.995	0.008	8.7	14.6			0.360
BREC	4.6	0.60	2.45	0.995	0.008	11.5	14.6			0.360
BREC	4.6	0.60	2.45	0.995	0.008	14.1	14.6			0.356
BREC	4.6	0.60	2.45	0.995	0.008	18.4	14.6			0.352
BREC	4.6	0.60	2.45	0.995	0.008	26.0	14.6			0.346
BREC	4.6	0.60	2.45	0.995	0.008	32.0	14.6			0.345
BREC	4.6	0.60	2.45	0.995	0.008	37.5	14.6			0.331
BREC	4.6	0.60	2.45	0.995	0.008	43.0	14.6			0.325
BREC	4.6	0.60	2.45	0.995	0.008	2.5	13.1			0.401
BREC	4.6	0.60	2.45	0.995	0.008	4.9	13.1			0.395
BREC	4.6	0.60	2.45	0.995	0.008	8.7	13.1			0.384
BREC	4.6	0.60	2.45	0.995	0.008	11.5	13.1			0.380
BREC	4.6	0.60	2.45	0.995	0.008	14.1	13.1			0.376
BREC	4.6	0.60	2.45	0.995	0.008	18.4	13.1			0.373
BREC	4.6	0.60	2.45	0.995	0.008	26.0	13.1			0.370
BREC	4.6	0.60	2.45	0.995	0.008	32.0	13.1			0.368
BREC	4.6	0.60	2.45	0.995	0.008	37.5	13.1			0.359
BREC	4.6	0.60	2.45	0.995	0.008	43.0	13.1			0.358
BREC	4.6	0.60	2.45	0.995	0.008	2.5	11.6			0.430
BREC	4.6	0.60	2.45	0.995	0.008	4.9	11.6			0.423
BREC	4.6	0.60	2.45	0.995	0.008	8.7	11.6			0.417
BREC	4.6	0.60	2.45	0.995	0.008	11.5	11.6			0.412
BREC	4.6	0.60	2.45	0.995	0.008	14.1	11.6			0.411
BREC	4.6	0.60	2.45	0.995	0.008	18.4	11.6			0.410
BREC	4.6	0.60	2.45	0.995	0.008	26.0	11.6			0.402
BREC	4.6	0.60	2.45	0.995	0.008	32.0	11.6			0.399
BREC	4.6	0.60	2.45	0.995	0.008	37.5	11.6			0.395
BREC	4.6	0.60	2.45	0.995	0.008	43.0	11.6			0.389
BREC	4.6	0.60	2.45	0.995	0.008	2.5	8.8			0.505
BREC	4.6	0.60	2.45	0.995	0.008	4.9	8.8			0.497
BREC	4.6	0.60	2.45	0.995	0.008	8.7	8.8			0.491
BREC	4.6	0.60	2.45	0.995	0.008	11.5	8.8			0.488
BREC	4.6	0.60	2.45	0.995	0.008	14.1	8.8			0.485
BREC	4.6	0.60	2.45	0.995	0.008	18.4	8.8			0.483
BREC	4.6	0.60	2.45	0.995	0.008	26.0	8.8			0.475
BREC	4.6	0.60	2.45	0.995	0.008	32.0	8.8			0.472
BREC	4.6	0.60	2.45	0.995	0.008	37.5	8.8			0.468
BREC	4.6	0.60	2.45	0.995	0.008	43.0	8.8			0.463
BREC	4.6	0.60	2.45	0.995	0.008	2.5	7.2			0.574
BREC	4.6	0.60	2.45	0.995	0.008	4.9	7.2			0.559
BREC	4.6	0.60	2.45	0.995	0.008	8.7	7.2			0.554
BREC	4.6	0.60	2.45	0.995	0.008	11.5	7.2			0.552
BREC	4.6	0.60	2.45	0.995	0.008	14.1	7.2			0.549

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BREC	4.6	0.60	2.45	0.995	0.008	18.4	7.2			0.548
BREC	4.6	0.60	2.45	0.995	0.008	26.0	7.2			0.544
BREC	4.6	0.60	2.45	0.995	0.008	32.6	7.2			0.540
BREC	4.6	0.60	2.45	0.995	0.008	37.5	7.2			0.538
BREC	4.6	0.60	2.45	0.995	0.008	43.0	7.2			0.535
BREC	4.6	0.80	2.36	0.995	0.008	2.5	15.7			0.337
BREC	4.6	0.80	2.36	0.995	0.008	4.9	15.7			0.332
BREC	4.6	0.80	2.36	0.995	0.008	8.7	15.7			0.328
BREC	4.6	0.80	2.36	0.995	0.008	11.5	15.7			0.325
BREC	4.6	0.80	2.36	0.995	0.008	14.1	15.7			0.324
BREC	4.6	0.80	2.36	0.995	0.008	18.4	15.7			0.320
BREC	4.6	0.80	2.36	0.995	0.008	26.0	15.7			0.316
BREC	4.6	0.80	2.36	0.995	0.008	32.0	15.7			0.312
BREC	4.6	0.80	2.36	0.995	0.008	37.5	15.7			0.312
BREC	4.6	0.80	2.36	0.995	0.008	43.0	15.7			0.309
BREC	4.6	0.80	2.36	0.995	0.008	2.5	14.6			0.361
BREC	4.6	0.80	2.36	0.995	0.008	4.9	14.6			0.358
BREC	4.6	0.80	2.36	0.995	0.008	8.7	14.6			0.354
BREC	4.6	0.80	2.36	0.995	0.008	11.5	14.6			0.352
BREC	4.6	0.80	2.36	0.995	0.008	14.1	14.6			0.347
BREC	4.6	0.80	2.36	0.995	0.008	18.4	14.6			0.347
BREC	4.6	0.80	2.36	0.995	0.008	26.4	14.6			0.344
BREC	4.6	0.80	2.36	0.995	0.008	32.0	14.6			0.341
BREC	4.6	0.80	2.36	0.995	0.008	37.5	14.6			0.339
BREC	4.6	0.80	2.36	0.995	0.008	43.0	14.6			0.334
BREC	4.6	0.80	2.36	0.995	0.008	2.5	13.1			0.395
BREC	4.6	0.80	2.36	0.995	0.008	4.9	13.1			0.390
BREC	4.6	0.80	2.36	0.995	0.008	8.7	13.1			0.385
BREC	4.6	0.80	2.36	0.995	0.008	11.5	13.1			0.384
BREC	4.6	0.80	2.36	0.995	0.008	14.1	13.1			0.381
BREC	4.6	0.80	2.36	0.995	0.008	18.4	13.1			0.376
BREC	4.6	0.80	2.36	0.995	0.008	26.0	13.1			0.376
BREC	4.6	0.80	2.36	0.995	0.008	32.0	13.1			0.373
BREC	4.6	0.80	2.36	0.995	0.008	37.5	13.1			0.370
BREC	4.6	0.80	2.36	0.995	0.008	43.0	13.1			0.367
BREC	4.6	0.80	2.36	0.995	0.008	2.5	11.6			0.444
BREC	4.6	0.80	2.36	0.995	0.008	4.9	11.6			0.439
BREC	4.6	0.80	2.36	0.995	0.008	8.7	11.6			0.435
BREC	4.6	0.80	2.36	0.995	0.008	11.5	11.6			0.431
BREC	4.6	0.80	2.36	0.995	0.008	14.1	11.6			0.427
BREC	4.6	0.80	2.36	0.995	0.008	18.4	11.6			0.420
BREC	4.6	0.80	2.36	0.995	0.008	26.0	11.6			0.417
BREC	4.6	0.80	2.36	0.995	0.008	32.0	11.6			0.413
BREC	4.6	0.80	2.36	0.995	0.008	37.5	11.6			0.409
BREC	4.6	0.80	2.36	0.995	0.008	43.0	11.6			0.405
BREC	4.6	0.80	2.36	0.995	0.008	2.5	9.6			0.530
BREC	4.6	0.80	2.36	0.995	0.008	4.9	9.6			0.520
BREC	4.6	0.80	2.36	0.995	0.008	8.7	9.6			0.515
BREC	4.6	0.80	2.36	0.995	0.008	11.5	9.6			0.511
BREC	4.6	0.80	2.36	0.995	0.008	14.1	9.6			0.506

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BREC	4.6	0.80	2.36	0.995	0.008	18.4	9.6			0.500
BREC	4.6	0.80	2.36	0.995	0.008	26.0	9.6			0.496
BREC	4.6	0.80	2.36	0.995	0.008	32.0	9.6			0.486
BREC	4.6	0.80	2.36	0.995	0.008	37.5	9.6			0.484
BREC	4.6	0.80	2.36	0.995	0.008	43.0	9.6			0.480
EFVA	10.0	0.10	2.46	0.995	0.010	0.8	5.2		0.019	
EFVA	10.0	0.10	2.46	0.995	0.010	1.8	5.2		0.033	
EFVA	10.0	0.10	2.46	0.995	0.010	2.6	5.2		0.044	
EFVA	10.0	0.10	2.46	0.995	0.010	2.6	5.2		0.047	
EFVA	10.0	0.10	2.46	0.995	0.010	3.6	5.2		0.053	
EFVA	10.0	0.10	2.46	0.995	0.010	3.6	5.2		0.056	
EFVA	10.0	0.10	2.46	0.995	0.010	4.2	5.2		0.058	
EFVA	10.0	0.10	2.46	0.995	0.010	4.3	5.2		0.060	
EFVA	10.0	0.10	2.46	0.995	0.010	4.2	5.2		0.064	
EFVA	10.0	0.10	2.46	0.995	0.010	5.4	5.2		0.069	
EFVA	10.0	0.10	2.46	0.995	0.010	5.4	5.2		0.072	
EFVA	10.0	0.10	2.46	0.995	0.010	6.9	5.2		0.075	
EFVA	10.0	0.10	2.46	0.995	0.010	6.9	5.2		0.078	
EFVA	10.0	0.15	2.46	0.995	0.010	0.8	5.2		0.016	
EFVA	10.0	0.15	2.46	0.995	0.010	1.3	5.2		0.023	
EFVA	10.0	0.15	2.46	0.995	0.010	1.8	5.2		0.028	
EFVA	10.0	0.15	2.46	0.995	0.010	2.6	5.2		0.037	
EFVA	10.0	0.15	2.46	0.995	0.010	2.6	5.2		0.040	
EFVA	10.0	0.15	2.46	0.995	0.010	3.6	5.2		0.048	
EFVA	10.0	0.15	2.46	0.995	0.010	4.2	5.2		0.054	
EFVA	10.0	0.15	2.46	0.995	0.010	5.4	5.2		0.058	
EFVA	10.0	0.15	2.46	0.995	0.010	5.4	5.2		0.061	
EFVA	10.0	0.15	2.46	0.995	0.010	6.9	5.2		0.066	
EFVA	10.0	0.15	2.46	0.995	0.010	6.9	5.2		0.070	
EFVA	10.0	0.21	2.46	0.995	0.010	0.8	5.2		0.013	
EFVA	10.0	0.21	2.46	0.995	0.010	1.3	5.2		0.021	
EFVA	10.0	0.21	2.46	0.995	0.010	2.6	5.2		0.034	
EFVA	10.0	0.21	2.46	0.995	0.010	3.6	5.2		0.042	
EFVA	10.0	0.21	2.46	0.995	0.010	3.6	5.2		0.044	
EFVA	10.0	0.21	2.46	0.995	0.010	4.2	5.2		0.046	
EFVA	10.0	0.21	2.46	0.995	0.010	4.3	5.2		0.049	
EFVA	10.0	0.21	2.46	0.995	0.010	5.4	5.2		0.052	
EFVA	10.0	0.21	2.46	0.995	0.010	5.4	5.2		0.055	
EFVA	10.0	0.21	2.46	0.995	0.010	6.9	5.2		0.055	
EFVA	10.0	0.21	2.46	0.995	0.010	6.9	5.2		0.059	
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	0.4			0.544
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	0.4			0.563
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	0.4			0.564
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	0.4			0.565
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	0.4			0.562
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	0.4			0.569
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	0.4			0.515
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	0.4			0.522
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	0.4			0.530
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	0.4			0.552

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	0.4			0.551
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	0.4			0.537
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	0.4			0.529
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	0.4			0.513
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	0.4			0.502
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	0.4			0.477
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	0.4			0.543
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	0.4			0.500
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	0.4			0.445
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	0.4			0.464
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	0.4			0.458
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	1.6			0.314
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	1.6			0.380
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	1.6			0.383
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	1.6			0.388
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	1.6			0.389
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	1.6			0.390
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	1.6			0.398
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	1.6			0.389
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	1.6			0.321
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	1.6			0.385
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	1.6			0.390
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	1.6			0.395
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	1.6			0.384
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	1.6			0.375
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	1.6			0.363
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	1.6			0.364
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	1.6			0.282
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	1.6			0.363
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	1.6			0.352
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	1.6			0.337
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	1.6			0.335
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	1.6			0.325
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	1.6			0.317
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	1.6			0.318
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	2.4			0.165
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	2.4			0.285
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	2.4			0.295
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	2.4			0.297
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	2.4			0.305
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	2.4			0.303
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	2.4			0.162
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	2.4			0.267
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	2.4			0.276
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	2.4			0.285
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	2.4			0.295
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	2.4			0.289
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	2.4			0.279
OSTH	10.2	0.03	2.96	0.999	0.010	0.0	2.4			0.157
OSTH	10.2	0.03	2.96	0.999	0.010	0.2	2.4			0.250

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
OSTH	10.2	0.03	2.96	0.999	0.010	0.4	2.4			0.262
OSTH	10.2	0.03	2.96	0.999	0.010	0.6	2.4			0.261
OSTH	10.2	0.03	2.96	0.999	0.010	0.8	2.4			0.259
OSTH	10.2	0.03	2.96	0.999	0.010	1.2	2.4			0.247
OSTH	10.2	0.03	2.96	0.999	0.010	1.4	2.4			0.248
OSTH	10.2	0.03	2.96	0.999	0.010	1.6	2.4			0.248
OSTH	10.2	0.06	2.94	0.999	0.010	0.0	2.4			0.316
OSTH	10.2	0.06	2.94	0.999	0.010	0.2	2.4			0.359
OSTH	10.2	0.06	2.94	0.999	0.010	0.4	2.4			0.371
OSTH	10.2	0.06	2.94	0.999	0.010	0.6	2.4			0.373
OSTH	10.2	0.06	2.94	0.999	0.010	0.8	2.4			0.373
OSTH	10.2	0.06	2.94	0.999	0.010	1.2	2.4			0.373
OSTH	10.2	0.06	2.94	0.999	0.010	1.4	2.4			0.371
OSTH	5.1	0.20	2.88	0.999	0.010	0.0	3.4			0.531
OSTH	5.1	0.20	2.88	0.999	0.010	0.1	3.4			0.537
OSTH	5.1	0.20	2.88	0.999	0.010	0.3	3.4			0.531
OSTH	5.1	0.20	2.88	0.999	0.010	0.5	3.4			0.529
OSTH	5.1	0.20	2.88	0.999	0.010	0.8	3.4			0.527
OSTH	5.1	0.20	2.88	0.999	0.010	1.2	3.4			0.526
OSTH	5.1	0.20	2.88	0.999	0.010	2.2	3.4			0.518
OSTH	5.1	0.20	2.88	0.999	0.010	3.3	3.4			0.511
OSTH	5.1	0.20	2.88	0.999	0.010	0.0	6.2			0.407
OSTH	5.1	0.20	2.88	0.999	0.010	0.1	6.2			0.414
OSTH	5.1	0.20	2.88	0.999	0.010	0.3	6.2			0.416
OSTH	5.1	0.20	2.88	0.999	0.010	0.5	6.2			0.417
OSTH	5.1	0.20	2.88	0.999	0.010	0.8	6.2			0.418
OSTH	5.1	0.20	2.88	0.999	0.010	1.2	6.2			0.418
OSTH	5.1	0.20	2.88	0.999	0.010	2.2	6.2			0.419
OSTH	5.1	0.20	2.88	0.999	0.010	3.3	6.2			0.424
OSTH	5.1	0.20	2.88	0.999	0.010	0.0	8.5			0.328
OSTH	5.1	0.20	2.88	0.999	0.010	0.1	8.5			0.333
OSTH	5.1	0.20	2.88	0.999	0.010	0.2	8.5			0.338
OSTH	5.1	0.20	2.88	0.999	0.010	0.5	8.5			0.342
OSTH	5.1	0.20	2.88	0.999	0.010	0.8	8.5			0.344
OSTH	5.1	0.20	2.88	0.999	0.010	1.2	8.5			0.344
OSTH	5.1	0.20	2.88	0.999	0.010	2.3	8.5			0.347
OSTH	5.1	0.20	2.88	0.999	0.010	3.3	8.5			0.349
OSTH	5.1	0.20	2.88	0.999	0.010	0.0	11.0			0.246
OSTH	5.1	0.20	2.88	0.999	0.010	0.2	11.0			0.249
OSTH	5.1	0.20	2.88	0.999	0.010	0.3	11.0			0.253
OSTH	5.1	0.20	2.88	0.999	0.010	0.5	11.0			0.259
OSTH	5.1	0.20	2.88	0.999	0.010	0.9	11.0			0.261
OSTH	5.1	0.20	2.88	0.999	0.010	1.2	11.0			0.262
OSTH	5.1	0.20	2.88	0.999	0.010	2.3	11.0			0.264
OSTH	5.1	0.20	2.88	0.999	0.010	3.3	11.0			0.268
OSTH	10.2	0.12	2.70	0.999	0.010	0.0	3.6			0.539
OSTH	10.2	0.12	2.70	0.999	0.010	0.2	3.6			0.550
OSTH	10.2	0.12	2.70	0.999	0.010	0.4	3.6			0.556
OSTH	10.2	0.12	2.70	0.999	0.010	0.6	3.6			0.557
OSTH	10.2	0.12	2.70	0.999	0.010	0.8	3.6			0.556

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
OSTH	10.2	0.12	2.70	0.999	0.010	1.1	3.6			0.556
OSTH	10.2	0.12	2.70	0.999	0.010	0.0	6.0			0.451
OSTH	10.2	0.12	2.70	0.999	0.010	0.2	6.0			0.421
OSTH	10.2	0.12	2.70	0.999	0.010	0.4	6.0			0.428
OSTH	10.2	0.12	2.70	0.999	0.010	0.6	6.0			0.431
OSTH	10.2	0.12	2.70	0.999	0.010	0.8	6.0			0.439
OSTH	10.2	0.12	2.70	0.999	0.010	1.2	6.0			0.442
OSTH	10.2	0.12	2.70	0.999	0.010	1.4	6.0			0.441
OSTH	10.2	0.12	2.70	0.999	0.010	0.0	8.4			0.360
OSTH	10.2	0.12	2.70	0.999	0.010	0.2	8.4			0.346
OSTH	10.2	0.12	2.70	0.999	0.010	0.4	8.4			0.349
OSTH	10.2	0.12	2.70	0.999	0.010	0.6	8.4			0.355
OSTH	10.2	0.12	2.70	0.999	0.010	0.8	8.4			0.357
OSTH	10.2	0.12	2.70	0.999	0.010	1.2	8.4			0.367
OSTH	10.2	0.12	2.70	0.999	0.010	1.4	8.4			0.365
OSTH	10.2	0.12	2.70	0.999	0.010	0.0	10.8			0.273
OSTH	10.2	0.12	2.70	0.999	0.010	0.2	10.8			0.269
OSTH	10.2	0.12	2.70	0.999	0.010	0.4	10.8			0.269
OSTH	10.2	0.12	2.70	0.999	0.010	0.6	10.8			0.270
OSTH	10.2	0.12	2.70	0.999	0.010	0.8	10.8			0.271
OSTH	10.2	0.12	2.70	0.999	0.010	1.2	10.8			0.274
OSTH	10.2	0.22	2.50	0.999	0.010	0.0	3.4			0.566
OSTH	10.2	0.22	2.50	0.999	0.010	0.1	3.4			0.566
OSTH	10.2	0.22	2.50	0.999	0.010	0.3	3.4			0.566
OSTH	10.2	0.22	2.50	0.999	0.010	0.5	3.4			0.571
OSTH	10.2	0.22	2.50	0.999	0.010	0.8	3.4			0.570
OSTH	10.2	0.22	2.50	0.999	0.010	1.3	3.4			0.568
OSTH	10.2	0.22	2.50	0.999	0.010	2.3	3.4			0.577
OSTH	10.2	0.22	2.50	0.999	0.010	3.2	3.4			0.580
KIM	4.8	0.10	2.95	1.000	0.010	10.9	5.4			0.348
KIM	4.8	0.10	2.95	1.090	0.024	16.1	5.4			0.292
KIM	4.8	0.10	2.95	1.090	0.024	10.9	5.4			0.288
KIM	4.8	0.10	2.95	1.004	0.057	2.8	5.4			0.216
KIM	4.8	0.10	2.95	1.004	0.057	1.4	5.4			0.210
KIM	4.8	0.26	2.52	1.004	0.057	0.7	5.4			0.202
KIM	4.8	0.60	2.30	1.000	0.010	1.4	5.4			0.558
KIM	4.8	0.60	2.30	1.000	0.010	5.6	5.4			0.534
KIM	4.8	0.60	2.30	1.000	0.010	10.9	5.4			0.494
KIM	4.8	0.60	2.30	1.000	0.010	16.1	5.4			0.470
KIM	4.8	0.60	2.30	1.090	0.024	1.4	5.4			0.532
KIM	4.8	0.60	2.30	1.090	0.024	5.6	5.4			0.512
KIM	4.8	0.60	2.30	1.090	0.024	10.9	5.4			0.480
KIM	4.8	0.60	2.30	1.090	0.024	16.1	5.4			0.434
KIM	4.8	0.60	2.30	1.150	0.046	1.4	5.4			0.518
KIM	4.8	0.60	2.30	1.150	0.046	5.6	5.4			0.498
KIM	4.8	0.60	2.30	1.150	0.046	10.9	5.4			0.474
KIM	4.8	0.60	2.30	1.150	0.046	16.1	5.4			0.420
KIM	4.8	0.60	2.30	1.170	0.076	1.4	5.4			0.484
KIM	4.8	0.60	2.30	1.170	0.076	5.6	5.4			0.454
KIM	4.8	0.60	2.30	1.170	0.076	10.9	5.4			0.418

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.60	2.30	1.170	0.076	16.1	5.4			0.404
KIM	4.8	0.60	2.30	1.003	0.130	1.4	5.4			0.452
KIM	4.8	0.60	2.30	1.003	0.130	5.6	5.4			0.434
KIM	4.8	0.60	2.30	1.002	0.200	1.4	5.4			0.432
KIM	4.8	0.60	2.30	1.002	0.200	5.6	5.4			0.412
KIM	4.8	0.60	2.30	1.002	0.200	10.9	5.4			0.404
KIM	4.8	0.60	2.30	1.002	0.200	16.1	5.4			0.384
KIM	4.8	0.60	2.30	1.001	0.700	1.4	5.4			0.346
KIM	4.8	0.60	2.30	1.001	0.700	5.6	5.4			0.338
KIM	4.8	0.60	2.30	1.001	0.700	10.9	5.4			0.334
KIM	4.8	0.60	2.30	1.001	0.700	16.1	5.4			0.324
KIM	4.8	0.10	2.95	0.960	0.014	0.7	7.7			0.182
KIM	4.8	0.10	2.95	0.960	0.014	5.6	7.7			0.214
KIM	4.8	0.10	2.95	0.980	0.013	0.7	7.7			0.222
KIM	4.8	0.10	2.95	0.980	0.013	5.6	7.7			0.250
KIM	4.8	0.10	2.95	0.990	0.011	0.7	7.7			0.234
KIM	4.8	0.10	2.95	0.990	0.011	5.6	7.7			0.268
KIM	4.8	0.10	2.95	1.000	0.010	0.7	7.7			0.258
KIM	4.8	0.10	2.95	1.000	0.010	5.6	7.7			0.292
KIM	4.8	0.10	2.95	0.960	0.014	0.7	5.4			0.308
KIM	4.8	0.10	2.95	0.960	0.014	5.6	5.4			0.344
KIM	4.8	0.10	2.95	0.980	0.013	0.7	5.4			0.342
KIM	4.8	0.10	2.95	0.980	0.013	5.6	5.4			0.366
KIM	4.8	0.10	2.95	0.990	0.011	0.7	5.4			0.344
KIM	4.8	0.10	2.95	0.990	0.011	5.6	5.4			0.374
KIM	4.8	0.10	2.95	1.000	0.010	0.7	5.4			0.360
KIM	4.8	0.10	2.95	1.000	0.010	5.6	5.4			0.388
KIM	4.8	0.10	2.95	1.004	0.057	5.6	5.4			0.180
KIM	4.8	0.10	2.95	1.170	0.076	1.4	5.4			0.162
KIM	4.8	0.10	2.95	1.170	0.076	0.7	5.4			0.148
KIM	4.8	0.26	2.52	0.960	0.014	5.6	5.4			0.494
KIM	4.8	0.26	2.52	0.960	0.014	1.4	5.4			0.524
KIM	4.8	0.26	2.52	0.980	0.013	5.6	5.4			0.488
KIM	4.8	0.26	2.52	0.980	0.013	1.4	5.4			0.512
KIM	4.8	0.26	2.52	0.990	0.011	5.6	5.4			0.488
KIM	4.8	0.26	2.52	0.990	0.011	1.4	5.4			0.514
KIM	4.8	0.26	2.52	1.000	0.010	5.6	5.4			0.486
KIM	4.8	0.26	2.52	1.000	0.010	1.4	5.4			0.518
KIM	4.8	0.60	2.30	0.960	0.014	5.6	7.7			0.438
KIM	4.8	0.60	2.30	0.980	0.013	5.6	7.7			0.456
KIM	4.8	0.60	2.30	0.990	0.011	5.6	7.7			0.454
KIM	4.8	0.60	2.30	1.000	0.010	5.6	7.7			0.436
KIM	4.8	0.60	2.30	0.960	0.014	5.6	5.4			0.488
KIM	4.8	0.60	2.30	0.960	0.014	1.4	5.4			0.542
KIM	4.8	0.60	2.30	0.980	0.013	5.6	5.4			0.504
KIM	4.8	0.60	2.30	0.980	0.013	1.4	5.4			0.546
KIM	4.8	0.60	2.30	0.990	0.011	5.6	5.4			0.518
KIM	4.8	0.60	2.30	0.990	0.011	1.4	5.4			0.556
KIM	4.8	0.60	2.30	1.000	0.010	5.6	5.4			0.503
KIM	4.8	0.60	2.30	1.000	0.010	1.4	5.4			0.562

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.10	2.95	1.000	0.010	0.7	5.4	0.526		
KIM	4.8	0.10	2.95	1.000	0.010	1.4	5.4	0.496	0.146	0.358
KIM	4.8	0.10	2.95	1.000	0.010	2.8	5.4	0.468		
KIM	4.8	0.10	2.95	1.000	0.010	5.6	5.4	0.440	0.226	0.334
KIM	4.8	0.10	2.95	1.090	0.024	0.7	5.4	0.662	0.078	0.260
KIM	4.8	0.10	2.95	1.090	0.024	1.4	5.4	0.600		
KIM	4.8	0.10	2.95	1.090	0.024	2.8	5.4	0.570		
KIM	4.8	0.10	2.95	1.090	0.024	5.6	5.4	0.534	0.190	0.276
KIM	4.8	0.10	2.95	1.150	0.046	0.7	5.4	0.694	0.100	0.206
KIM	4.8	0.10	2.95	1.150	0.046	1.4	5.4	0.670	0.106	0.224
KIM	4.8	0.10	2.95	1.150	0.046	2.8	5.4	0.640	0.118	0.242
KIM	4.8	0.10	2.95	1.150	0.046	5.6	5.4	0.608	0.162	0.230
KIM	4.8	0.10	2.95	1.004	0.063	0.7	5.4	0.730	0.080	0.190
KIM	4.8	0.10	2.95	1.004	0.063	1.4	5.4	0.700	0.092	0.208
KIM	4.8	0.10	2.95	1.004	0.063	2.8	5.4	0.666	0.160	0.174
KIM	4.8	0.10	2.95	1.004	0.063	5.6	5.4	0.638		
KIM	4.8	0.26	2.52	1.000	0.010	1.4	5.4	0.460	0.008	0.532
KIM	4.8	0.26	2.52	1.000	0.010	2.8	5.4	0.440	0.038	0.522
KIM	4.8	0.26	2.52	1.000	0.010	5.6	5.4	0.420	0.086	0.494
KIM	4.8	0.26	2.52	1.090	0.024	1.4	5.4	0.504	0.024	0.472
KIM	4.8	0.26	2.52	1.090	0.024	2.8	5.4	0.484	0.060	0.456
KIM	4.8	0.26	2.52	1.090	0.024	5.6	5.4	0.456	0.114	0.430
KIM	4.8	0.26	2.52	1.150	0.046	1.4	5.4	0.596		0.404
KIM	4.8	0.26	2.52	1.150	0.046	2.8	5.4	0.576	0.034	0.390
KIM	4.8	0.26	2.52	1.150	0.046	5.6	5.4	0.548	0.080	0.372
KIM	4.8	0.26	2.52	1.170	0.076	1.4	5.4	0.632	0.010	0.358
KIM	4.8	0.26	2.52	1.170	0.076	2.8	5.4	0.612	0.044	0.344
KIM	4.8	0.26	2.52	1.170	0.076	5.6	5.4	0.588	0.090	0.322
KIM	4.8	0.26	2.52	1.003	0.130	1.4	5.4	0.660		
KIM	4.8	0.26	2.52	1.003	0.130	2.8	5.4	0.632		
KIM	4.8	0.26	2.52	1.003	0.130	5.6	5.4	0.608		
KTM	4.8	0.26	2.52	1.002	0.200	1.4	5.4	0.668	0.014	0.318
KIM	4.8	0.26	2.52	1.002	0.200	2.8	5.4	0.644	0.050	0.306
KIM	4.8	0.26	2.52	1.002	0.200	5.6	5.4	0.616	0.086	0.298
KIM	4.8	0.60	2.30	1.000	0.010	1.4	7.7	0.478		
KIM	4.8	0.60	2.30	1.000	0.010	2.8	7.7	0.450		
KIM	4.8	0.60	2.30	1.000	0.010	11.0	7.7	0.432		
KIM	4.8	0.60	2.30	1.000	0.010	16.1	7.7	0.406		
KIM	4.8	0.60	2.30	1.090	0.024	1.4	7.7	0.488		
KIM	4.8	0.60	2.30	1.090	0.024	2.8	7.7	0.466		
KIM	4.8	0.60	2.30	1.090	0.024	11.0	7.7	0.440		
KIM	4.8	0.60	2.30	1.090	0.024	16.1	7.7	0.422		
KIM	4.8	0.60	2.30	1.150	0.046	1.4	7.7	0.510		
KIM	4.8	0.60	2.30	1.150	0.046	2.8	7.7	0.486		
KIM	4.8	0.60	2.30	1.150	0.046	11.0	7.7	0.464		
KIM	4.8	0.60	2.30	1.150	0.046	16.1	7.7	0.452		
KIM	4.8	0.60	2.30	1.170	0.076	1.4	7.7	0.536		
KIM	4.8	0.60	2.30	1.170	0.076	2.8	7.7	0.506		
KIM	4.8	0.60	2.30	1.170	0.076	11.0	7.7	0.490		
KIM	4.8	0.60	2.30	1.170	0.076	16.1	7.7	0.476		

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.60	2.30	1.003	0.130	1.4	7.7	0.578		
KIM	4.8	0.60	2.30	1.003	0.130	2.8	7.7	0.560		
KIM	4.8	0.60	2.30	1.002	0.200	1.4	7.7	0.656		
KIM	4.8	0.60	2.30	1.002	0.200	2.8	7.7	0.618		
KIM	4.8	0.60	2.30	1.002	0.200	11.0	7.7	0.566		
KIM	4.8	0.60	2.30	1.001	0.700	1.4	7.7	0.780		
KIM	4.8	0.60	2.30	1.001	0.700	2.8	7.7	0.726		
KIM	4.8	0.10	2.95	0.960	0.014	1.4	3.8	0.532		
KIM	4.8	0.10	2.95	0.960	0.014	16.1	3.8	0.440		
KIM	4.8	0.10	2.95	0.980	0.013	1.4	3.8	0.512		
KIM	4.8	0.10	2.95	0.980	0.013	16.1	3.8	0.420		
KIM	4.8	0.10	2.95	0.990	0.011	1.4	3.8	0.496		
KIM	4.8	0.10	2.95	0.990	0.011	16.1	3.8	0.400		
KIM	4.8	0.10	2.95	1.000	0.010	1.4	3.8	0.480		
KIM	4.8	0.10	2.95	1.000	0.010	16.1	3.8	0.380		
KIM	4.8	0.10	2.95	0.960	0.014	1.4	5.4	0.600		
KIM	4.8	0.10	2.95	0.960	0.014	16.1	5.4	0.480		
KIM	4.8	0.10	2.95	0.980	0.013	1.4	5.4	0.584		
KIM	4.8	0.10	2.95	0.980	0.013	16.1	5.4	0.480		
KIM	4.8	0.10	2.95	0.990	0.011	1.4	5.4	0.576		
KIM	4.8	0.10	2.95	0.990	0.011	16.1	5.4	0.480		
KIM	4.8	0.10	2.95	1.000	0.010	1.4	5.4	0.564		
KIM	4.8	0.10	2.95	1.000	0.010	16.1	5.4	0.464		
KIM	4.8	0.26	2.52	0.960	0.014	1.4	3.8	0.300		
KIM	4.8	0.26	2.52	0.960	0.014	5.6	3.8	0.248		
KIM	4.8	0.26	2.52	0.980	0.013	1.4	3.8	0.356		
KIM	4.8	0.26	2.52	0.980	0.013	5.6	3.8	0.312		
KIM	4.8	0.26	2.52	0.990	0.011	1.4	3.8	0.400		
KIM	4.8	0.26	2.52	0.990	0.011	5.6	3.8	0.360		
KIM	4.8	0.26	2.52	1.000	0.010	1.4	3.8	0.428		
KIM	4.8	0.26	2.52	1.000	0.010	5.6	3.8	0.364		
KIM	4.8	0.26	2.52	0.960	0.014	1.4	7.7	0.408	0.168	0.424
KIM	4.8	0.26	2.52	0.960	0.014	5.6	7.7	0.340	0.264	0.396
KIM	4.8	0.26	2.52	0.980	0.013	1.4	7.7	0.436	0.138	0.426
KIM	4.8	0.26	2.52	0.980	0.013	5.6	7.7	0.396	0.210	0.394
KIM	4.8	0.26	2.52	0.990	0.011	1.4	7.7	0.496	0.082	0.422
KIM	4.8	0.26	2.52	0.990	0.011	5.6	7.7	0.432	0.176	0.392
KIM	4.8	0.26	2.52	1.000	0.010	1.4	7.7	0.496	0.086	0.418
KIM	4.8	0.26	2.52	1.000	0.010	5.6	7.7	0.440	0.172	0.388
KIM	4.8	0.60	2.30	0.960	0.014	1.4	3.8	0.320		
KIM	4.8	0.60	2.30	0.960	0.014	16.1	3.8	0.212		
KIM	4.8	0.60	2.30	0.980	0.013	1.4	3.8	0.312		
KIM	4.8	0.60	2.30	0.980	0.013	16.1	3.8	0.212		
KIM	4.8	0.60	2.30	0.990	0.011	1.4	3.8	0.208		
KIM	4.8	0.60	2.30	0.990	0.011	16.1	3.8	0.212		
KIM	4.8	0.60	2.30	1.000	0.010	1.4	3.8	0.208		
KIM	4.8	0.60	2.30	1.000	0.010	16.1	3.8	0.228		
KIM	4.8	0.60	2.30	0.960	0.014	1.4	7.7	0.400	0.108	0.492
KIM	4.8	0.60	2.30	0.960	0.014	16.1	7.7	0.288		
KIM	4.8	0.60	2.30	0.980	0.013	1.4	7.7	0.368	0.120	0.512

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KIM	4.8	0.60	2.30	0.980	0.013	16.1	7.7	0.276		
KIM	4.8	0.60	2.30	0.990	0.011	1.4	7.7	0.388	0.102	0.510
KIM	4.8	0.60	2.30	0.990	0.011	16.1	7.7	0.304		
KIM	4.8	0.60	2.30	1.000	0.010	1.4	7.7	0.472	0.028	0.500
KIM	4.8	0.60	2.30	1.000	0.010	16.1	7.7	0.400		
MIOS	15.2	0.59	2.63	1.000	0.010	0.4	10.0			0.417
MIOS	15.2	0.59	2.63	1.000	0.010	1.7	10.0			0.405
MIOS	15.2	0.59	2.63	1.000	0.010	3.1	10.0			0.389
MIOS	15.2	0.59	2.63	1.000	0.010	6.1	10.0			0.357
MIOS	15.2	0.59	2.63	1.000	0.010	10.6	10.0			0.328
MIOS	15.2	0.59	2.63	1.000	0.010	18.1	10.0			0.362
MIOS	15.2	0.59	2.63	1.000	0.010	28.0	10.0			0.362
MIOS	15.2	0.59	2.63	1.000	0.010	0.1	14.0			0.352
MIOS	15.2	0.59	2.63	1.000	0.010	1.5	14.0			0.334
MIOS	15.2	0.59	2.63	1.000	0.010	3.1	14.0			0.325
MIOS	15.2	0.59	2.63	1.000	0.010	6.1	14.0			0.299
MIOS	15.2	0.59	2.63	1.000	0.010	18.1	14.0			0.240
MIOS	15.2	0.59	2.63	1.000	0.010	0.1	20.0			0.221
MIOS	15.2	0.59	2.63	1.000	0.010	1.6	20.0			0.210
MIOS	15.2	0.59	2.63	1.000	0.010	2.9	20.0			0.209
MIOS	15.2	0.59	2.63	1.000	0.010	6.1	20.0			0.188
MIOS	15.2	0.59	2.63	1.000	0.010	13.1	20.0			0.157
MIOS	15.2	0.59	2.63	1.000	0.010	0.2	26.0			0.166
MIOS	15.2	0.59	2.63	1.000	0.010	1.5	26.0			0.154
MIOS	15.2	0.59	2.63	1.000	0.010	2.7	26.0			0.145
MIOS	15.2	0.59	2.63	1.000	0.010	4.7	26.0			0.127
MIOS	15.2	0.59	2.63	1.000	0.010	1.4	10.0		0.025	
MIOS	15.2	0.59	2.63	1.000	0.010	2.8	10.0		0.075	
MIOS	15.2	0.59	2.63	1.000	0.010	5.9	10.0		0.148	
MIOS	15.2	0.59	2.63	1.000	0.010	10.4	10.0		0.214	
MIOS	15.2	0.59	2.63	1.000	0.010	19.7	10.0		0.188	
MIOS	15.2	0.59	2.63	1.000	0.010	1.4	14.0		0.034	
MIOS	15.2	0.59	2.63	1.000	0.010	2.9	14.0		0.068	
MIOS	15.2	0.59	2.63	1.000	0.010	6.1	14.0		0.135	
MIOS	15.2	0.59	2.63	1.000	0.010	17.4	14.0		0.289	
MIOS	15.2	0.59	2.63	1.000	0.010	1.4	20.0		0.030	
MIOS	15.2	0.59	2.63	1.000	0.010	3.0	20.0		0.060	
MIOS	15.2	0.59	2.63	1.000	0.010	6.0	20.0		0.114	
MIOS	15.2	0.59	2.63	1.000	0.010	11.2	20.0		0.200	
MIOS	15.2	0.59	2.63	1.000	0.010	1.6	10.0	0.512		
MIOS	15.2	0.59	2.63	1.000	0.010	3.1	10.0	0.496		
MIOS	15.2	0.59	2.63	1.000	0.010	6.2	10.0	0.477		
MIOS	15.2	0.59	2.63	1.000	0.010	9.3	10.0	0.440		
MIOS	15.2	0.59	2.63	1.000	0.010	15.5	10.0	0.442		
MIOS	15.2	0.59	2.63	1.000	0.010	0.2	14.0	0.632		
MIOS	15.2	0.59	2.63	1.000	0.010	1.7	14.0	0.633		
MIOS	15.2	0.59	2.63	1.000	0.010	3.1	14.0	0.607		
MIOS	15.2	0.59	2.63	1.000	0.010	6.1	14.0	0.574		
MIOS	15.2	0.59	2.63	1.000	0.010	15.0	14.0	0.504		
MIOS	15.2	0.59	2.63	1.000	0.010	0.1	20.0	0.730		

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
MIOS	15.2	0.59	2.63	1.000	0.010	1.6	20.0	0.725		
MIOS	15.2	0.59	2.63	1.000	0.010	3.1	20.0	0.690		
MIOS	15.2	0.59	2.63	1.000	0.010	6.1	20.0	0.671		
MIOS	15.2	0.59	2.63	1.000	0.010	10.9	20.0	0.604		
MIOS	15.2	0.59	2.63	1.000	0.010	0.0	26.0	0.850		
MIOS	15.2	0.59	2.63	1.000	0.010	1.7	26.0	0.799		
MIOS	15.2	0.59	2.63	1.000	0.010	3.0	26.0	0.809		
MIOS	15.2	0.59	2.63	1.000	0.010	4.6	26.0	0.770		
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	16.0			0.196
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	16.0			0.170
MIOS	15.2	0.30	2.45	1.000	0.010	3.1	16.0			0.134
MIOS	15.2	0.30	2.45	1.000	0.010	4.7	16.0			0.112
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	14.0			0.230
MIOS	15.2	0.30	2.45	1.000	0.010	1.5	14.0			0.206
MIOS	15.2	0.30	2.45	1.000	0.010	3.1	14.0			0.181
MIOS	15.2	0.30	2.45	1.000	0.010	4.5	14.0			0.157
MIOS	15.2	0.30	2.45	1.000	0.010	6.5	14.0			0.196
MIOS	15.2	0.30	2.45	1.000	0.010	14.9	14.0			0.246
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	11.0			0.299
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	11.0			0.282
MIOS	15.2	0.30	2.45	1.000	0.010	3.0	11.0			0.257
MIOS	15.2	0.30	2.45	1.000	0.010	4.6	11.0			0.275
MIOS	15.2	0.30	2.45	1.000	0.010	5.6	11.0			0.317
MIOS	15.2	0.30	2.45	1.000	0.010	11.4	11.0			0.340
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	8.4			0.368
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	8.4			0.357
MIOS	15.2	0.30	2.45	1.000	0.010	3.2	8.4			0.376
MIOS	15.2	0.30	2.45	1.000	0.010	4.6	8.4			0.398
MIOS	15.2	0.30	2.45	1.000	0.010	6.1	8.4			0.405
MIOS	15.2	0.30	2.45	1.000	0.010	11.9	8.4			0.406
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	6.6			0.429
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	6.6			0.440
MIOS	15.2	0.30	2.45	1.000	0.010	3.1	6.6			0.448
MIOS	15.2	0.30	2.45	1.000	0.010	4.6	6.6			0.452
MIOS	15.2	0.30	2.45	1.000	0.010	6.2	6.6			0.453
MIOS	15.2	0.30	2.45	1.000	0.010	11.7	6.6			0.454
MIOS	15.2	0.30	2.45	1.000	0.010	1.5	16.0		0.030	
MIOS	15.2	0.30	2.45	1.000	0.010	3.0	16.0		0.068	
MIOS	15.2	0.30	2.45	1.000	0.010	4.5	16.0		0.100	
MIOS	15.2	0.30	2.45	1.000	0.010	1.5	11.0		0.040	
MIOS	15.2	0.30	2.45	1.000	0.010	3.0	11.0		0.081	
MIOS	15.2	0.30	2.45	1.000	0.010	4.1	11.0		0.086	
MIOS	15.2	0.30	2.45	1.000	0.010	5.4	11.0		0.071	
MIOS	15.2	0.30	2.45	1.000	0.010	9.9	11.0		0.097	
MIOS	15.2	0.30	2.45	1.000	0.010	1.5	6.6		0.033	
MIOS	15.2	0.30	2.45	1.000	0.010	2.9	6.6		0.048	
MIOS	15.2	0.30	2.45	1.000	0.010	4.4	6.6		0.063	
MIOS	15.2	0.30	2.45	1.000	0.010	6.0	6.6		0.074	
MIOS	15.2	0.30	2.45	1.000	0.010	12.9	6.6		0.099	
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	16.0	0.798		

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	16.0	0.791		
MIOS	15.2	0.30	2.45	1.000	0.010	3.2	16.0	0.780		
MIOS	15.2	0.30	2.45	1.000	0.010	4.6	16.0	0.769		
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	14.0	0.778		
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	14.0	0.732		
MIOS	15.2	0.30	2.45	1.000	0.010	3.2	14.0	0.744		
MIOS	15.2	0.30	2.45	1.000	0.010	4.5	14.0	0.721		
MIOS	15.2	0.30	2.45	1.000	0.010	6.2	14.0	0.703		
MIOS	15.2	0.30	2.45	1.000	0.010	14.0	14.0	0.641		
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	11.0	0.695		
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	11.0	0.665		
MIOS	15.2	0.30	2.45	1.000	0.010	3.1	11.0	0.662		
MIOS	15.2	0.30	2.45	1.000	0.010	4.6	11.0	0.638		
MIOS	15.2	0.30	2.45	1.000	0.010	6.2	11.0	0.611		
MIOS	15.2	0.30	2.45	1.000	0.010	11.1	11.0	0.570		
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	8.4	0.630		
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	8.4	0.608		
MIOS	15.2	0.30	2.45	1.000	0.010	3.1	8.4	0.580		
MIOS	15.2	0.30	2.45	1.000	0.010	4.6	8.4	0.550		
MIOS	15.2	0.30	2.45	1.000	0.010	6.1	8.4	0.541		
MIOS	15.2	0.30	2.45	1.000	0.010	12.9	8.4	0.511		
MIOS	15.2	0.30	2.45	1.000	0.010	0.0	6.6	0.576		
MIOS	15.2	0.30	2.45	1.000	0.010	1.6	6.6	0.541		
MIOS	15.2	0.30	2.45	1.000	0.010	3.1	6.6	0.521		
MIOS	15.2	0.30	2.45	1.000	0.010	4.5	6.6	0.500		
MIOS	15.2	0.30	2.45	1.000	0.010	6.1	6.6	0.491		
MIOS	15.2	0.30	2.45	1.000	0.010	12.8	6.6	0.464		
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	3.0			0.422
MIOS	15.2	0.13	2.67	1.000	0.010	0.7	3.0			0.462
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	3.0			0.484
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	3.0			0.492
MIOS	15.2	0.13	2.67	1.000	0.010	4.6	3.0			0.492
MIOS	15.2	0.13	2.67	1.000	0.010	6.5	3.0			0.487
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	3.0			0.458
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	4.2			0.354
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	4.2			0.411
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	4.2			0.424
MIOS	15.2	0.13	2.67	1.000	0.010	4.6	4.2			0.424
MIOS	15.2	0.13	2.67	1.000	0.010	6.4	4.2			0.426
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	5.4			0.295
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	5.4			0.361
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	5.4			0.372
MIOS	15.2	0.13	2.67	1.000	0.010	4.6	5.4			0.381
MIOS	15.2	0.13	2.67	1.000	0.010	6.2	5.4			0.384
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	5.4			0.391
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	6.6			0.253
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	6.6			0.302
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	6.6			0.319
MIOS	15.2	0.13	2.67	1.000	0.010	4.5	6.6			0.331
MIOS	15.2	0.13	2.67	1.000	0.010	6.2	6.6			0.331

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	6.6			0.331
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	7.8			0.193
MIOS	15.2	0.13	2.67	1.000	0.010	1.5	7.8			0.259
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	7.8			0.272
MIOS	15.2	0.13	2.67	1.000	0.010	4.5	7.8			0.291
MIOS	15.2	0.13	2.67	1.000	0.010	6.1	7.8			0.293
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	7.8			0.304
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	9.0			0.153
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	9.0			0.203
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	7.8		0.037	
MIOS	15.2	0.13	2.67	1.000	0.010	3.2	7.8		0.061	
MIOS	15.2	0.13	2.67	1.000	0.010	4.6	7.8		0.072	
MIOS	15.2	0.13	2.67	1.000	0.010	6.0	7.8		0.088	
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	7.8		0.128	
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	4.2		0.027	
MIOS	15.2	0.13	2.67	1.000	0.010	3.2	4.2		0.049	
MIOS	15.2	0.13	2.67	1.000	0.010	4.6	4.2		0.070	
MIOS	15.2	0.13	2.67	1.000	0.010	6.0	4.2		0.076	
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	4.2		0.121	
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	3.0		0.024	
MIOS	15.2	0.13	2.67	1.000	0.010	3.3	3.0		0.053	
MIOS	15.2	0.13	2.67	1.000	0.010	4.7	3.0		0.066	
MIOS	15.2	0.13	2.67	1.000	0.010	6.1	3.0		0.080	
MIOS	15.2	0.13	2.67	1.000	0.010	13.0	3.0		0.116	
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	9.0	0.831		
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	9.0	0.760		
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	7.8	0.778		
MIOS	15.2	0.13	2.67	1.000	0.010	1.7	7.8	0.682		
MIOS	15.2	0.13	2.67	1.000	0.010	3.2	7.8	0.663		
MIOS	15.2	0.13	2.67	1.000	0.010	4.7	7.8	0.649		
MIOS	15.2	0.13	2.67	1.000	0.010	6.3	7.8	0.627		
MIOS	15.2	0.13	2.67	1.000	0.010	13.4	7.8	0.605		
MIOS	15.2	0.13	2.67	1.000	0.010	0.3	6.6	0.741		
MIOS	15.2	0.13	2.67	1.000	0.010	1.7	6.6	0.660		
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	6.6	0.625		
MIOS	15.2	0.13	2.67	1.000	0.010	4.7	6.6	0.609		
MIOS	15.2	0.13	2.67	1.000	0.010	6.4	6.6	0.583		
MIOS	15.2	0.13	2.67	1.000	0.010	13.5	6.6	0.569		
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	5.4	0.720		
MIOS	15.2	0.13	2.67	1.000	0.010	1.7	5.4	0.611		
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	5.4	0.580		
MIOS	15.2	0.13	2.67	1.000	0.010	4.7	5.4	0.558		
MIOS	15.2	0.13	2.67	1.000	0.010	6.3	5.4	0.543		
MIOS	15.2	0.13	2.67	1.000	0.010	13.3	5.4	0.520		
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	4.2	0.670		
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	4.2	0.556		
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	4.2	0.535		
MIOS	15.2	0.13	2.67	1.000	0.010	4.6	4.2	0.511		
MIOS	15.2	0.13	2.67	1.000	0.010	6.4	4.2	0.507		
MIOS	15.2	0.13	2.67	1.000	0.010	0.0	3.0	0.574		

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
MIOS	15.2	0.13	2.67	1.000	0.010	0.8	3.0	0.523		
MIOS	15.2	0.13	2.67	1.000	0.010	1.6	3.0	0.490		
MIOS	15.2	0.13	2.67	1.000	0.010	3.1	3.0	0.466		
MIOS	15.2	0.13	2.67	1.000	0.010	4.7	3.0	0.454		
MIOS	15.2	0.13	2.67	1.000	0.010	6.3	3.0	0.454		
MIOS	15.2	0.13	2.67	1.000	0.010	13.4	3.0	0.431		
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	4.0			0.353
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	4.0			0.361
BHEP	2.0	0.10	2.90	0.996	0.010	0.2	4.0			0.357
BHEP	2.0	0.10	2.90	0.996	0.010	0.6	4.0			0.356
BHEP	2.0	0.10	2.90	0.996	0.010	1.0	4.0			0.351
BHEP	2.0	0.10	2.90	0.996	0.010	1.4	4.0			0.344
BHEP	2.0	0.10	2.90	0.996	0.010	1.9	4.0			0.339
BHEP	2.0	0.10	2.90	0.996	0.010	2.6	4.0			0.329
BHEP	2.0	0.10	2.90	0.996	0.010	2.5	4.0			0.318
BHEP	2.0	0.10	2.90	0.996	0.010	2.9	4.0			0.317
BHEP	2.0	0.10	2.90	0.996	0.010	3.5	4.0			0.300
BHEP	2.0	0.10	2.90	0.996	0.010	4.0	4.0			0.300
BHEP	2.0	0.10	2.90	0.996	0.010	4.2	4.0			0.292
BHEP	2.0	0.10	2.90	0.996	0.010	4.8	4.0			0.284
BHEP	2.0	0.10	2.90	0.996	0.010	5.1	4.0			0.291
BHEP	2.0	0.10	2.90	0.996	0.010	5.3	4.0			0.284
BHEP	2.0	0.10	2.90	0.996	0.010	5.4	4.0			0.271
BHEP	2.0	0.10	2.90	0.996	0.010	5.8	4.0			0.266
BHEP	2.0	0.10	2.90	0.996	0.010	5.9	4.0			0.274
BHEP	2.0	0.10	2.90	0.996	0.010	6.4	4.0			0.256
BHEP	2.0	0.10	2.90	0.996	0.010	6.9	4.0			0.260
BHEP	2.0	0.10	2.90	0.996	0.010	7.1	4.0			0.239
BHEP	2.0	0.10	2.90	0.996	0.010	8.1	4.0			0.250
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	5.2			0.292
BHEP	2.0	0.10	2.90	0.996	0.010	2.1	5.2			0.292
BHEP	2.0	0.10	2.90	0.996	0.010	3.8	5.2			0.261
BHEP	2.0	0.10	2.90	0.996	0.010	4.5	5.2			0.249
BHEP	2.0	0.10	2.90	0.996	0.010	5.4	5.2			0.235
BHEP	2.0	0.10	2.90	0.996	0.010	6.2	5.2			0.223
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	6.4			0.230
BHEP	2.0	0.10	2.90	0.996	0.010	0.7	6.4			0.248
BHEP	2.0	0.10	2.90	0.996	0.010	1.8	6.4			0.238
BHEP	2.0	0.10	2.90	0.996	0.010	2.0	6.4			0.227
BHEP	2.0	0.10	2.90	0.996	0.010	2.5	6.4			0.224
BHEP	2.0	0.10	2.90	0.996	0.010	2.9	6.4			0.216
BHEP	2.0	0.10	2.90	0.996	0.010	3.4	6.4			0.210
BHEP	2.0	0.10	2.90	0.996	0.010	3.6	6.4			0.202
BHEP	2.0	0.10	2.90	0.996	0.010	4.0	6.4			0.203
BHEP	2.0	0.10	2.90	0.996	0.010	4.2	6.4			0.193
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	8.0			0.166
BHEP	2.0	0.10	2.90	0.996	0.010	0.3	8.0			0.188
BHEP	2.0	0.10	2.90	0.996	0.010	0.4	8.0			0.182
BHEP	2.0	0.10	2.90	0.996	0.010	0.6	8.0			0.187
BHEP	2.0	0.10	2.90	0.996	0.010	1.0	8.0			0.196

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BHEP	2.0	0.10	2.90	0.996	0.010	1.2	8.0			0.188
BHEP	2.0	0.10	2.90	0.996	0.010	1.3	8.0			0.193
BHEP	2.0	0.10	2.90	0.996	0.010	1.6	8.0			0.194
BHEP	2.0	0.10	2.90	0.996	0.010	2.0	8.0			0.181
BHEP	2.0	0.10	2.90	0.996	0.010	2.1	8.0			0.174
BHEP	2.0	0.10	2.90	0.996	0.010	2.3	8.0			0.183
BHEP	2.0	0.10	2.90	0.996	0.010	2.5	8.0			0.179
BHEP	2.0	0.10	2.90	0.996	0.010	2.5	8.0			0.170
BHEP	2.0	0.10	2.90	0.996	0.010	2.7	8.0			0.167
BHEP	2.0	0.10	2.90	0.996	0.010	3.0	8.0			0.170
BHEP	2.0	0.10	2.90	0.996	0.010	0.4	4.8			0.318
BHEP	2.0	0.10	2.90	0.996	0.010	0.5	4.8			0.316
BHEP	2.0	0.10	2.90	0.996	0.010	0.8	4.8			0.311
BHEP	2.0	0.10	2.90	0.996	0.010	0.9	4.8			0.313
BHEP	2.0	0.10	2.90	0.996	0.010	1.0	4.8			0.309
BHEP	2.0	0.10	2.90	0.996	0.010	1.3	4.8			0.307
BHEP	2.0	0.10	2.90	0.996	0.010	1.7	4.8			0.300
BHEP	2.0	0.10	2.90	0.996	0.010	2.1	4.8			0.296
BHEP	2.0	0.10	2.90	0.996	0.010	2.3	4.8			0.282
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	6.0			0.243
BHEP	2.0	0.10	2.90	0.996	0.010	0.2	6.0			0.266
BHEP	2.0	0.10	2.90	0.996	0.010	0.4	6.0			0.269
BHEP	2.0	0.10	2.90	0.996	0.010	0.5	6.0			0.261
BHEP	2.0	0.10	2.90	0.996	0.010	0.6	6.0			0.266
BHEP	2.0	0.10	2.90	0.996	0.010	0.8	6.0			0.261
BHEP	2.0	0.10	2.90	0.996	0.010	1.0	6.0			0.263
BHEP	2.0	0.10	2.90	0.996	0.010	1.3	6.0			0.258
BHEP	2.0	0.10	2.90	0.996	0.010	1.6	6.0			0.248
BHEP	2.0	0.10	2.90	0.996	0.010	1.8	6.0			0.243
BHEP	2.0	0.10	2.90	0.996	0.010	2.2	6.0			0.234
BHEP	2.0	0.10	2.90	0.996	0.010	2.6	6.0			0.229
BHEP	2.0	0.10	2.90	0.996	0.010	2.8	6.0			0.225
BHEP	2.0	0.10	2.90	0.996	0.010	3.4	6.0			0.215
BHEP	2.0	0.10	2.90	0.996	0.010	3.8	6.0			0.217
BHEP	2.0	0.10	2.90	0.996	0.010	3.8	6.0			0.210
BHEP	2.0	0.10	2.90	0.996	0.010	5.0	6.0			0.200
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	6.8			0.212
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	6.8			0.221
BHEP	2.0	0.10	2.90	0.996	0.010	0.3	6.8			0.227
BHEP	2.0	0.10	2.90	0.996	0.010	0.4	6.8			0.237
BHEP	2.0	0.10	2.90	0.996	0.010	0.5	6.8			0.228
BHEP	2.0	0.10	2.90	0.996	0.010	0.7	6.8			0.235
BHEP	2.0	0.10	2.90	0.996	0.010	0.9	6.8			0.235
BHEP	2.0	0.10	2.90	0.996	0.010	1.1	6.8			0.230
BHEP	2.0	0.10	2.90	0.996	0.010	1.3	6.8			0.234
BHEP	2.0	0.10	2.90	0.996	0.010	1.6	6.8			0.228
BHEP	2.0	0.10	2.90	0.996	0.010	2.1	6.8			0.219
BHEP	2.0	0.10	2.90	0.996	0.010	2.1	6.8			0.226
BHEP	2.0	0.10	2.90	0.996	0.010	2.4	6.8			0.220
BHEP	2.0	0.10	2.90	0.996	0.010	2.8	6.8			0.208

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BHEP	5.1	0.10	2.90	0.996	0.010	3.4	7.6	0.649	0.069	0.282
BHEP	5.1	0.10	2.90	0.996	0.010	3.9	7.6	0.641	0.085	0.274
BHEP	5.1	0.10	2.90	0.996	0.010	4.0	7.6		0.093	
BHEP	5.1	0.10	2.90	0.996	0.010	4.6	7.6	0.637	0.092	0.271
BHEP	5.1	0.10	2.90	0.996	0.010	5.3	7.6		0.122	
BHEP	5.1	0.10	2.90	0.996	0.010	5.6	7.6	0.635	0.113	0.252
BHEP	5.1	0.10	2.90	0.996	0.010	5.7	7.6		0.101	
BHEP	5.1	0.10	2.90	0.996	0.010	6.2	7.6	0.643	0.106	0.251
BHEP	5.1	0.10	2.90	0.996	0.010	6.8	7.6		0.113	
BHEP	5.1	0.10	2.90	0.996	0.010	2.3	12.8	0.808	0.058	0.134
BHEP	5.1	0.10	2.90	0.996	0.010	3.2	12.8	0.794	0.068	0.138
BHEP	5.1	0.10	2.90	0.996	0.010	3.9	12.8	0.765	0.088	0.147
BHEP	5.1	0.10	2.90	0.996	0.010	4.7	12.8	0.773	0.081	0.146
BHEP	5.1	0.10	2.90	0.996	0.010	5.2	12.8	0.762	0.098	0.140
BHEP	5.1	0.10	2.90	0.996	0.010	5.8	12.8	0.738	0.111	0.151
BHEP	5.1	0.10	2.90	0.996	0.010	6.2	12.8	0.757	0.103	0.140
BHEP	5.1	0.10	2.90	0.996	0.010	6.7	12.8	0.726	0.122	0.152
BHEP	5.1	0.10	2.90	0.996	0.010	7.1	12.8	0.735	0.123	0.142
BHEP	5.1	0.10	2.90	0.996	0.010	7.1	12.8	0.717	0.141	0.142
BHEP	5.1	0.10	2.90	0.996	0.010	7.6	12.8	0.724	0.127	0.149
BHEP	5.1	0.10	2.90	0.996	0.010	8.4	12.8	0.726	0.128	0.146
BHEP	5.1	0.10	2.90	0.996	0.010	8.8	12.8	0.719	0.141	0.140
BHEP	5.1	0.10	2.90	0.996	0.010	9.2	12.8	0.707	0.151	0.142
BHEP	5.1	0.10	2.90	0.996	0.010	5.4	7.6			0.262
BHEP	5.1	0.10	2.90	0.996	0.010	5.5	7.6			0.252
BHEP	5.1	0.10	2.90	0.996	0.010	6.1	7.6			0.251
BHEP	5.1	0.10	2.90	0.996	0.010	6.6	7.6			0.247
BHEP	5.1	0.10	2.90	0.996	0.010	0.0	7.0			0.261
BHEP	5.1	0.10	2.90	0.996	0.010	1.9	7.0			0.278
BHEP	5.1	0.10	2.90	0.996	0.010	2.1	7.0			0.280
BHEP	5.1	0.10	2.90	0.996	0.010	2.6	7.0			0.276
BHEP	5.1	0.10	2.90	0.996	0.010	3.3	7.0			0.273
BHEP	5.1	0.10	2.90	0.996	0.010	4.0	7.0			0.270
BHEP	5.1	0.10	2.90	0.996	0.010	4.4	7.0			0.265
BHEP	5.1	0.10	2.90	0.996	0.010	5.1	7.0			0.261
BHEP	5.1	0.10	2.90	0.996	0.010	5.6	7.0			0.258
BHEP	5.1	0.10	2.90	0.996	0.010	6.2	7.0			0.259
BHEP	5.1	0.10	2.90	0.996	0.010	6.6	7.0			0.258
BHEP	5.1	0.10	2.90	0.996	0.010	0.0	7.0			0.253
BHEP	5.1	0.10	2.90	0.996	0.010	0.0	7.0			0.262
BHEP	5.1	0.10	2.90	0.996	0.010	1.8	7.0			0.280
BHEP	5.1	0.10	2.90	0.996	0.010	2.1	7.0			0.280
BHEP	5.1	0.10	2.90	0.996	0.010	2.6	7.0			0.275
BHEP	5.1	0.10	2.90	0.996	0.010	3.3	7.0			0.272
BHEP	5.1	0.10	2.90	0.996	0.010	3.9	7.0			0.271
BHEP	5.1	0.10	2.90	0.996	0.010	4.5	7.0			0.266
BHEP	5.1	0.10	2.90	0.996	0.010	5.5	7.0			0.262
BHEP	5.1	0.10	2.90	0.996	0.010	6.1	7.0			0.263
BHEP	5.1	0.10	2.90	0.996	0.010	6.6	7.0			0.260
BHEP	5.1	0.10	2.90	0.996	0.010	3.2	7.6			0.283

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BHEP	5.1	0.10	2.90	0.996	0.010	3.8	7.6			0.274
BHEP	5.1	0.10	2.90	0.996	0.010	3.8	7.6			0.278
BHEP	5.1	0.10	2.90	0.996	0.010	4.3	7.6			0.267
BHEP	5.1	0.10	2.90	0.996	0.010	4.4	7.6			0.275
BHEP	5.1	0.10	2.90	0.996	0.010	5.1	7.6			0.260
BHEP	5.1	0.10	2.90	0.996	0.010	5.1	7.6			0.269
BHEP	5.1	0.10	2.90	0.996	0.010	5.3	7.6			0.266
BHEP	5.1	0.10	2.90	0.996	0.010	5.6	7.6			0.256
BHEP	5.1	0.10	2.90	0.996	0.010	6.2	7.6			0.253
BHEP	5.1	0.10	2.90	0.996	0.010	6.7	7.6			0.250
BHEP	2.0	0.10	2.90	0.996	0.010	0.1	6.0			0.262
BHEP	2.0	0.10	2.90	0.996	0.010	0.5	6.0			0.267
BHEP	2.0	0.10	2.90	0.996	0.010	1.0	6.0			0.263
BHEP	2.0	0.10	2.90	0.996	0.010	1.4	6.0			0.256
BHEP	2.0	0.10	2.90	0.996	0.010	2.2	6.0			0.244
BHEP	2.0	0.10	2.90	0.996	0.010	3.0	6.0			0.224
BHEP	2.0	0.10	2.90	0.996	0.010	3.7	6.0			0.220
BHEP	2.0	0.10	2.90	0.996	0.010	3.8	6.0			0.213
BHEP	2.0	0.10	2.90	0.996	0.010	5.0	6.0			0.205
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	6.4			0.232
BHEP	2.0	0.10	2.90	0.996	0.010	0.0	6.4			0.242
BHEP	2.0	0.10	2.90	0.996	0.010	0.7	6.4			0.248
BHEP	2.0	0.10	2.90	0.996	0.010	1.7	6.4			0.239
BHEP	2.0	0.10	2.90	0.996	0.010	1.8	6.4			0.231
BHEP	2.0	0.10	2.90	0.996	0.010	2.4	6.4			0.223
BHEP	2.0	0.10	2.90	0.996	0.010	2.7	6.4			0.218
BHEP	2.0	0.10	2.90	0.996	0.010	3.3	6.4			0.211
BHEP	2.0	0.10	2.90	0.996	0.010	3.5	6.4			0.202
BHEP	2.0	0.10	2.90	0.996	0.010	3.9	6.4			0.201
BHEP	2.0	0.10	2.90	0.996	0.010	4.2	6.4			0.200
BHEP	5.1	0.20	11.00	0.996	0.010	2.6	26.4	0.674	0.025	0.301
BHEP	5.1	0.20	11.00	0.996	0.010	3.7	26.4	0.635	0.074	0.291
BHEP	5.1	0.20	11.00	0.996	0.010	4.8	26.4	0.631	0.081	0.288
BHEP	5.1	0.20	11.00	0.996	0.010	6.0	26.4	0.624	0.099	0.277
BHEP	5.1	0.20	11.00	0.996	0.010	6.9	26.4	0.579	0.139	0.282
BHEP	5.1	0.20	11.00	0.996	0.010	7.8	26.4	0.592	0.118	0.290
BHEP	5.1	0.20	11.00	0.996	0.010	8.1	26.4	0.619	0.090	0.291
BHEP	5.1	0.20	11.00	0.996	0.010	9.0	26.4	0.580	0.120	0.300
BHEP	5.1	0.20	11.00	0.996	0.010	15.4	26.4		0.199	
BHEP	5.1	0.20	11.00	0.996	0.010	16.0	26.4		0.130	
BHEP	5.1	0.20	11.00	0.996	0.010	20.6	26.4	0.518	0.211	0.271
BHEP	5.1	0.20	11.00	0.996	0.010	2.1	38.8	0.772	0.043	0.185
BHEP	5.1	0.20	11.00	0.996	0.010	6.4	38.8	0.731	0.104	0.165
BHEP	5.1	0.20	11.00	0.996	0.010	9.2	38.8	0.703	0.118	0.179
BHEP	5.1	0.20	11.00	0.996	0.010	12.8	38.8	0.675	0.147	0.178
BHEP	5.1	0.20	11.00	0.996	0.010	18.5	38.8	0.649	0.180	0.171
BHEP	5.1	0.20	11.00	0.996	0.010	3.9	17.8	0.521	0.082	0.397
BHEP	5.1	0.20	11.00	0.996	0.010	6.3	17.8	0.502	0.111	0.387
BHEP	5.1	0.20	11.00	0.996	0.010	7.1	17.8	0.517	0.109	0.374
BHEP	5.1	0.20	11.00	0.996	0.010	8.4	17.8	0.488	0.145	0.367

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BHEP	5.1	0.20	11.00	0.996	0.010	9.4	17.8	0.479	0.150	0.371
BHEP	5.1	0.20	11.00	0.996	0.010	10.3	17.8	0.464	0.162	0.374
BHEP	5.1	0.20	11.00	0.996	0.010	11.3	17.8		0.137	
BHEP	5.1	0.20	11.00	0.996	0.010	2.9	8.3	0.420	0.031	0.549
BHEP	5.1	0.20	11.00	0.996	0.010	4.3	8.3	0.372	0.087	0.541
BHEP	5.1	0.20	11.00	0.996	0.010	5.4	8.3	0.322	0.147	0.531
BHEP	5.1	0.20	11.00	0.996	0.010	6.4	8.3	0.364	0.118	0.518
BHEP	5.1	0.20	11.00	0.996	0.010	7.3	8.3		0.153	
BHEP	5.1	0.20	11.00	0.996	0.010	8.3	8.3	0.330	0.156	0.514
BHEP	5.1	0.20	11.00	0.996	0.010	9.1	8.3	0.291	0.183	0.526
BHEP	5.1	0.20	11.00	0.996	0.010	0.0	8.3			0.584
BHEP	5.1	0.20	11.00	0.996	0.010	2.9	8.3			0.549
BHEP	5.1	0.20	11.00	0.996	0.010	4.2	8.3			0.541
MUKH	5.2	0.41	2.78	1.000	0.010	0.6	21.4	0.760		
MUKH	5.2	0.41	2.78	1.000	0.010	1.3	21.4	0.740		
MUKH	5.2	0.41	2.78	1.000	0.010	2.3	21.4	0.740		
MUKH	5.2	0.41	2.78	1.000	0.010	3.5	21.4	0.720		
MUKH	5.2	0.41	2.78	1.000	0.010	4.9	21.4	0.710		
MUKH	5.2	0.41	2.78	1.000	0.010	5.6	21.4	0.680		
MUKH	5.2	0.41	2.78	1.000	0.010	6.5	21.4	0.680		
MUKH	5.2	0.41	2.78	1.000	0.010	7.9	21.4	0.640		
MUKH	5.2	0.41	2.78	1.000	0.010	9.0	21.4	0.650		
MUKH	5.2	0.41	2.78	1.000	0.010	11.1	21.4	0.630		
MUKH	5.2	0.41	2.78	1.000	0.010	11.7	21.4	0.620		
MUKH	5.2	0.41	2.78	1.000	0.010	12.0	21.4	0.640		
MUKH	5.2	0.41	2.78	1.000	0.010	13.4	21.4	0.600		
MUKH	5.2	0.41	2.78	1.000	0.010	0.6	18.2	0.680		
MUKH	5.2	0.41	2.78	1.000	0.010	1.4	18.2	0.660		
MUKH	5.2	0.41	2.78	1.000	0.010	2.0	18.2	0.640		
MUKH	5.2	0.41	2.78	1.000	0.010	3.0	18.2	0.660		
MUKH	5.2	0.41	2.78	1.000	0.010	4.3	18.2	0.620		
MUKH	5.2	0.41	2.78	1.000	0.010	5.8	18.2	0.590		
MUKH	5.2	0.41	2.78	1.000	0.010	7.4	18.2	0.580		
MUKH	5.2	0.41	2.78	1.000	0.010	8.2	18.2	0.560		
MUKH	5.2	0.41	2.78	1.000	0.010	8.6	18.2	0.570		
MUKH	5.2	0.41	2.78	1.000	0.010	9.7	18.2	0.540		
MUKH	5.2	0.41	2.78	1.000	0.010	10.8	18.2	0.510		
MUKH	5.2	0.41	2.78	1.000	0.010	11.8	18.2	0.510		
MUKH	5.2	0.41	2.78	1.000	0.010	12.7	18.2	0.490		
MUKH	5.2	0.41	2.78	1.000	0.010	2.0	14.6	0.520		
MUKH	5.2	0.41	2.78	1.000	0.010	4.9	14.6	0.480		
MUKH	5.2	0.41	2.78	1.000	0.010	11.9	14.6	0.340		
MUKH	5.2	0.41	2.78	1.000	0.010	12.9	14.6	0.330		
MUKH	5.2	0.41	2.78	1.000	0.010	0.8	9.3	0.410		
MUKH	5.2	0.41	2.78	1.000	0.010	1.5	9.3	0.410		
MUKH	5.2	0.41	2.78	1.000	0.010	2.1	9.3	0.380		
MUKH	5.2	0.41	2.78	1.000	0.010	3.5	9.3	0.340		
MUKH	5.2	0.41	2.78	1.000	0.010	5.6	9.3	0.310		
MUKH	5.2	0.41	2.78	1.000	0.010	6.6	9.3	0.300		
MUKH	5.2	0.41	2.78	1.000	0.010	7.5	9.3	0.320		

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
MUKH	5.2	0.41	2.78	1.000	0.010	9.1	9.3	0.300		
MUKH	5.2	0.41	2.78	1.000	0.010	9.9	9.3	0.320		
MUKH	5.2	0.41	2.78	1.000	0.010	11.1	9.3	0.310		
MUKH	5.2	0.41	2.78	1.000	0.010	11.8	9.3	0.300		
MUKH	5.2	0.41	2.78	1.000	0.010	12.2	9.3	0.310		
MUKH	5.2	0.28	2.92	1.000	0.010	0.6	13.9	0.760		
MUKH	5.2	0.28	2.92	1.000	0.010	1.5	13.9	0.740		
MUKH	5.2	0.28	2.92	1.000	0.010	2.9	13.9	0.720		
MUKH	5.2	0.28	2.92	1.000	0.010	3.9	13.9	0.740		
MUKH	5.2	0.28	2.92	1.000	0.010	5.5	13.9	0.710		
MUKH	5.2	0.28	2.92	1.000	0.010	8.0	13.9	0.650		
MUKH	5.2	0.28	2.92	1.000	0.010	9.8	13.9	0.650		
MUKH	5.2	0.28	2.92	1.000	0.010	11.0	13.9	0.630		
MUKH	5.2	0.28	2.92	1.000	0.010	0.7	12.2	0.660		
MUKH	5.2	0.28	2.92	1.000	0.010	1.5	12.2	0.630		
MUKH	5.2	0.28	2.92	1.000	0.010	2.4	12.2	0.630		
MUKH	5.2	0.28	2.92	1.000	0.010	4.1	12.2	0.570		
MUKH	5.2	0.28	2.92	1.000	0.010	7.7	12.2	0.530		
MUKH	5.2	0.28	2.92	1.000	0.010	8.6	12.2	0.490		
MUKH	5.2	0.28	2.92	1.000	0.010	10.7	12.2	0.450		
MUKH	5.2	0.28	2.92	1.000	0.010	0.5	11.1	0.470		
MUKH	5.2	0.28	2.92	1.000	0.010	1.3	11.1	0.480		
MUKH	5.2	0.28	2.92	1.000	0.010	2.5	11.1	0.460		
MUKH	5.2	0.28	2.92	1.000	0.010	4.0	11.1	0.370		
MUKH	5.2	0.28	2.92	1.000	0.010	5.2	11.1	0.340		
MUKH	5.2	0.28	2.92	1.000	0.010	6.6	11.1	0.320		
MUKH	5.2	0.28	2.92	1.000	0.010	7.7	11.1	0.290		
MUKH	5.2	0.28	2.92	1.000	0.010	8.8	11.1	0.270		
MUKH	5.2	0.28	2.92	1.000	0.010	10.2	11.1	0.270		
MUKH	5.2	0.28	2.92	1.000	0.010	0.6	9.2	0.340		
MUKH	5.2	0.28	2.92	1.000	0.010	1.4	9.2	0.310		
MUKH	5.2	0.28	2.92	1.000	0.010	1.9	9.2	0.300		
MUKH	5.2	0.28	2.92	1.000	0.010	3.0	9.2	0.270		
MUKH	5.2	0.28	2.92	1.000	0.010	3.9	9.2	0.240		
MUKH	5.2	0.28	2.92	1.000	0.010	5.1	9.2	0.230		
MUKH	5.2	0.28	2.92	1.000	0.010	6.5	9.2	0.220		
MUKH	5.2	0.28	2.92	1.000	0.010	7.9	9.2	0.180		
MUKH	5.2	0.28	2.92	1.000	0.010	8.7	9.2	0.190		
MUKH	5.2	0.28	2.92	1.000	0.010	9.3	9.2	0.170		
MUKH	5.2	0.28	2.92	1.000	0.010	10.7	9.2	0.190		
MUKH	5.2	0.14	2.86	1.000	0.010	0.8	12.0	0.840		
MUKH	5.2	0.14	2.86	1.000	0.010	1.4	12.0	0.820		
MUKH	5.2	0.14	2.86	1.000	0.010	2.4	12.0	0.800		
MUKH	5.2	0.14	2.86	1.000	0.010	3.0	12.0	0.770		
MUKH	5.2	0.14	2.86	1.000	0.010	3.7	12.0	0.720		
MUKH	5.2	0.14	2.86	1.000	0.010	4.5	12.0	0.740		
MUKH	5.2	0.14	2.86	1.000	0.010	5.5	12.0	0.700		
MUKH	5.2	0.14	2.86	1.000	0.010	6.5	12.0	0.640		
MUKH	5.2	0.14	2.86	1.000	0.010	7.5	12.0	0.590		
MUKH	5.2	0.14	2.86	1.000	0.010	7.9	12.0	0.600		

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
MUKH	5.2	0.14	2.86	1.000	0.010	0.8	9.5	0.690		
MUKH	5.2	0.14	2.86	1.000	0.010	1.8	9.5	0.650		
MUKH	5.2	0.14	2.86	1.000	0.010	3.1	9.5	0.580		
MUKH	5.2	0.14	2.86	1.000	0.010	4.7	9.5	0.580		
MUKH	5.2	0.14	2.86	1.000	0.010	6.1	9.5	0.500		
MUKH	5.2	0.14	2.86	1.000	0.010	7.7	9.5	0.460		
MUKH	5.2	0.14	2.86	1.000	0.010	8.8	9.5	0.440		
MUKH	5.2	0.14	2.86	1.000	0.010	0.8	3.2	0.520		
MUKH	5.2	0.14	2.86	1.000	0.010	1.6	3.2	0.460		
MUKH	5.2	0.14	2.86	1.000	0.010	2.7	3.2	0.410		
MUKH	5.2	0.14	2.86	1.000	0.010	3.8	3.2	0.390		
MUKH	5.2	0.14	2.86	1.000	0.010	5.1	3.2	0.340		
MUKH	5.2	0.14	2.86	1.000	0.010	6.8	3.2	0.290		
MUKH	5.2	0.14	2.86	1.000	0.010	8.3	3.2	0.290		
MUKH	5.2	0.14	2.86	1.000	0.010	1.1	1.3	0.380		
MUKH	5.2	0.14	2.86	1.000	0.010	2.3	1.3	0.320		
MUKH	5.2	0.14	2.86	1.000	0.010	3.4	1.3	0.280		
MUKH	5.2	0.14	2.86	1.000	0.010	4.5	1.3	0.260		
MUKH	5.2	0.14	2.86	1.000	0.010	5.6	1.3	0.230		
MUKH	5.2	0.14	2.86	1.000	0.010	6.9	1.3	0.210		
MUKH	5.2	0.03	2.92	1.000	0.010	0.6	6.8	0.760		
MUKH	5.2	0.03	2.92	1.000	0.010	1.3	6.8	0.700		
MUKH	5.2	0.03	2.92	1.000	0.010	2.2	6.8	0.690		
MUKH	5.2	0.03	2.92	1.000	0.010	3.5	6.8	0.620		
MUKH	5.2	0.03	2.92	1.000	0.010	4.0	6.8	0.630		
MUKH	5.2	0.03	2.92	1.000	0.010	4.7	6.8	0.610		
MUKH	5.2	0.03	2.92	1.000	0.010	0.9	1.7	0.580		
MUKH	5.2	0.03	2.92	1.000	0.010	1.9	1.7	0.520		
MUKH	5.2	0.03	2.92	1.000	0.010	2.8	1.7	0.480		
MUKH	5.2	0.03	2.92	1.000	0.010	3.7	1.7	0.480		
MUKH	5.2	0.03	2.92	1.000	0.010	4.9	1.7	0.400		
MUKH	5.2	0.03	2.92	1.000	0.010	5.7	1.7	0.400		
MUKH	5.2	0.03	2.92	1.000	0.010	0.6	1.0	0.490		
MUKH	5.2	0.03	2.92	1.000	0.010	1.4	1.0	0.430		
MUKH	5.2	0.03	2.92	1.000	0.010	2.3	1.0	0.410		
MUKH	5.2	0.03	2.92	1.000	0.010	3.6	1.0	0.310		
MUKH	5.2	0.03	2.92	1.000	0.010	5.4	1.0	0.320		
RIGC	10.0	0.08	2.50	1.000	0.010	0.0	6.9			0.282
RIGC	10.0	0.08	2.50	1.000	0.010	0.3	6.9			0.295
RIGC	10.0	0.08	2.50	1.000	0.010	0.5	6.9			0.300
RIGC	10.0	0.08	2.50	1.000	0.010	0.8	6.9			0.301
RIGC	10.0	0.08	2.50	1.000	0.010	1.0	6.9			0.305
RIGC	10.0	0.08	2.50	1.000	0.010	1.5	6.9			0.305
RIGC	10.0	0.08	2.50	1.000	0.010	2.0	6.9			0.302
RIGC	10.0	0.08	2.50	1.000	0.010	0.0	5.5			0.334
RIGC	10.0	0.08	2.50	1.000	0.010	0.2	5.5			0.348
RIGC	10.0	0.08	2.50	1.000	0.010	0.5	5.5			0.357
RIGC	10.0	0.08	2.50	1.000	0.010	0.8	5.5			0.361
RIGC	10.0	0.08	2.50	1.000	0.010	1.0	5.5			0.364
RIGC	10.0	0.08	2.50	1.000	0.010	1.5	5.5			0.363

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
RIGC	10.0	0.08	2.50	1.000	0.010	2.0	5.5			0.363
RIGC	10.0	0.08	2.50	1.000	0.010	0.0	4.1			0.391
RIGC	10.0	0.08	2.50	1.000	0.010	0.2	4.1			0.403
RIGC	10.0	0.08	2.50	1.000	0.010	0.5	4.1			0.409
RIGC	10.0	0.08	2.50	1.000	0.010	0.8	4.1			0.411
RIGC	10.0	0.08	2.50	1.000	0.010	1.0	4.1			0.412
RIGC	10.0	0.08	2.50	1.000	0.010	1.5	4.1			0.415
RIGC	10.0	0.08	2.50	1.000	0.010	2.0	4.1			0.412
RIGC	10.0	0.08	2.50	1.000	0.010	0.0	2.8			0.493
RIGC	10.0	0.08	2.50	1.000	0.010	0.2	2.8			0.504
RIGC	10.0	0.08	2.50	1.000	0.010	0.5	2.8			0.509
RIGC	10.0	0.08	2.50	1.000	0.010	0.8	2.8			0.518
RIGC	10.0	0.08	2.50	1.000	0.010	1.0	2.8			0.518
RIGC	10.0	0.08	2.50	1.000	0.010	1.5	2.8			0.516
RIGC	10.0	0.08	2.50	1.000	0.010	2.0	2.8			0.516
RIGC	10.0	0.08	2.50	1.000	0.010	0.0	1.4			0.589
RIGC	10.0	0.08	2.50	1.000	0.010	0.3	1.4			0.602
RIGC	10.0	0.08	2.50	1.000	0.010	0.5	1.4			0.609
RIGC	10.0	0.08	2.50	1.000	0.010	0.7	1.4			0.614
RIGC	10.0	0.08	2.50	1.000	0.010	1.0	1.4			0.621
RIGC	10.0	0.08	2.50	1.000	0.010	1.5	1.4			0.633
RIGC	10.0	0.08	2.50	1.000	0.010	2.0	1.4			0.634
RIGC	10.0	0.08	2.50	1.000	0.010	2.4	1.4			0.631
BHEP	5.1	0.20	11.00	0.996	0.010	0.0	17.8			0.415
BHEP	5.1	0.20	11.00	0.996	0.010	0.0	17.8			0.422
BHEP	5.1	0.20	11.00	0.996	0.010	0.0	26.4			0.313
BHEP	5.1	0.20	11.00	0.996	0.010	0.0	26.4			0.323
BHEP	5.1	0.20	11.00	0.996	0.010	0.0	38.8			0.194
BHEP	5.1	0.10	2.90	0.996	0.010	9.9	12.8	0.711	0.148	0.141
BHEP	5.1	0.10	2.90	0.996	0.010	9.9	12.8	0.700	0.159	0.141
BHEP	5.1	0.10	2.90	0.996	0.010	11.5	12.8	0.697	0.165	0.138
BHEP	5.1	0.10	2.90	0.996	0.010	0.0	12.8			0.117
BHEP	5.1	0.10	2.90	0.996	0.010	0.0	12.8			0.123
BHEP	5.1	0.10	2.90	0.996	0.010	3.2	12.8			0.138
BHEP	5.1	0.10	2.90	0.996	0.010	4.9	12.8			0.152
BHEP	5.1	0.10	2.90	0.996	0.010	8.2	12.8			0.139
BHEP	5.1	0.10	2.90	0.996	0.010	0.0	7.6			0.240
BHEP	5.1	0.10	2.90	0.996	0.010	4.3	7.6			0.264
BHEP	5.1	0.10	2.90	0.996	0.010	5.1	7.6			0.256
BHEP	5.1	0.10	2.90	0.996	0.010	5.1	7.6			0.267
KHOS	7.6	0.21	1.71	0.997	0.009	3.5	2.1	0.412	0.086	0.502
KHOS	7.6	0.21	1.71	0.997	0.009	3.5	2.4	0.424	0.086	0.490
KHOS	7.6	0.21	1.71	0.997	0.009	3.5	2.4	0.433	0.075	0.491
KHOS	7.6	0.21	1.71	0.997	0.009	3.5	3.0	0.430	0.094	0.476
KHOS	7.6	0.19	1.71	0.997	0.009	5.5	1.5	0.498	0.031	0.471
KHOS	7.6	0.19	1.71	0.997	0.009	5.5	1.8	0.498	0.059	0.442
KHOS	7.6	0.19	1.71	0.997	0.009	5.5	2.1	0.512	0.026	0.462
KHOS	7.6	0.19	1.71	0.997	0.009	5.5	2.4	0.530	0.012	0.458
KHOS	7.6	0.19	1.71	0.997	0.009	5.5	3.6	0.591	0.025	0.384
KHOS	7.6	0.19	1.71	0.997	0.009	5.4	4.8	0.668	0.009	0.323

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
KHOS	7.6	0.19	1.71	0.997	0.009	1.6	1.5	0.515	0.078	0.406
KHOS	7.6	0.19	1.71	0.997	0.009	1.6	1.8	0.500	0.020	0.480
KHOS	7.6	0.19	1.71	0.997	0.009	1.6	2.4	0.503	0.036	0.461
KHOS	7.6	0.19	1.71	0.997	0.009	1.6	3.6	0.529	0.027	0.444
KHOS	7.6	0.19	1.71	0.997	0.009	1.6	4.8	0.634	0.037	0.329
KHOS	7.6	0.19	1.71	0.997	0.009	2.7	1.2	0.238	0.155	0.607
KHOS	7.6	0.19	1.71	0.997	0.009	2.7	1.5	0.265	0.131	0.604
KHOS	7.6	0.19	1.71	0.997	0.009	2.7	1.8	0.287	0.096	0.617
KHOS	7.6	0.19	1.71	0.997	0.009	2.7	2.4	0.455	0.075	0.470
KHOS	7.6	0.19	1.71	0.997	0.009	2.7	3.0	0.454	0.082	0.465
KHOS	7.6	0.19	1.71	0.997	0.009	2.7	4.1	0.505	0.062	0.434
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	2.4	0.283	0.139	0.577
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	3.0	0.313	0.116	0.571
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	3.6	0.349	0.132	0.519
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	4.1	0.328	0.159	0.513
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	4.8	0.361	0.130	0.509
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	5.3	0.378	0.124	0.497
KHOS	7.6	0.61	1.94	0.997	0.009	1.1	5.9	0.354	0.151	0.495
KHOS	7.6	0.61	1.94	0.997	0.009	1.6	3.0	0.232	0.185	0.584
KHOS	7.6	0.61	1.94	0.997	0.009	1.6	3.6	0.322	0.158	0.519
KHOS	7.6	0.61	1.94	0.997	0.009	1.6	4.1	0.340	0.158	0.503
KHOS	7.6	0.61	1.94	0.997	0.009	1.6	4.8	0.306	0.184	0.510
KHOS	7.6	0.61	1.94	0.997	0.009	1.6	5.3	0.102	0.282	0.616
KHOS	7.6	0.61	1.94	0.997	0.009	1.6	5.9	0.345	0.164	0.490
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	2.4	0.221	0.186	0.593
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	3.0	0.212	0.196	0.592
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	3.6	0.326	0.159	0.515
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	4.1	0.333	0.159	0.508
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	4.8	0.337	0.166	0.497
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	5.3	0.336	0.169	0.495
KHOS	7.6	0.61	1.94	0.997	0.009	1.3	5.9	0.365	0.144	0.491
KHOS	7.6	0.61	1.94	0.997	0.009	1.9	2.4	0.221	0.195	0.584
KHOS	7.6	0.61	1.94	0.997	0.009	1.9	3.0	0.299	0.176	0.525
KHOS	7.6	0.61	1.94	0.997	0.009	1.9	3.6	0.344	0.153	0.503
KHOS	7.6	0.61	1.94	0.997	0.009	1.9	4.1	0.369	0.186	0.445
KHOS	7.6	0.61	1.94	0.997	0.009	1.9	4.8	0.358	0.187	0.455
KHOS	7.6	0.61	1.94	0.997	0.009	1.9	5.3	0.325	0.188	0.487
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	4.2	0.441	0.058	0.500
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	4.8	0.438	0.070	0.492
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	5.4	0.441	0.077	0.482
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	6.0	0.455	0.074	0.471
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	6.6	0.462	0.073	0.465
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	7.2	0.513	0.064	0.423
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	7.8	0.519	0.067	0.414
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	8.3	0.529	0.067	0.404
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	8.1	0.522	0.070	0.409
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	7.5	0.511	0.070	0.419
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	6.9	0.502	0.069	0.429
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	6.3	0.460	0.071	0.469
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	5.7	0.469	0.053	0.478

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BLOX	7.6	0.46	2.26	0.997	0.009	3.5	8.6	0.526	0.072	0.402
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	3.0	0.296	0.107	0.597
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	3.6	0.375	0.109	0.516
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	4.2	0.382	0.109	0.509
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	4.8	0.395	0.121	0.484
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	5.4	0.406	0.114	0.479
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	5.7	0.419	0.110	0.471
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	6.0	0.421	0.115	0.464
BLOX	7.6	0.46	2.26	0.997	0.009	7.0	6.3	0.420	0.117	0.463
BLOX	7.6	0.46	2.26	0.997	0.009	6.9	6.7	0.422	0.116	0.462
BLOX	7.6	0.46	2.26	0.997	0.009	6.9	7.2	0.473	0.105	0.423
BLOX	7.6	0.46	2.26	0.997	0.009	6.9	7.8	0.482	0.105	0.413
BLOX	7.6	0.46	2.26	0.997	0.009	6.9	8.3	0.488	0.109	0.403
BLOX	7.6	0.46	2.26	0.997	0.009	6.9	8.9	0.487	0.118	0.395
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	3.0	0.371	0.124	0.505
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	3.6	0.376	0.129	0.495
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	4.8	0.394	0.124	0.482
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	5.1	0.396	0.127	0.477
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	5.4	0.399	0.127	0.474
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	5.7	0.396	0.133	0.472
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	6.1	0.406	0.127	0.467
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	6.6	0.412	0.127	0.461
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	6.9	0.462	0.116	0.422
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	7.4	0.464	0.118	0.417
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	7.8	0.460	0.127	0.413
BLOX	7.6	0.46	2.26	0.996	0.009	1.0	8.1	0.462	0.129	0.408
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	3.3	0.311	0.097	0.592
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	4.2	0.399	0.092	0.510
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	4.8	0.421	0.078	0.501
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	5.0	0.421	0.097	0.481
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	5.4	0.427	0.096	0.477
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	6.0	0.435	0.096	0.469
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	6.3	0.439	0.096	0.465
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	6.7	0.446	0.095	0.460
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	7.0	0.484	0.092	0.424
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	7.4	0.493	0.090	0.417
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	7.8	0.491	0.098	0.411
BLOX	7.6	0.46	2.26	0.996	0.009	5.2	8.1	0.499	0.097	0.405
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	3.3	0.386	0.111	0.503
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	4.2	0.399	0.110	0.491
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	4.5	0.393	0.118	0.489
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	4.9	0.426	0.110	0.464
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	5.3	0.406	0.116	0.478
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	5.6	0.417	0.110	0.473
BLOX	7.6	0.46	2.26	0.996	0.009	6.9	6.0	0.423	0.109	0.468
BLOX	7.6	0.46	2.26	0.996	0.009	6.9	6.6	0.473	0.101	0.426
BLOX	7.6	0.46	2.26	0.996	0.009	6.9	6.8	0.470	0.105	0.425
BLOX	7.6	0.46	2.26	0.996	0.009	6.9	7.2	0.479	0.102	0.420
BLOX	7.6	0.46	2.26	0.996	0.009	6.9	7.8	0.488	0.101	0.412
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	3.3	0.368	0.124	0.508

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	4.2	0.380	0.124	0.496
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	4.5	0.387	0.128	0.485
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	4.9	0.397	0.124	0.479
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	5.3	0.391	0.130	0.479
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	5.6	0.401	0.126	0.473
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	6.0	0.411	0.120	0.469
BLOX	7.6	0.46	2.26	0.996	0.009	8.8	6.6	0.418	0.120	0.461
BLOX	7.6	0.46	2.26	0.996	0.009	8.7	6.8	0.415	0.124	0.461
BLOX	7.6	0.46	2.26	0.996	0.009	8.7	7.2	0.472	0.108	0.420
BLOX	7.6	0.46	2.26	0.996	0.009	8.7	7.8	0.473	0.112	0.415
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	3.0	0.314	0.121	0.565
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	3.3	0.317	0.126	0.556
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	4.2	0.389	0.116	0.495
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	4.5	0.396	0.114	0.490
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	4.9	0.401	0.114	0.485
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	5.3	0.405	0.116	0.479
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	5.6	0.403	0.120	0.477
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	6.0	0.411	0.117	0.472
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	6.6	0.419	0.116	0.465
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	7.2	0.470	0.105	0.425
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	7.8	0.479	0.105	0.416
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	8.3	0.487	0.106	0.407
BLOX	7.6	0.46	2.26	0.996	0.009	7.0	8.9	0.485	0.114	0.401
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	2.0	0.236	0.197	0.567
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	2.4	0.243	0.195	0.562
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	2.9	0.332	0.168	0.500
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	3.4	0.348	0.161	0.491
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	3.6	0.349	0.161	0.489
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	4.2	0.357	0.156	0.487
BLOX	7.6	0.46	2.26	0.996	0.009	14.1	4.8	0.367	0.150	0.483
BLOX	7.6	0.46	2.26	0.996	0.009	14.0	5.4	0.378	0.146	0.476
BLOX	7.6	0.46	2.26	0.996	0.009	14.0	6.0	0.378	0.146	0.476
BLOX	7.6	0.46	2.26	0.996	0.009	14.0	7.2	0.434	0.144	0.422
BLOX	7.6	0.46	2.26	0.996	0.009	14.0	8.3	0.428	0.164	0.408
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	0.8	0.300	0.116	0.584
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	1.1	0.393	0.101	0.506
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	1.4	0.402	0.099	0.499
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	1.9	0.408	0.100	0.491
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	2.8	0.428	0.095	0.476
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	2.8	0.432	0.094	0.474
BLOX	7.6	0.46	2.26	1.160	0.110	3.5	3.5	0.488	0.086	0.425
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	0.6	0.290	0.125	0.585
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	7.7	0.295	0.136	0.569
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	1.1	0.318	0.123	0.559
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	1.4	0.385	0.114	0.500
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	1.9	0.392	0.117	0.491
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	2.8	0.407	0.114	0.479
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	2.8	0.406	0.116	0.478
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	3.5	0.479	0.102	0.419
BLOX	7.6	0.46	2.26	1.160	0.116	5.3	4.2	0.482	0.106	0.412

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	0.6	0.591	-0.172	0.581
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	0.8	0.598	-0.168	0.569
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	1.1	0.611	-0.173	0.562
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	1.4	0.653	-0.152	0.499
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	1.9	0.658	-0.152	0.494
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	2.8	0.656	-0.139	0.482
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	3.0	0.655	-0.136	0.481
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	3.5	0.687	-0.113	0.426
BLOX	7.6	0.46	2.26	1.160	0.114	7.0	4.2	0.688	-0.103	0.415
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	0.8	0.280	0.149	0.572
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	1.1	0.285	0.151	0.563
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	1.4	0.366	0.134	0.500
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	1.9	0.368	0.139	0.493
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	2.8	0.380	0.138	0.482
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	3.0	0.383	0.138	0.479
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	3.5	0.374	0.154	0.472
BLOX	7.6	0.46	2.26	1.160	0.115	8.8	4.2	0.448	0.137	0.415
BLOX	7.6	0.46	2.25	1.160	0.114	12.3	0.6	0.245	0.183	0.572
BLOX	7.6	0.46	2.26	1.160	0.114	12.3	0.8	0.267	0.169	0.564
BLOX	7.6	0.46	2.26	1.160	0.114	12.3	1.1	0.276	0.173	0.551
BLOX	7.6	0.46	2.26	1.160	0.114	12.3	1.9	0.356	0.162	0.482
BLOX	7.6	0.46	2.26	1.160	0.114	12.3	2.8	0.367	0.162	0.471
BLOX	7.6	0.46	2.26	1.160	0.114	12.3	3.5	0.356	0.176	0.469
BLOX	7.6	0.46	2.26	1.160	0.114	12.3	4.2	0.438	0.143	0.418
BLOX	7.6	0.46	2.26	1.150	0.091	3.5	1.4	0.345	0.102	0.553
BLOX	7.6	0.46	2.26	1.150	0.091	3.5	2.0	0.408	0.094	0.499
BLOX	7.6	0.46	2.26	1.150	0.091	3.5	2.8	0.429	0.091	0.480
BLOX	7.6	0.46	2.26	1.150	0.091	3.5	3.5	0.432	0.097	0.471
BLOX	7.6	0.46	2.26	1.150	0.091	3.5	4.6	0.504	0.086	0.410
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	1.1	0.315	0.118	0.567
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	1.4	0.385	0.109	0.506
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	2.0	0.393	0.109	0.499
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	2.8	0.416	0.102	0.482
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	3.5	0.420	0.108	0.473
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	4.6	0.482	0.106	0.413
BLOX	7.6	0.46	2.26	1.150	0.091	5.3	5.1	0.482	0.115	0.403
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	1.1	0.294	0.131	0.576
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	1.4	0.293	0.140	0.568
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	2.0	0.388	0.118	0.493
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	2.8	0.399	0.115	0.486
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	3.5	0.446	0.122	0.433
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	4.6	0.472	0.115	0.413
BLOX	7.6	0.46	2.26	1.150	0.092	7.0	5.1	0.472	0.122	0.406
BLOX	7.6	0.46	2.26	1.150	0.089	8.8	1.1	0.297	0.143	0.560
BLOX	7.6	0.46	2.25	1.150	0.089	8.8	1.4	0.295	0.146	0.560
BLOX	7.6	0.46	2.26	1.150	0.089	8.8	2.0	0.376	0.133	0.491
BLOX	7.6	0.46	2.26	1.150	0.089	8.8	2.8	0.397	0.127	0.476
BLOX	7.6	0.46	2.26	1.150	0.089	8.8	3.5	0.377	0.145	0.478
BLOX	7.6	0.46	2.26	1.150	0.089	8.8	4.6	0.449	0.132	0.419
BLOX	7.6	0.46	2.25	1.150	0.089	8.8	5.1	0.461	0.133	0.406

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	0.8	0.262	0.167	0.572
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	1.1	0.273	0.165	0.562
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	1.4	0.272	0.170	0.558
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	2.0	0.353	0.151	0.496
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	2.8	0.362	0.149	0.489
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	3.5	0.358	0.167	0.475
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	4.6	0.421	0.159	0.420
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	5.1	0.418	0.167	0.414
BLOX	7.6	0.46	2.26	1.150	0.088	12.3	5.6	0.419	0.175	0.405
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	1.4	0.412	0.079	0.509
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	2.0	0.414	0.084	0.502
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	2.8	0.432	0.081	0.487
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	3.8	0.444	0.080	0.476
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	4.3	0.452	0.087	0.461
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	4.8	0.506	0.077	0.417
BLOX	7.6	0.46	2.26	1.140	0.069	3.5	5.3	0.516	0.077	0.407
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	1.4	0.333	0.101	0.566
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	2.0	0.406	0.095	0.499
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	2.8	0.418	0.093	0.489
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	3.8	0.432	0.093	0.475
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	4.3	0.485	0.088	0.427
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	4.8	0.492	0.091	0.416
BLOX	7.6	0.46	2.26	1.140	0.067	5.3	5.3	0.498	0.092	0.411
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	1.4	0.326	0.113	0.561
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	2.0	0.403	0.103	0.494
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	2.8	0.416	0.098	0.486
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	3.8	0.420	0.104	0.476
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	4.3	0.417	0.012	0.468
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	4.8	0.481	0.099	0.420
BLOX	7.6	0.46	2.26	1.140	0.065	7.1	5.3	0.483	0.105	0.412
BLOX	7.6	0.46	2.26	1.140	0.065	8.9	1.4	0.300	0.135	0.566
BLOX	7.6	0.46	2.26	1.140	0.065	8.9	2.0	0.386	0.119	0.496
BLOX	7.6	0.46	2.26	1.140	0.065	8.9	2.8	0.394	0.116	0.490
BLOX	7.6	0.46	2.26	1.140	0.065	8.9	3.8	0.395	0.122	0.482
BLOX	7.6	0.46	2.26	1.140	0.065	8.9	4.8	0.462	0.117	0.421
BLOX	7.6	0.46	2.26	1.140	0.065	8.8	5.3	0.463	0.121	0.416
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	2.6	0.395	0.107	0.498
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	3.1	0.417	0.096	0.487
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	3.8	0.414	0.103	0.483
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	4.9	0.424	0.107	0.469
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	5.5	0.478	0.099	0.423
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	6.0	0.485	0.100	0.415
BLOX	7.6	0.46	2.26	1.100	0.037	5.3	6.6	0.483	0.107	0.410
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	2.0	0.311	0.132	0.557
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	2.6	0.381	0.122	0.497
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	3.1	0.392	0.117	0.491
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	3.8	0.403	0.114	0.483
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	4.9	0.462	0.111	0.428
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	5.5	0.467	0.111	0.422
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	6.0	0.471	0.115	0.414

Table 11 (continued)

LITR	DC	DP	RHOS	RHOL	MUL	UG	UL	EL	EG	ES
BLOX	7.6	0.46	2.26	1.100	0.038	7.1	6.6	0.473	0.118	0.409
BLOX	7.6	0.46	2.26	1.110	0.038	8.9	2.6	0.386	0.121	0.493
BLOX	7.6	0.46	2.26	1.110	0.038	8.9	3.1	0.391	0.118	0.491
BLOX	7.6	0.46	2.26	1.110	0.038	8.9	3.8	0.405	0.113	0.482
BLOX	7.6	0.46	2.26	1.110	0.038	8.8	4.9	0.402	0.128	0.470
BLOX	7.6	0.46	2.26	1.110	0.038	8.8	5.5	0.465	0.111	0.424
BLOX	7.6	0.46	2.26	1.110	0.038	8.8	6.0	0.470	0.118	0.412
BLOX	7.6	0.46	2.26	1.110	0.038	8.8	6.6	0.465	0.127	0.408
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	2.0	0.358	0.146	0.495
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	2.6	0.364	0.143	0.493
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	3.1	0.365	0.146	0.490
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	3.8	0.373	0.145	0.482
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	4.9	0.373	0.155	0.472
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	5.5	0.429	0.146	0.424
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	6.0	0.439	0.148	0.413
BLOX	7.6	0.46	2.26	1.100	0.038	12.4	6.6	0.432	0.158	0.411

Obtained From This Study

The overall phase holdups obtained in this study are presented in Table 12. The headings can be explained as follows:

1. UL is the liquid velocity in cm/sec,

2. ELC is the overall liquid holdup calculated by the conductivity method,

3. EGC is the overall gas holdup calculated by the conductivity method,

4. ESC is the overall solid holdup calculated by the conductivity method,

5. ELDP is the overall liquid holdup calculated by the pressure gradient method,

6. EGDP is the overall gas holdup calculated by the pressure gradient method,

7. ESDP is the overall solid holdup calculated by the pressure gradient method.

The run numbers and gas velocities (UG in cm/sec) are given as subheadings in the table.

Table 12. Overall phase holdups obtained from this study

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
		G67D13	IN	UG = 1.78		
4.77	0.427	0.046	0.527	0.418	0.051	0.531
7.16	0.566	0.010	0.424	0.488	0.054	0.458
9.54	0.658	-0.009	0.352	0.565	0.042	0.393
11.93	0.800	-0.051	0.251	0.634	0.041	0.324
		G68K13	IN	UG = 13.95		
2.39	0.220	0.207	0.573	0.270	0.179	0.551
3.58	0.334	0.170	0.496	0.337	0.168	0.495
4.77	0.403	0.134	0.463	0.354	0.162	0.485
5.96	0.457	0.130	0.413	0.394	0.165	0.441
7.16	0.493	0.117	0.390	0.415	0.161	0.424
8.35	0.524	0.128	0.348	0.448	0.170	0.382
9.54	0.554	0.140	0.307	0.494	0.173	0.333
10.74	0.715	0.057	0.228	0.502	0.176	0.322
11.93	0.689	0.096	0.215	0.590	0.151	0.259
		G72A13	IN	UG = 0.0		
5.96	0.544	-0.046	0.502	0.461	0.013	0.526
7.16	0.725	-0.121	0.396	0.508	0.015	0.477
8.35	0.645	-0.055	0.410	0.546	0.012	0.442
9.54	0.873	-0.166	0.293	0.575	0.011	0.414
10.74	0.794	-0.104	0.310	0.608	0.009	0.383
11.93	0.921	-0.161	0.239	0.633	0.012	0.356
		G74G13	IN	UG = 7.11		
3.58	0.407	0.089	0.505	0.349	0.121	0.530
4.77	0.512	0.049	0.439	0.376	0.124	0.499
5.96	0.458	0.090	0.452	0.425	0.109	0.466
		G75G13	IN	UG = 7.07		
7.16	0.587	0.028	0.385	0.444	0.108	0.448
8.35	0.540	0.088	0.373	0.478	0.122	0.400
9.54	0.580	0.098	0.322	0.512	0.136	0.352
		G76C13	IN	UG = 0.95		
3.58	0.405	0.027	0.569	0.362	0.050	0.588
4.77	0.538	-0.026	0.489	0.410	0.045	0.545
5.96	0.602	-0.044	0.442	0.472	0.028	0.500
7.16	0.554	0.001	0.445	0.512	0.025	0.463
8.35	0.620	-0.016	0.396	0.546	0.025	0.428
9.54	0.668	-0.029	0.360	0.578	0.022	0.400
10.74	0.683	-0.015	0.332	0.621	0.019	0.359
		G77J13	IN	UG = 12.47		
2.39	0.224	0.189	0.587	0.251	0.175	0.575
3.58	0.317	0.181	0.501	0.305	0.188	0.507
4.77	0.381	0.161	0.458	0.336	0.186	0.478
5.96	0.439	0.145	0.416	0.359	0.189	0.452
7.16	0.481	0.140	0.379	0.403	0.184	0.413
8.35	0.519	0.139	0.342	0.446	0.180	0.374
9.54	0.560	0.138	0.302	0.475	0.185	0.340
10.74	0.573	0.149	0.279	0.491	0.194	0.315
11.93	0.590	0.154	0.256	0.554	0.168	0.268

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G79L13 IN UG = 15.55						
2.39	0.216	0.223	0.561	0.243	0.208	0.549
3.58	0.304	0.210	0.486	0.286	0.220	0.494
4.77	0.371	0.179	0.450	0.341	0.196	0.463
5.96	0.419	0.180	0.401	0.357	0.215	0.428
7.16	0.463	0.182	0.355	0.390	0.223	0.387
8.35	0.504	0.166	0.330	0.418	0.214	0.368
9.54	0.516	0.182	0.302	0.437	0.226	0.337
10.74	0.534	0.181	0.285	0.458	0.223	0.319
11.93	0.562	0.188	0.251	0.562	0.187	0.250
G80B13 IN UG = 0.44						
4.77	0.459	-0.005	0.546	0.425	0.014	0.561
5.96	0.510	-0.008	0.498	0.474	0.012	0.514
7.16	0.568	-0.021	0.454	0.515	0.008	0.477
8.35	0.606	-0.021	0.415	0.553	0.008	0.439
9.54	0.655	-0.032	0.377	0.586	0.006	0.407
10.74	0.693	-0.033	0.340	0.616	0.010	0.374
11.93	0.722	-0.036	0.315	0.639	0.009	0.351
G82E13 IN UG = 3.58						
2.39	0.243	0.142	0.615	0.229	0.150	0.621
3.58	0.361	0.099	0.540	0.321	0.121	0.557
4.77	0.412	0.091	0.497	0.369	0.115	0.516
5.96	0.470	0.078	0.451	0.423	0.105	0.472
7.16	0.517	0.073	0.411	0.440	0.115	0.444
8.35	0.559	0.072	0.369	0.473	0.120	0.407
9.54	0.592	0.077	0.331	0.528	0.113	0.359
10.74	0.623	0.076	0.301	0.558	0.107	0.325
11.93	0.646	0.077	0.278	0.590	0.107	0.302
G85F13 IN UG = 5.31						
2.39	0.258	0.137	0.605	0.275	0.127	0.597
3.58	0.336	0.128	0.536	0.308	0.144	0.548
4.77	0.389	0.123	0.488	0.371	0.133	0.496
5.96	0.448	0.105	0.447	0.392	0.136	0.472
7.16	0.512	0.099	0.389	0.429	0.145	0.426
8.35	0.550	0.095	0.356	0.453	0.143	0.394
9.54	0.580	0.096	0.324	0.509	0.136	0.355
10.74	0.609	0.103	0.287	0.560	0.131	0.309
11.93	0.635	0.102	0.264	0.604	0.119	0.277
G86H13 IN UG = 8.31						
2.39	0.237	0.167	0.597	0.248	0.160	0.592
3.58	0.321	0.156	0.522	0.305	0.166	0.530
4.77	0.376	0.149	0.475	0.350	0.163	0.487
5.96	0.435	0.118	0.447	0.355	0.162	0.483
7.16	0.476	0.125	0.399	0.420	0.157	0.423
8.35	0.516	0.116	0.368	0.433	0.162	0.405
9.54	0.561	0.113	0.326	0.487	0.154	0.359
10.74	0.588	0.124	0.288	0.527	0.158	0.315
11.93	0.600	0.146	0.253	0.568	0.164	0.268

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G87I13 IN			UG = 10.54			
2.39	0.224	0.179	0.598	0.263	0.157	0.580
3.58	0.315	0.176	0.509	0.297	0.186	0.517
4.77	0.376	0.154	0.470	0.354	0.167	0.480
5.96	0.427	0.139	0.434	0.371	0.170	0.459
7.16	0.481	0.126	0.393	0.416	0.162	0.422
8.35	0.521	0.135	0.344	0.449	0.175	0.376
9.54	0.553	0.129	0.318	0.477	0.171	0.352
10.74	0.577	0.142	0.281	0.484	0.194	0.322
11.93	0.586	0.159	0.255	0.564	0.171	0.265
G88M13 IN			UG = 17.26			
1.19	0.118	0.266	0.616	0.123	0.263	0.614
2.39	0.219	0.255	0.526	0.239	0.244	0.517
3.58	0.308	0.221	0.471	0.289	0.232	0.479
4.77	0.380	0.215	0.404	0.323	0.247	0.430
5.96	0.429	0.204	0.367	0.378	0.232	0.390
7.16	0.458	0.190	0.352	0.392	0.227	0.381
8.35	0.474	0.208	0.318	0.435	0.230	0.335
9.54	0.517	0.200	0.282	0.513	0.203	0.284
10.74	0.530	0.201	0.269	0.546	0.192	0.262
11.93	0.542	0.204	0.254	0.557	0.196	0.248
G67D13 AB			UG = 1.78			
4.77	0.427	0.037	0.536	0.384	0.061	0.555
7.16	0.566	0.004	0.431	0.452	0.067	0.481
9.54	0.658	-0.009	0.352	0.529	0.062	0.409
11.93	0.800	-0.046	0.246	0.608	0.061	0.331
G68K13 AB			UG = 13.95			
2.39	0.220	0.194	0.586	0.255	0.175	0.571
3.58	0.334	0.164	0.501	0.321	0.172	0.507
4.77	0.403	0.128	0.469	0.332	0.168	0.500
5.96	0.457	0.134	0.409	0.355	0.191	0.454
7.16	0.493	0.121	0.386	0.395	0.176	0.429
8.35	0.524	0.132	0.344	0.426	0.187	0.387
9.54	0.554	0.144	0.302	0.469	0.191	0.340
10.74	0.715	0.059	0.226	0.491	0.184	0.325
11.93	0.689	0.100	0.212	0.582	0.159	0.259
G72A13 AB			UG = 0.0			
5.96	0.544	-0.045	0.502	0.462	0.002	0.536
7.16	0.725	-0.120	0.395	0.510	-0.005	0.494
8.35	0.645	-0.056	0.411	0.544	-0.003	0.459
9.54	0.873	-0.166	0.293	0.575	-0.002	0.427
10.74	0.794	-0.105	0.311	0.605	0.0	0.396
11.93	0.921	-0.161	0.240	0.631	0.014	0.354
G74G13 AB			UG = 7.11			
3.58	0.407	0.075	0.518	0.326	0.120	0.554
4.77	0.512	0.047	0.441	0.353	0.136	0.511
5.96	0.458	0.090	0.451	0.381	0.133	0.485

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G75G13 AB			UG = 7.07			
7.16	0.587	0.031	0.383	0.416	0.126	0.458
8.35	0.540	0.089	0.372	0.451	0.138	0.411
9.54	0.580	0.095	0.324	0.482	0.151	0.368
G76C13 AB			UG = 0.95			
3.58	0.405	0.017	0.579	0.333	0.057	0.611
4.77	0.538	-0.031	0.493	0.380	0.057	0.563
5.96	0.602	-0.044	0.442	0.437	0.047	0.515
7.16	0.554	-0.003	0.449	0.479	0.039	0.482
8.35	0.620	-0.011	0.391	0.520	0.044	0.435
9.54	0.668	-0.028	0.359	0.549	0.038	0.412
10.74	0.683	-0.015	0.332	0.593	0.035	0.371
G77J13 AB			UG = 12.47			
2.39	0.224	0.184	0.592	0.235	0.178	0.587
3.58	0.317	0.175	0.508	0.304	0.182	0.514
4.77	0.381	0.145	0.474	0.334	0.171	0.494
5.96	0.439	0.120	0.442	0.365	0.161	0.474
7.16	0.481	0.121	0.398	0.397	0.168	0.435
8.35	0.519	0.130	0.351	0.442	0.172	0.385
9.54	0.560	0.131	0.309	0.478	0.177	0.346
10.74	0.573	0.134	0.293	0.492	0.179	0.329
11.93	0.590	0.144	0.266	0.587	0.146	0.268
G79L13 AB			UG = 15.55			
2.39	0.216	0.206	0.578	0.251	0.187	0.563
3.58	0.304	0.190	0.506	0.311	0.186	0.503
4.77	0.371	0.166	0.463	0.340	0.183	0.477
5.96	0.419	0.162	0.418	0.379	0.185	0.436
7.16	0.463	0.168	0.369	0.402	0.202	0.396
8.35	0.504	0.151	0.345	0.438	0.188	0.374
9.54	0.516	0.166	0.318	0.456	0.200	0.344
10.74	0.534	0.165	0.300	0.473	0.200	0.328
11.93	0.562	0.175	0.264	0.592	0.158	0.250
G80B13 AB			UG = 0.44			
4.77	0.459	-0.008	0.550	0.404	0.022	0.574
5.96	0.510	-0.006	0.496	0.457	0.023	0.519
7.16	0.568	-0.025	0.457	0.497	0.015	0.488
8.35	0.606	-0.024	0.418	0.534	0.016	0.450
9.54	0.655	-0.034	0.379	0.569	0.014	0.417
10.74	0.693	-0.033	0.340	0.600	0.019	0.381
11.93	0.722	-0.041	0.319	0.630	0.010	0.360
G82E13 AB			UG = 3.58			
2.39	0.243	0.134	0.624	0.243	0.134	0.624
3.58	0.361	0.086	0.552	0.313	0.113	0.574
4.77	0.412	0.090	0.498	0.359	0.120	0.521
5.96	0.470	0.071	0.459	0.392	0.114	0.493
7.16	0.517	0.060	0.423	0.409	0.120	0.471
8.35	0.559	0.062	0.379	0.465	0.114	0.421
9.54	0.592	0.070	0.338	0.521	0.110	0.370
10.74	0.623	0.077	0.300	0.554	0.115	0.331

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G82E13 AB			UG = 3.58			
11.93	0.646	0.072	0.282	0.584	0.106	0.310
G85F13 AB			UG = 5.31			
2.39	0.258	0.131	0.610	0.236	0.144	0.620
3.58	0.336	0.115	0.549	0.311	0.129	0.560
4.77	0.389	0.112	0.500	0.349	0.133	0.517
5.96	0.448	0.095	0.457	0.383	0.131	0.486
7.16	0.512	0.087	0.400	0.441	0.127	0.432
8.35	0.550	0.080	0.370	0.453	0.134	0.413
9.54	0.580	0.089	0.331	0.491	0.139	0.370
10.74	0.609	0.099	0.291	0.543	0.136	0.321
11.93	0.635	0.100	0.265	0.606	0.116	0.277
G86H13 AB			UG = 8.31			
2.39	0.237	0.157	0.607	0.252	0.148	0.600
3.58	0.321	0.141	0.538	0.295	0.156	0.549
4.77	0.376	0.131	0.493	0.343	0.149	0.508
5.96	0.435	0.111	0.454	0.371	0.146	0.482
7.16	0.476	0.118	0.406	0.422	0.147	0.430
8.35	0.516	0.104	0.380	0.446	0.143	0.411
9.54	0.561	0.110	0.330	0.476	0.157	0.367
10.74	0.588	0.121	0.292	0.510	0.164	0.326
11.93	0.600	0.140	0.259	0.581	0.151	0.268
G87I13 AB			UG = 10.54			
2.39	0.224	0.179	0.597	0.245	0.167	0.588
3.58	0.315	0.147	0.538	0.299	0.156	0.545
4.77	0.376	0.143	0.481	0.334	0.166	0.500
5.96	0.427	0.113	0.460	0.370	0.145	0.485
7.16	0.481	0.119	0.400	0.406	0.160	0.433
8.35	0.521	0.126	0.354	0.446	0.167	0.387
9.54	0.553	0.115	0.332	0.473	0.159	0.367
10.74	0.577	0.132	0.291	0.497	0.176	0.327
11.93	0.586	0.150	0.264	0.583	0.152	0.265
G88M13 AB			UG = 17.26			
1.19	0.118	0.278	0.604	0.081	0.299	0.620
2.39	0.219	0.248	0.532	0.240	0.237	0.523
3.58	0.308	0.202	0.490	0.305	0.204	0.492
4.77	0.380	0.186	0.434	0.338	0.209	0.453
5.96	0.429	0.199	0.373	0.284	0.279	0.437
7.16	0.458	0.180	0.362	0.393	0.216	0.391
8.35	0.474	0.195	0.330	0.419	0.226	0.355
9.54	0.517	0.191	0.292	0.534	0.181	0.284
10.74	0.530	0.191	0.279	0.569	0.169	0.262
11.93	0.542	0.191	0.267	0.586	0.167	0.248
G13A16 IN			UG = 0.0			
5.14	0.468	-0.027	0.559	0.420	0.024	0.556
5.87	0.503	-0.023	0.520	0.462	0.013	0.525
6.60	0.544	-0.033	0.488	0.486	0.014	0.500
7.34	0.582	-0.040	0.458	0.510	0.012	0.479

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G14D16 IN			UG = 0.44			
4.40	0.442	-0.005	0.563	0.415	0.010	0.575
5.14	0.478	-0.017	0.539	0.443	0.002	0.555
5.87	0.519	-0.023	0.504	0.472	0.003	0.525
6.60	0.564	-0.034	0.470	0.492	0.006	0.502
7.34	0.617	-0.047	0.429	0.516	0.010	0.474
G15E16 IN			UG = 0.88			
4.40	0.425	0.012	0.563	0.410	0.020	0.570
5.14	0.479	-0.004	0.526	0.438	0.019	0.544
5.87	0.499	0.003	0.498	0.457	0.026	0.517
6.60	0.533	-0.001	0.468	0.486	0.025	0.489
7.34	0.561	-0.005	0.445	0.509	0.023	0.467
G16F16 IN			UG = 1.32			
4.40	0.430	0.013	0.557	0.396	0.031	0.572
5.14	0.477	0.004	0.519	0.436	0.027	0.537
5.87	0.506	0.008	0.486	0.450	0.034	0.506
6.60	0.519	0.015	0.466	0.488	0.032	0.480
7.34	0.577	-0.004	0.427	0.509	0.034	0.457
G17G16 IN			UG = 1.74			
4.40	0.422	0.030	0.548	0.405	0.039	0.556
5.14	0.469	0.021	0.511	0.431	0.042	0.527
5.87	0.500	0.020	0.480	0.454	0.040	0.496
6.60	0.500	0.041	0.459	0.484	0.050	0.466
7.34	0.527	0.044	0.429	0.498	0.060	0.442
G18H16 IN			UG = 2.18			
3.67	0.387	0.036	0.577	0.361	0.050	0.588
4.40	0.424	0.034	0.542	0.400	0.047	0.553
5.14	0.455	0.032	0.513	0.424	0.049	0.527
5.87	0.471	0.045	0.483	0.448	0.058	0.494
6.60	0.480	0.060	0.459	0.458	0.067	0.465
7.34	0.546	0.045	0.409	0.485	0.079	0.436
G19I16 IN			UG = 2.61			
3.67	0.371	0.055	0.574	0.346	0.069	0.585
4.40	0.416	0.042	0.542	0.395	0.053	0.552
5.14	0.442	0.046	0.512	0.411	0.063	0.526
5.87	0.482	0.046	0.472	0.442	0.068	0.490
6.60	0.465	0.077	0.458	0.464	0.077	0.458
7.34	0.544	0.050	0.406	0.479	0.086	0.435
G20J16 IN			UG = 3.03			
3.67	0.367	0.057	0.576	0.337	0.074	0.589
4.40	0.408	0.056	0.535	0.382	0.071	0.547
5.14	0.446	0.049	0.505	0.423	0.062	0.515
5.87	0.481	0.053	0.467	0.432	0.080	0.488
6.60	0.478	0.078	0.444	0.455	0.086	0.450
7.34	0.507	0.077	0.416	0.471	0.097	0.432
G21K16 IN			UG = 3.45			
3.67	0.392	0.066	0.542	0.342	0.094	0.564
4.40	0.416	0.056	0.528	0.400	0.065	0.535
5.14	0.445	0.054	0.501	0.406	0.075	0.518

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G21K16 IN			UG = 3.45			
5.87	0.469	0.068	0.464	0.429	0.090	0.481
6.60	0.483	0.084	0.432	0.452	0.102	0.446
7.34	0.492	0.099	0.408	0.461	0.117	0.422
G22L16 IN			UG = 3.86			
3.67	0.350	0.087	0.563	0.338	0.093	0.569
4.40	0.383	0.076	0.540	0.373	0.082	0.545
5.14	0.419	0.072	0.509	0.403	0.081	0.517
5.87	0.431	0.092	0.476	0.435	0.090	0.474
6.60	0.457	0.099	0.444	0.459	0.098	0.443
7.34	0.471	0.113	0.416	0.458	0.120	0.422
G23M16 IN			UG = 4.26			
3.67	0.361	0.080	0.559	0.320	0.103	0.577
4.40	0.392	0.073	0.535	0.371	0.084	0.544
5.14	0.423	0.069	0.508	0.403	0.080	0.517
5.87	0.427	0.097	0.475	0.421	0.101	0.478
6.60	0.449	0.110	0.442	0.452	0.108	0.440
7.34	0.472	0.116	0.413	0.452	0.127	0.421
G13A16 AB			UG = 0.0			
5.14	0.468	-0.022	0.554	0.428	0.013	0.559
5.87	0.503	-0.024	0.521	0.460	0.009	0.531
6.60	0.544	-0.035	0.491	0.482	0.009	0.509
7.34	0.582	-0.041	0.459	0.508	0.007	0.485
G14D16 AB			UG = 0.44			
4.40	0.442	-0.005	0.563	0.397	0.020	0.583
5.14	0.478	-0.018	0.540	0.433	0.007	0.560
5.87	0.519	-0.020	0.501	0.458	0.014	0.528
6.60	0.564	-0.031	0.467	0.483	0.014	0.503
7.34	0.617	-0.047	0.430	0.501	0.018	0.482
G15E16 AB			UG = 0.88			
4.40	0.425	0.007	0.568	0.389	0.027	0.584
5.14	0.479	-0.008	0.529	0.428	0.021	0.552
5.87	0.499	0.003	0.498	0.443	0.034	0.523
6.60	0.533	-0.001	0.468	0.475	0.031	0.494
7.34	0.561	-0.007	0.446	0.497	0.029	0.474
G16F16 AB			UG = 1.32			
4.40	0.430	0.015	0.555	0.381	0.042	0.577
5.14	0.477	0.0	0.523	0.421	0.032	0.547
5.87	0.506	0.006	0.488	0.450	0.038	0.513
6.60	0.519	0.014	0.467	0.477	0.038	0.485
7.34	0.577	-0.004	0.427	0.498	0.040	0.462
G17G16 AB			UG = 1.74			
4.40	0.422	0.029	0.548	0.395	0.045	0.561
5.14	0.469	0.016	0.516	0.425	0.040	0.535
5.87	0.500	0.018	0.482	0.444	0.049	0.507
6.60	0.500	0.037	0.463	0.477	0.050	0.473
7.34	0.527	0.042	0.431	0.492	0.061	0.447

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
G18H16 AB			UG = 2.18			
3.67	0.387	0.033	0.580	0.339	0.059	0.601
4.40	0.424	0.034	0.542	0.375	0.061	0.563
5.14	0.455	0.029	0.516	0.414	0.052	0.534
5.87	0.471	0.041	0.488	0.440	0.058	0.502
6.60	0.480	0.056	0.464	0.452	0.066	0.472
7.34	0.546	0.042	0.412	0.476	0.081	0.443
G19I16 AB			UG = 2.61			
3.67	0.371	0.049	0.580	0.333	0.070	0.597
4.40	0.416	0.039	0.545	0.385	0.056	0.559
5.14	0.442	0.042	0.517	0.408	0.060	0.531
5.87	0.482	0.039	0.479	0.436	0.065	0.499
6.60	0.465	0.073	0.462	0.454	0.079	0.467
7.34	0.544	0.043	0.413	0.476	0.081	0.443
G20J16 AB			UG = 3.03			
3.67	0.367	0.058	0.575	0.316	0.086	0.598
4.40	0.408	0.051	0.541	0.366	0.074	0.559
5.14	0.446	0.047	0.508	0.398	0.073	0.529
5.87	0.481	0.047	0.472	0.430	0.076	0.495
6.60	0.478	0.075	0.447	0.458	0.086	0.456
7.34	0.507	0.072	0.422	0.471	0.092	0.437
G21K16 AB			UG = 3.45			
3.67	0.392	0.047	0.562	0.337	0.077	0.586
4.40	0.416	0.052	0.531	0.373	0.077	0.551
5.14	0.445	0.052	0.503	0.400	0.077	0.523
5.87	0.469	0.063	0.469	0.421	0.089	0.490
6.60	0.483	0.076	0.441	0.463	0.087	0.450
7.34	0.492	0.095	0.413	0.459	0.113	0.428
G22L16 AB			UG = 3.86			
3.67	0.350	0.081	0.569	0.327	0.093	0.579
4.40	0.383	0.073	0.544	0.369	0.081	0.551
5.14	0.419	0.066	0.515	0.403	0.075	0.522
5.87	0.431	0.089	0.480	0.419	0.096	0.485
6.60	0.457	0.092	0.451	0.456	0.093	0.452
7.34	0.471	0.104	0.425	0.470	0.105	0.425
G23M16 AB			UG = 4.26			
3.67	0.361	0.081	0.559	0.319	0.104	0.577
4.40	0.392	0.073	0.535	0.356	0.093	0.551
5.14	0.423	0.064	0.513	0.391	0.082	0.527
5.87	0.427	0.095	0.478	0.409	0.105	0.486
6.60	0.449	0.103	0.448	0.447	0.104	0.449
7.34	0.472	0.114	0.415	0.439	0.132	0.429
P12A13 IN			UG = 0.0			
2.39	0.569	-0.014	0.445	0.478	0.014	0.509
3.58	0.677	-0.014	0.337	0.588	0.021	0.391
4.77	0.766	-0.021	0.255	0.531	0.023	0.346
5.96	0.836	-0.021	0.185	0.699	0.033	0.268
7.16	0.911	-0.024	0.113	0.755	0.038	0.206
8.35	0.944	-0.023	0.078	0.797	0.044	0.160

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
P13B13 IN			UG = 0.44			
2.39	0.542	0.014	0.445	0.471	0.025	0.504
3.58	0.751	-0.008	0.257	0.598	0.015	0.386
4.77	0.808	-0.007	0.199	0.706	0.008	0.286
5.96	0.889	-0.010	0.121	0.767	0.008	0.225
7.16	0.929	-0.008	0.079	0.811	0.010	0.178
P14C13 IN			UG = 0.93			
1.19	0.420	0.061	0.519	0.395	0.065	0.540
2.39	0.558	0.037	0.405	0.526	0.042	0.432
3.58	0.712	0.016	0.272	0.600	0.033	0.367
4.77	0.792	0.018	0.190	0.654	0.039	0.307
5.96	0.870	0.017	0.113	0.799	0.028	0.173
P15D13 IN			UG = 1.77			
1.19	0.423	0.084	0.493	0.441	0.081	0.478
2.39	0.581	0.061	0.359	0.592	0.059	0.349
2.98	0.714	0.045	0.241	0.624	0.059	0.317
3.58	0.743	0.053	0.203	0.694	0.061	0.245
4.77	0.815	0.035	0.150	0.794	0.038	0.168
P16E13 IN			UG = 3.51			
1.19	0.549	0.088	0.363	0.516	0.093	0.391
2.39	0.720	0.075	0.205	0.621	0.090	0.289
2.98	0.729	0.083	0.188	0.667	0.093	0.240
3.58	0.745	0.085	0.170	0.726	0.088	0.186
4.77	0.786	0.084	0.130	0.767	0.087	0.146
P17F13 IN			UG = 5.27			
1.19	0.668	0.122	0.211	0.583	0.135	0.282
2.39	0.696	0.117	0.187	0.617	0.129	0.254
2.98	0.701	0.116	0.184	0.698	0.116	0.186
3.58	0.720	0.112	0.168	0.720	0.112	0.168
4.17	0.734	0.119	0.148	0.743	0.117	0.140
4.77	0.744	0.123	0.133	0.752	0.122	0.127
P22G13 IN			UG = 7.09			
1.19	0.676	0.122	0.202	0.542	0.142	0.316
1.79	0.656	0.137	0.207	0.613	0.143	0.244
2.39	0.684	0.136	0.180	0.650	0.141	0.209
2.98	0.686	0.138	0.176	0.669	0.141	0.190
3.58	0.701	0.132	0.167	0.678	0.135	0.186
4.77	0.732	0.143	0.124	0.730	0.144	0.127
P23H13 IN			UG = 8.86			
1.19	0.619	0.163	0.218	0.556	0.173	0.271
1.79	0.659	0.172	0.169	0.614	0.179	0.206
2.39	0.665	0.167	0.168	0.631	0.172	0.197
2.98	0.668	0.170	0.162	0.662	0.171	0.168
3.58	0.685	0.154	0.162	0.685	0.154	0.161
4.77	0.716	0.172	0.111	0.698	0.175	0.127
P24I13 IN			UG = 10.38			
1.19	0.610	0.195	0.195	0.593	0.198	0.209
1.79	0.644	0.186	0.170	0.612	0.191	0.197
2.39	0.665	0.182	0.153	0.665	0.182	0.153

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
P24I13 IN			UG = 10.88			
2.98	0.645	0.184	0.171	0.681	0.179	0.140
3.58	0.660	0.181	0.159	0.699	0.175	0.127
4.77	0.695	0.184	0.121	0.688	0.185	0.127
P25J13 IN			UG = 12.38			
1.19	0.626	0.200	0.174	0.594	0.205	0.202
1.79	0.637	0.205	0.158	0.618	0.208	0.175
2.39	0.630	0.198	0.172	0.641	0.196	0.163
3.58	0.647	0.196	0.157	0.684	0.190	0.127
4.77	0.676	0.200	0.124	0.673	0.201	0.127
P12A13 AB			UG = 0.0			
2.39	0.569	-0.009	0.440	0.509	-0.015	0.506
3.58	0.677	-0.012	0.335	0.601	0.007	0.393
4.77	0.766	-0.019	0.253	0.644	0.006	0.350
5.96	0.836	-0.021	0.185	0.699	0.033	0.268
7.16	0.911	-0.022	0.111	0.757	0.027	0.206
8.35	0.944	-0.022	0.078	0.801	0.040	0.160
P13B13 AB			UG = 0.44			
2.39	0.542	0.009	0.449	0.453	0.023	0.524
3.58	0.751	-0.017	0.267	0.582	0.008	0.409
4.77	0.808	-0.008	0.200	0.715	0.007	0.278
5.96	0.889	-0.012	0.123	0.754	0.007	0.229
7.16	0.929	-0.011	0.082	0.815	0.007	0.178
P14C13 AB			UG = 0.93			
1.19	0.420	0.056	0.524	0.337	0.069	0.594
2.39	0.558	0.034	0.408	0.477	0.046	0.477
3.58	0.712	0.013	0.275	0.586	0.032	0.382
4.77	0.792	0.019	0.189	0.696	0.033	0.271
5.96	0.870	0.013	0.118	0.804	0.023	0.173
P15D13 AB			UG = 1.77			
1.19	0.423	0.074	0.503	0.403	0.077	0.520
2.39	0.581	0.062	0.357	0.490	0.076	0.433
2.98	0.714	0.049	0.238	0.611	0.064	0.324
3.58	0.743	0.044	0.212	0.717	0.048	0.235
4.77	0.815	0.035	0.150	0.794	0.038	0.168
P16E13 AB			UG = 3.51			
1.19	0.549	0.095	0.356	0.560	0.093	0.347
2.39	0.720	0.067	0.213	0.632	0.080	0.288
2.98	0.729	0.075	0.197	0.465	0.115	0.420
3.58	0.745	0.087	0.168	0.724	0.090	0.186
4.77	0.786	0.081	0.133	0.771	0.083	0.146
P17F13 AB			UG = 5.27			
1.19	0.668	0.121	0.212	0.595	0.132	0.273
2.39	0.696	0.114	0.191	0.648	0.121	0.231
2.98	0.701	0.111	0.188	0.703	0.111	0.186
3.58	0.720	0.114	0.166	0.718	0.115	0.168
4.17	0.734	0.116	0.150	0.745	0.115	0.140
4.77	0.744	0.117	0.139	0.759	0.115	0.127

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
P22G13 AB			UG = 7.09			
1.19	0.676	0.114	0.210	0.557	0.133	0.311
1.79	0.656	0.139	0.205	0.587	0.150	0.263
2.39	0.684	0.133	0.182	0.653	0.138	0.209
2.98	0.686	0.134	0.180	0.674	0.136	0.190
3.58	0.701	0.137	0.162	0.673	0.141	0.186
4.77	0.732	0.139	0.128	0.735	0.139	0.127
P23H13 AB			UG = 8.86			
1.19	0.619	0.157	0.224	0.557	0.166	0.277
1.79	0.659	0.165	0.176	0.623	0.170	0.206
2.39	0.665	0.159	0.176	0.641	0.162	0.197
2.98	0.668	0.159	0.172	0.674	0.159	0.168
3.58	0.685	0.162	0.154	0.676	0.163	0.161
4.77	0.716	0.161	0.122	0.711	0.162	0.127
P24I13 AB			UG = 10.38			
1.19	0.610	0.184	0.206	0.606	0.185	0.209
1.79	0.644	0.166	0.190	0.636	0.167	0.197
2.39	0.665	0.172	0.163	0.677	0.170	0.153
2.98	0.645	0.180	0.175	0.686	0.174	0.140
3.58	0.660	0.174	0.166	0.706	0.167	0.127
4.77	0.695	0.189	0.117	0.683	0.191	0.127
P25J13 AB			UG = 12.38			
1.19	0.626	0.197	0.177	0.597	0.202	0.202
1.79	0.637	0.196	0.167	0.628	0.197	0.175
2.39	0.630	0.194	0.176	0.645	0.192	0.163
3.58	0.647	0.187	0.166	0.694	0.180	0.127
4.77	0.676	0.200	0.125	0.673	0.200	0.127
P13A16 IN			UG = 0.0			
2.20	0.531	-0.013	0.482	0.447	0.021	0.532
2.93	0.617	-0.005	0.388	0.585	-0.014	0.429
3.67	0.740	-0.021	0.280	0.606	-0.002	0.396
4.40	0.750	-0.012	0.263	0.668	-0.024	0.355
5.14	0.773	0.001	0.226	0.779	-0.062	0.283
5.87	0.789	-0.002	0.213	0.779	-0.035	0.256
P14B16 IN			UG = 0.11			
2.20	0.504	-0.009	0.505	0.479	-0.005	0.526
2.93	0.622	-0.011	0.389	0.565	-0.002	0.437
3.67	0.713	-0.014	0.301	0.628	-0.001	0.373
4.40	0.760	-0.013	0.253	0.655	0.003	0.342
5.14	0.810	-0.014	0.205	0.691	0.004	0.305
5.87	0.847	-0.014	0.168	0.738	0.002	0.259
6.60	0.867	-0.009	0.142	0.771	0.006	0.223
7.34	0.892	-0.009	0.118	0.801	0.004	0.195
P15C16 IN			UG = 0.24			
2.20	0.523	-0.012	0.488	0.439	0.001	0.560
2.93	0.619	-0.010	0.392	0.496	0.008	0.495
3.67	0.772	-0.022	0.250	0.613	0.002	0.385
4.40	0.722	-0.003	0.281	0.653	0.008	0.340
5.14	0.814	-0.009	0.194	0.714	0.007	0.279

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
P15C16 IN			UG = 0.24			
5.87	0.813	0.0	0.187	0.738	0.011	0.250
6.60	0.834	0.002	0.164	0.775	0.011	0.214
7.34	0.861	-0.003	0.142	0.788	0.008	0.204
P16D16 IN			UG = 0.44			
2.20	0.503	0.002	0.495	0.411	0.016	0.573
2.93	0.589	-0.001	0.412	0.504	0.012	0.484
3.67	0.655	0.007	0.338	0.541	0.025	0.434
4.40	0.719	0.009	0.272	0.686	0.014	0.300
5.14	0.810	0.002	0.188	0.703	0.018	0.279
5.87	0.828	0.004	0.168	0.747	0.016	0.237
6.60	0.841	0.007	0.153	0.786	0.015	0.199
7.34	0.861	0.010	0.129	0.809	0.018	0.173
P17E16 IN			UG = 0.88			
2.20	0.604	0.024	0.372	0.494	0.041	0.466
2.93	0.789	0.018	0.194	0.622	0.043	0.335
3.67	0.810	0.021	0.169	0.684	0.040	0.275
4.40	0.846	0.021	0.133	0.716	0.041	0.243
5.14	0.819	0.033	0.149	0.748	0.044	0.208
5.87	0.812	0.030	0.158	0.755	0.039	0.206
6.60	0.835	0.029	0.135	0.780	0.038	0.182
7.34	0.850	0.033	0.117	0.784	0.043	0.173
P18F16 IN			UG = 1.33			
1.47	0.470	0.050	0.481	0.441	0.054	0.505
2.20	0.814	0.012	0.175	0.584	0.047	0.369
2.93	0.866	0.014	0.120	0.705	0.039	0.256
3.67	0.843	0.022	0.135	0.747	0.037	0.216
4.40	0.824	0.038	0.137	0.675	0.061	0.264
5.14	0.815	0.047	0.137	0.774	0.054	0.173
5.87	0.826	0.045	0.129	0.795	0.050	0.154
6.60	0.831	0.047	0.123	0.801	0.051	0.148
7.34	0.836	0.052	0.112	0.794	0.059	0.148
P19G16 IN			UG = 1.77			
1.47	0.533	0.067	0.400	0.575	0.061	0.364
2.20	0.800	0.027	0.173	0.614	0.056	0.330
2.93	0.802	0.038	0.161	0.716	0.051	0.234
3.67	0.820	0.045	0.136	0.727	0.059	0.214
4.40	0.810	0.056	0.135	0.754	0.064	0.182
5.14	0.819	0.058	0.122	0.773	0.065	0.162
5.87	0.789	0.072	0.139	0.779	0.073	0.148
6.60	0.792	0.068	0.140	0.792	0.068	0.140
7.34	0.813	0.078	0.108	0.783	0.083	0.134
P20H16 IN			UG = 2.21			
0.73	0.460	0.093	0.446	0.592	0.073	0.335
1.47	0.799	0.036	0.165	0.630	0.062	0.308
2.20	0.807	0.050	0.142	0.701	0.067	0.233
2.93	0.810	0.052	0.138	0.724	0.065	0.211
3.67	0.786	0.059	0.155	0.754	0.064	0.182
4.40	0.781	0.072	0.147	0.761	0.075	0.164

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
		P20H16	IN	UG = 2.21		
5.14	0.786	0.076	0.137	0.783	0.077	0.140
5.87	0.783	0.082	0.135	0.786	0.082	0.133
		P21I16	IN	UG = 2.65		
0.73	0.793	0.050	0.157	0.589	0.081	0.330
1.47	0.813	0.054	0.133	0.647	0.080	0.273
2.20	0.788	0.068	0.144	0.587	0.098	0.315
2.93	0.799	0.066	0.135	0.606	0.095	0.298
3.67	0.796	0.070	0.134	0.758	0.076	0.166
4.40	0.776	0.079	0.146	0.781	0.078	0.141
		P22J16	IN	UG = 3.09		
0.73	0.808	0.050	0.143	0.592	0.083	0.325
1.47	0.809	0.060	0.130	0.618	0.090	0.292
2.20	0.803	0.073	0.124	0.713	0.086	0.200
2.93	0.788	0.073	0.139	0.740	0.080	0.180
3.67	0.787	0.079	0.134	0.760	0.083	0.156
4.40	0.776	0.087	0.138	0.778	0.086	0.136
		P23K16	IN	UG = 3.51		
0.73	0.812	0.060	0.128	0.661	0.083	0.256
1.47	0.787	0.073	0.140	0.680	0.089	0.231
2.20	0.783	0.081	0.136	0.702	0.093	0.204
2.93	0.761	0.084	0.155	0.743	0.087	0.170
3.67	0.776	0.081	0.143	0.771	0.082	0.148
		P24L16	IN	UG = 3.93		
0.73	0.790	0.080	0.130	0.647	0.102	0.251
1.47	0.779	0.084	0.138	0.638	0.106	0.257
2.20	0.800	0.084	0.116	0.686	0.101	0.212
2.93	0.788	0.087	0.125	0.739	0.095	0.166
3.67	0.780	0.094	0.126	0.764	0.096	0.140
		P25M16	IN	UG = 4.34		
0.73	0.834	0.082	0.084	0.431	0.144	0.425
1.47	0.820	0.092	0.088	0.678	0.114	0.208
2.20	0.790	0.094	0.116	0.729	0.103	0.168
2.93	0.782	0.097	0.121	0.747	0.102	0.151
		P13A16	AB	UG = 0.0		
2.20	0.531	-0.013	0.482	0.447	0.021	0.532
2.93	0.617	-0.005	0.388	0.585	-0.029	0.443
3.67	0.740	-0.021	0.280	0.606	-0.006	0.400
4.40	0.750	-0.016	0.266	0.648	-0.009	0.361
5.14	0.773	-0.004	0.232	0.744	-0.046	0.302
5.87	0.789	0.002	0.209	0.800	-0.038	0.239
		P14B16	AB	UG = 0.11		
2.20	0.504	-0.003	0.499	0.469	0.002	0.529
2.93	0.622	-0.011	0.389	0.511	0.006	0.483
3.67	0.713	-0.020	0.307	0.603	-0.003	0.400
4.40	0.760	-0.013	0.253	0.655	0.003	0.342
5.14	0.810	-0.013	0.203	0.688	0.006	0.307
5.87	0.847	-0.013	0.167	0.734	0.004	0.262
6.60	0.867	-0.011	0.144	0.752	0.007	0.241

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
P14B16 AB			UG = 0.11			
7.34	0.892	-0.008	0.117	0.795	0.006	0.198
P15C16 AB			UG = 0.24			
2.20	0.523	-0.001	0.478	0.449	0.010	0.541
2.93	0.619	-0.016	0.397	0.525	-0.001	0.477
3.67	0.772	-0.015	0.243	0.597	0.012	0.391
4.40	0.722	-0.031	0.310	0.634	-0.018	0.384
5.14	0.814	-0.006	0.192	0.695	0.012	0.293
5.87	0.813	0.001	0.185	0.726	0.015	0.259
6.60	0.834	0.004	0.163	0.762	0.015	0.224
7.34	0.861	0.0	0.139	0.787	0.011	0.201
P16D16 AB			UG = 0.44			
2.20	0.503	0.002	0.495	0.393	0.019	0.588
2.93	0.589	-0.001	0.412	0.492	0.014	0.493
3.67	0.655	0.010	0.334	0.582	0.022	0.396
4.40	0.719	0.006	0.275	0.672	0.013	0.315
5.14	0.810	-0.002	0.192	0.709	0.013	0.277
5.87	0.828	0.002	0.170	0.741	0.016	0.243
6.60	0.841	0.008	0.152	0.781	0.017	0.202
7.34	0.861	0.008	0.131	0.789	0.019	0.192
P17E16 AB			UG = 0.88			
2.20	0.604	0.018	0.377	0.486	0.037	0.478
2.93	0.789	0.019	0.193	0.667	0.037	0.296
3.67	0.810	0.018	0.172	0.691	0.037	0.273
4.40	0.846	0.011	0.143	0.723	0.030	0.247
5.14	0.819	0.027	0.154	0.642	0.054	0.304
5.87	0.812	0.030	0.158	0.768	0.037	0.195
6.60	0.835	0.028	0.137	0.782	0.036	0.182
7.34	0.850	0.034	0.116	0.783	0.044	0.173
P18F16 AB			UG = 1.33			
1.47	0.470	0.050	0.481	0.420	0.057	0.523
2.20	0.814	0.028	0.159	0.617	0.058	0.325
2.93	0.866	0.008	0.126	0.704	0.033	0.263
3.67	0.843	0.027	0.130	0.700	0.049	0.251
4.40	0.824	0.034	0.142	0.740	0.047	0.214
5.14	0.815	0.046	0.139	0.775	0.052	0.173
5.87	0.826	0.046	0.128	0.795	0.051	0.154
6.60	0.831	0.045	0.124	0.803	0.049	0.148
7.34	0.836	0.052	0.112	0.794	0.059	0.148
P19G16 AB			UG = 1.77			
1.47	0.533	0.071	0.397	0.559	0.067	0.374
2.20	0.800	0.035	0.165	0.656	0.057	0.287
2.93	0.802	0.039	0.160	0.703	0.054	0.243
3.67	0.820	0.041	0.140	0.716	0.057	0.227
4.40	0.810	0.056	0.134	0.753	0.065	0.182
5.14	0.819	0.060	0.121	0.770	0.068	0.162
5.87	0.789	0.070	0.141	0.782	0.071	0.148
6.60	0.792	0.073	0.135	0.786	0.074	0.140
7.34	0.813	0.074	0.113	0.788	0.077	0.134

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
P20H16 AB			UG = 2.21			
0.73	0.460	0.088	0.452	0.531	0.077	0.392
1.47	0.799	0.041	0.160	0.630	0.067	0.302
2.20	0.807	0.043	0.150	0.712	0.057	0.231
2.93	0.810	0.049	0.141	0.726	0.062	0.212
3.67	0.786	0.061	0.154	0.752	0.066	0.182
4.40	0.781	0.071	0.148	0.762	0.074	0.164
5.14	0.786	0.079	0.135	0.781	0.080	0.140
5.87	0.783	0.085	0.132	0.782	0.085	0.133
P21I16 AB			UG = 2.65			
0.73	0.793	0.034	0.173	0.558	0.070	0.373
1.47	0.813	0.048	0.139	0.667	0.070	0.262
2.20	0.788	0.063	0.149	0.722	0.073	0.204
2.93	0.799	0.064	0.137	0.717	0.077	0.207
3.67	0.796	0.070	0.134	0.758	0.076	0.166
4.40	0.776	0.083	0.141	0.776	0.083	0.141
P22J16 AB			UG = 3.09			
0.73	0.808	0.049	0.144	0.609	0.079	0.312
1.47	0.809	0.061	0.130	0.667	0.083	0.250
2.20	0.803	0.068	0.129	0.696	0.084	0.219
2.93	0.788	0.075	0.136	0.737	0.083	0.180
3.67	0.787	0.076	0.137	0.764	0.080	0.156
4.40	0.776	0.086	0.138	0.779	0.086	0.136
P23K16 AB			UG = 3.51			
0.73	0.812	0.056	0.132	0.617	0.086	0.297
1.47	0.787	0.078	0.135	0.684	0.094	0.222
2.20	0.783	0.073	0.143	0.652	0.093	0.254
2.93	0.761	0.083	0.156	0.744	0.086	0.170
3.67	0.776	0.079	0.146	0.774	0.079	0.148
P24L16 AB			UG = 3.93			
0.73	0.790	0.073	0.137	0.662	0.093	0.246
1.47	0.779	0.077	0.144	0.664	0.095	0.241
2.20	0.800	0.082	0.118	0.656	0.104	0.240
2.93	0.788	0.089	0.123	0.737	0.097	0.166
3.67	0.780	0.090	0.131	0.769	0.091	0.140
P25M16 AB			UG = 4.34			
0.73	0.834	0.080	0.086	0.654	0.108	0.238
1.47	0.820	0.086	0.094	0.675	0.109	0.217
2.20	0.790	0.099	0.111	0.723	0.109	0.168
2.93	0.782	0.097	0.121	0.746	0.103	0.151
A14A13 IN			UG = 0.0			
5.96	0.445	-0.010	0.565	0.425	0.032	0.544
7.16	0.565	-0.020	0.455	0.524	0.001	0.475
8.35	0.589	-0.011	0.422	0.557	-0.003	0.436
9.54	0.615	-0.009	0.394	0.597	0.0	0.403
10.74	0.637	-0.003	0.366	0.631	0.0	0.368
11.93	0.663	0.0	0.337	0.663	-0.003	0.340

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
A16B13 IN UG = 0.49						
4.77	0.374	0.032	0.594	0.400	0.019	0.581
5.96	0.455	0.021	0.524	0.452	0.023	0.525
7.16	0.521	0.012	0.467	0.515	0.015	0.470
8.35	0.567	0.008	0.425	0.555	0.014	0.431
9.54	0.653	-0.016	0.363	0.594	0.013	0.393
10.74	0.638	0.008	0.354	0.625	0.014	0.361
A17C13 IN UG = 0.92						
4.77	0.422	0.041	0.538	0.401	0.051	0.548
5.96	0.451	0.040	0.508	0.451	0.036	0.504
7.16	0.524	0.030	0.446	0.512	0.036	0.452
8.35	0.547	0.035	0.418	0.539	0.039	0.421
9.54	0.603	0.024	0.373	0.589	0.030	0.380
10.74	0.622	0.032	0.346	0.617	0.035	0.348
11.93	0.633	0.041	0.326	0.650	0.033	0.317
A18D13 IN UG = 1.76						
3.58	0.870	-0.197	0.327	0.335	0.071	0.594
4.77	0.403	0.067	0.530	0.391	0.073	0.536
5.96	0.463	0.052	0.485	0.451	0.058	0.491
7.16	0.506	0.051	0.443	0.476	0.066	0.457
8.35	0.515	0.068	0.417	0.516	0.067	0.417
9.54	0.589	0.046	0.365	0.572	0.055	0.374
10.74	0.610	0.051	0.339	0.599	0.057	0.344
11.93	0.633	0.056	0.311	0.641	0.052	0.307
A19E13 IN UG = 3.53						
3.58	0.317	0.108	0.575	0.321	0.106	0.573
4.77	0.398	0.099	0.503	0.383	0.106	0.510
5.96	0.429	0.102	0.470	0.413	0.110	0.478
7.16	0.485	0.093	0.422	0.474	0.098	0.428
8.35	0.517	0.102	0.380	0.486	0.118	0.396
9.54	0.521	0.116	0.362	0.539	0.108	0.353
10.74	0.563	0.110	0.326	0.571	0.106	0.322
11.93	0.587	0.113	0.299	0.609	0.102	0.289
A20F13 IN UG = 5.25						
3.58	0.314	0.186	0.500	0.237	0.224	0.539
4.77	0.373	0.133	0.494	0.368	0.136	0.496
5.96	0.423	0.129	0.447	0.395	0.144	0.461
7.16	0.421	0.146	0.433	0.425	0.144	0.431
8.35	0.467	0.141	0.392	0.467	0.141	0.392
9.54	0.506	0.142	0.353	0.511	0.139	0.350
10.74	0.527	0.155	0.318	0.546	0.145	0.308
11.93	0.566	0.144	0.290	0.602	0.125	0.272
A21G13 IN UG = 7.01						
2.39	0.189	0.172	0.638	0.251	0.141	0.607
3.58	0.286	0.142	0.571	0.322	0.124	0.554
4.77	0.361	0.143	0.496	0.357	0.145	0.498
5.96	0.405	0.143	0.452	0.412	0.140	0.449
7.16	0.428	0.144	0.428	0.423	0.146	0.430
8.35	0.464	0.159	0.377	0.465	0.158	0.377

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
A21G13 IN			UG = 7.01			
9.54	0.489	0.174	0.337	0.489	0.174	0.337
10.74	0.504	0.183	0.314	0.525	0.172	0.303
A22H13 IN			UG = 8.74			
2.39	0.210	0.164	0.626	0.254	0.142	0.605
3.58	0.223	0.201	0.576	0.339	0.143	0.518
4.77	0.271	0.201	0.528	0.367	0.153	0.480
5.96	0.365	0.177	0.458	0.378	0.171	0.452
7.16	0.352	0.198	0.450	0.406	0.171	0.423
8.35	0.446	0.171	0.383	0.444	0.172	0.385
9.54	0.478	0.169	0.354	0.472	0.171	0.356
10.74	0.460	0.206	0.334	0.483	0.194	0.322
A23I13 IN			UG = 10.46			
2.39	0.219	0.183	0.598	0.229	0.178	0.593
3.58	0.274	0.172	0.554	0.337	0.140	0.523
4.77	0.340	0.175	0.486	0.353	0.168	0.479
5.96	0.281	0.178	0.541	0.396	0.120	0.484
7.16	0.301	0.203	0.496	0.417	0.145	0.438
8.35	0.385	0.183	0.432	0.484	0.134	0.383
9.54	0.428	0.186	0.386	0.497	0.152	0.351
10.74	0.477	0.184	0.340	0.558	0.143	0.299
A24J13 IN			UG = 12.17			
2.39	0.200	0.195	0.605	0.222	0.184	0.594
3.58	0.301	0.185	0.514	0.302	0.185	0.514
4.77	0.316	0.196	0.488	0.319	0.194	0.487
5.96	0.375	0.186	0.438	0.369	0.189	0.442
7.16	0.397	0.192	0.411	0.385	0.198	0.417
8.35	0.456	0.181	0.364	0.443	0.187	0.370
9.54	0.486	0.184	0.330	0.485	0.184	0.331
A25K13 IN			UG = 13.94			
2.39	0.191	0.199	0.610	0.238	0.175	0.587
3.58	0.301	0.186	0.512	0.300	0.187	0.513
4.77	0.332	0.190	0.478	0.333	0.189	0.477
5.96	0.347	0.204	0.449	0.341	0.207	0.452
7.16	0.400	0.187	0.413	0.376	0.199	0.426
8.35	0.439	0.190	0.371	0.430	0.194	0.376
9.54	0.474	0.193	0.333	0.471	0.195	0.334
A26L13 IN			UG = 15.64			
2.39	0.177	0.221	0.603	0.196	0.211	0.593
3.58	0.255	0.218	0.526	0.279	0.206	0.514
4.77	0.271	0.227	0.502	0.293	0.216	0.491
5.96	0.304	0.241	0.454	0.340	0.223	0.437
7.16	0.388	0.205	0.407	0.368	0.216	0.417
8.35	0.406	0.218	0.376	0.400	0.221	0.379
9.54	0.458	0.215	0.328	0.453	0.217	0.330
A27M13 IN			UG = 17.31			
2.39	0.085	0.262	0.653	0.191	0.209	0.600
3.58	0.241	0.239	0.520	0.241	0.239	0.519
4.77	0.299	0.228	0.473	0.281	0.237	0.482

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
		A27M13 IN		UG = 17.31		
5.96	0.368	0.214	0.418	0.316	0.240	0.444
7.16	0.401	0.214	0.384	0.385	0.222	0.392
8.35	0.421	0.217	0.362	0.404	0.226	0.370
9.54	0.448	0.222	0.330	0.443	0.224	0.333
		A14A13 AB		UG = 0.0		
5.96	0.436	0.020	0.544	0.476	-0.007	0.531
7.16	0.527	-0.008	0.481	0.511	0.002	0.487
8.35	0.568	-0.002	0.434	0.564	-0.010	0.446
9.54	0.600	-0.003	0.403	0.593	-0.006	0.413
10.74	0.621	0.002	0.378	0.624	-0.004	0.381
11.93	0.639	0.009	0.351	0.658	-0.008	0.350
		A16B13 AB		UG = 0.49		
4.77	0.444	0.032	0.524	0.388	0.060	0.552
5.96	0.447	0.024	0.530	0.444	0.025	0.531
7.16	0.498	0.020	0.482	0.502	0.018	0.480
8.35	0.557	0.012	0.431	0.546	0.018	0.436
9.54	0.667	-0.006	0.339	0.612	0.022	0.367
10.74	0.622	0.012	0.366	0.614	0.016	0.370
		A17C13 AB		UG = 0.92		
4.77	0.423	0.051	0.526	0.374	0.075	0.551
5.96	0.426	0.049	0.526	0.439	0.042	0.519
7.16	0.501	0.036	0.463	0.500	0.036	0.463
8.35	0.529	0.039	0.431	0.525	0.042	0.434
9.54	0.594	0.029	0.377	0.568	0.042	0.390
10.74	0.605	0.035	0.360	0.601	0.037	0.362
11.93	0.615	0.045	0.340	0.641	0.032	0.327
		A18D13 AB		UG = 1.76		
3.58	0.892	-0.188	0.296	0.301	0.108	0.592
4.77	0.389	0.064	0.547	0.370	0.074	0.556
5.96	0.439	0.060	0.500	0.430	0.065	0.505
7.16	0.484	0.063	0.453	0.452	0.074	0.464
8.35	0.498	0.074	0.428	0.499	0.073	0.427
9.54	0.572	0.049	0.379	0.558	0.056	0.386
10.74	0.592	0.056	0.352	0.586	0.059	0.355
11.93	0.618	0.060	0.322	0.630	0.053	0.316
		A19E13 AB		UG = 3.53		
3.58	0.313	0.104	0.583	0.310	0.106	0.584
4.77	0.362	0.115	0.523	0.360	0.116	0.524
5.96	0.416	0.104	0.481	0.409	0.107	0.484
7.16	0.461	0.097	0.442	0.454	0.100	0.446
8.35	0.490	0.119	0.391	0.467	0.130	0.403
9.54	0.497	0.120	0.383	0.527	0.105	0.368
10.74	0.538	0.122	0.341	0.553	0.114	0.333
11.93	0.593	0.106	0.302	0.619	0.093	0.289
		A20F13 AB		UG = 5.25		
3.58	0.295	0.201	0.504	0.205	0.246	0.548
4.77	0.352	0.133	0.515	0.347	0.135	0.518
5.96	0.389	0.135	0.475	0.384	0.138	0.478

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
A20F13 AB				UG = 5.25		
7.16	0.402	0.144	0.454	0.422	0.134	0.443
8.35	0.454	0.137	0.408	0.462	0.133	0.404
9.54	0.511	0.135	0.354	0.515	0.133	0.352
10.74	0.510	0.156	0.334	0.543	0.139	0.318
11.93	0.551	0.148	0.301	0.608	0.119	0.272
A21G13 AB				UG = 7.01		
2.39	0.169	0.183	0.647	0.233	0.152	0.616
3.58	0.275	0.152	0.573	0.309	0.135	0.556
4.77	0.361	0.137	0.502	0.363	0.136	0.501
5.96	0.380	0.156	0.465	0.382	0.155	0.464
7.16	0.443	0.138	0.420	0.432	0.143	0.425
8.35	0.447	0.162	0.391	0.451	0.154	0.384
9.54	0.456	0.180	0.364	0.482	0.167	0.351
10.74	0.510	0.175	0.316	0.535	0.162	0.303
A22H13 AB				UG = 8.74		
2.39	0.219	0.167	0.614	0.235	0.159	0.606
3.58	0.293	0.157	0.550	0.313	0.147	0.540
4.77	0.358	0.154	0.488	0.362	0.152	0.486
5.96	0.386	0.161	0.453	0.396	0.156	0.448
7.16	0.424	0.157	0.418	0.407	0.166	0.427
8.35	0.428	0.179	0.393	0.431	0.177	0.392
9.54	0.452	0.184	0.364	0.452	0.185	0.364
10.74	0.476	0.193	0.331	0.496	0.183	0.321
A23I13 AB				UG = 10.46		
2.39	0.221	0.178	0.601	0.237	0.170	0.593
3.58	0.305	0.159	0.536	0.321	0.151	0.528
4.77	0.344	0.164	0.491	0.346	0.164	0.490
5.96	0.312	0.164	0.524	0.392	0.124	0.484
7.16	0.326	0.180	0.494	0.419	0.134	0.447
8.35	0.408	0.162	0.430	0.488	0.122	0.390
9.54	0.429	0.183	0.388	0.507	0.144	0.349
10.74	0.490	0.170	0.340	0.572	0.129	0.299
A24J13 AB				UG = 12.17		
2.39	0.155	0.209	0.635	0.222	0.176	0.602
3.58	0.300	0.184	0.516	0.302	0.183	0.515
4.77	0.309	0.180	0.511	0.331	0.169	0.500
5.96	0.358	0.194	0.448	0.352	0.197	0.451
7.16	0.390	0.185	0.426	0.388	0.185	0.426
8.35	0.433	0.185	0.383	0.434	0.184	0.382
9.54	0.463	0.191	0.345	0.469	0.188	0.342
A25K13 AB				UG = 13.94		
2.39	0.187	0.218	0.595	0.207	0.208	0.585
3.58	0.304	0.186	0.510	0.309	0.184	0.507
4.77	0.317	0.199	0.484	0.303	0.206	0.491
5.96	0.341	0.201	0.458	0.356	0.193	0.451
7.16	0.406	0.177	0.417	0.396	0.182	0.422
8.35	0.444	0.183	0.373	0.436	0.187	0.377
9.54	0.462	0.195	0.343	0.470	0.191	0.339

Table 12 (continued)

UL	ELC	EGC	ESC	ELDP	EGDP	ESDP
A26L13 AB			UG = 15.64			
2.39	0.175	0.222	0.603	0.190	0.214	0.596
3.58	0.245	0.217	0.537	0.266	0.207	0.527
4.77	0.277	0.217	0.506	0.307	0.202	0.491
5.96	0.324	0.223	0.454	0.328	0.221	0.452
7.16	0.374	0.204	0.422	0.360	0.211	0.429
8.35	0.414	0.207	0.380	0.399	0.214	0.387
9.54	0.428	0.221	0.351	0.427	0.222	0.351
A27M13 AB			UG = 17.31			
2.39	-0.019	0.311	0.707	0.157	0.223	0.619
3.58	0.240	0.224	0.536	0.253	0.217	0.530
4.77	0.278	0.213	0.509	0.285	0.210	0.505
5.96	0.349	0.209	0.442	0.334	0.217	0.449
7.16	0.390	0.219	0.391	0.357	0.236	0.407
8.35	0.385	0.226	0.389	0.376	0.231	0.393
9.54	0.422	0.228	0.350	0.423	0.227	0.350

APPENDIX E

INCREMENTAL HOLDUP DATA

The incremental (local) holdup data are presented in Table 13. The headings INC1, INC2, INC3, etc. represent the ten increments that made up each column, with INC1 at the bottom of the column and INC10 at the top. Subheadings include the run number and the gas velocity (UG in cm/sec), which is further subdivided into local liquid, gas, and solid holdup values (EL, EG, and ES, respectively) at each liquid velocity (UL in cm/sec) listed.

Table 13. Incremental holdup data

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G67D13 IN UG = 1.78											
UL = 4.77											
	EL	.438	.430	.427	.415	.415	.889	.883	.881	.883	.881
	EG	.019	.041	.047	.055	.094	.111	.117	.119	.117	.119
	ES	.543	.529	.525	.531	.491	.019	.036	.018	.037	.011
UL = 7.16											
	EL	.547	.598	.579	.558	.542	.568	.901	.903	.898	.898
	EG	-.04	-.02	.007	.024	.019	.109	.099	.097	.102	.102
	ES	.488	.425	.413	.418	.440	.322	.024	.008	.025	-.01
UL = 9.54											
	EL	.698	.706	.695	.658	.639	.709	.706	.952	.955	.957
	EG	-.05	-.05	-.03	-.01	.004	-.02	.041	.048	.045	.043
	ES	.352	.347	.332	.354	.357	.316	.253	-.01	.000	-.01
UL = 11.93											
	EL	.863	.818	.762	.800	.805	.759	.696	.699	.919	.909
	EG	-.07	-.07	-.04	-.05	-.06	-.03	.011	.035	.050	.091
	ES	.204	.248	.278	.246	.254	.273	.293	.267	.031	.014
G68K13 IN UG = 13.95											
UL = 2.39											
	EL	.270	.245	.220	.223	.278	.725	.738	.733	.730	.713
	EG	.215	.218	.187	.206	.283	.275	.262	.267	.270	.287
	ES	.515	.537	.592	.571	.438	.026	-.00	.030	.021	.007
UL = 3.58											
	EL	.342	.334	.334	.326	.329	.685	.726	.728	.726	.715
	EG	.189	.183	.149	.178	.186	.211	.274	.272	.274	.285
	ES	.469	.483	.517	.496	.485	.104	.020	.042	.013	-.00
UL = 4.77											
	EL	.376	.382	.403	.406	.398	.610	.694	.718	.720	.707
	EG	.170	.147	.145	.104	.163	.217	.306	.282	.280	.293
	ES	.454	.471	.452	.490	.440	.173	.064	.017	.065	-.01
UL = 5.96											
	EL	.427	.446	.457	.452	.449	.511	.667	.710	.712	.715
	EG	.169	.106	.090	.128	.154	.171	.288	.290	.288	.285
	ES	.404	.448	.453	.421	.397	.318	.046	.065	.029	-.01
UL = 7.16											
	EL	.418	.472	.501	.493	.491	.475	.601	.684	.702	.708
	EG	.174	.102	.095	.090	.136	.207	.258	.316	.298	.292
	ES	.408	.426	.404	.417	.374	.319	.131	.091	.043	-.04
UL = 8.35											
	EL	.465	.513	.532	.524	.511	.508	.519	.661	.702	.720
	EG	.175	.083	.073	.087	.144	.183	.258	.233	.298	.280
	ES	.360	.403	.395	.388	.345	.309	.224	.106	.053	.009
UL = 9.54											
	EL	.535	.551	.559	.554	.540	.524	.524	.573	.664	.707
	EG	.163	.087	.097	.130	.128	.159	.209	.223	.251	.293
	ES	.302	.362	.343	.316	.332	.317	.257	.204	.085	.020

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G68K13 IN UG = 13.95											
UL = 10.74											
	EL	.753	.763	.747	.726	.715	.669	.589	.583	.624	.726
	EG	.083	-.00	.022	.039	.050	.093	.152	.173	.229	.226
	ES	.164	.238	.230	.235	.235	.237	.259	.244	.147	.048
UL = 11.93											
	EL	.656	.709	.704	.696	.689	.648	.569	.571	.569	.602
	EG	.178	.098	.061	.051	.099	.130	.194	.150	.205	.253
	ES	.166	.193	.235	.253	.212	.222	.237	.279	.226	.145
G72A13 IN UG = 0.00											
UL = 5.96											
	EL	.536	.541	.544	.555	.541	.995	1.00	1.00	1.00	1.00
	EG	-.04	-.06	-.04	-.05	-.03	.008	-.01	-.00	-.00	-.01
	ES	.500	.519	.493	.493	.485	-.00	-.00	.004	.053	-.06
UL = 7.16											
	EL	.613	.616	.725	.755	.589	.899	1.00	1.00	1.00	1.00
	EG	-.07	-.06	-.13	-.13	-.03	-.07	-.00	-.01	-.01	.000
	ES	.458	.442	.408	.380	.444	.166	-.00	.003	.003	-.01
UL = 8.35											
	EL	.626	.642	.645	.645	.637	.631	1.01	1.02	1.01	1.02
	EG	-.07	-.05	-.06	-.06	-.04	-.01	-.01	-.02	-.01	-.02
	ES	.439	.405	.414	.414	.408	.380	-.01	.003	-.01	-.02
UL = 9.54											
	EL	.678	.884	.859	.873	.859	.738	1.02	1.02	1.01	1.01
	EG	-.05	-.16	-.16	-.17	-.16	-.09	-.07	-.02	-.01	-.01
	ES	.375	.278	.304	.293	.299	.353	.052	.003	.000	-.01
UL = 10.74											
	EL	.904	.719	.733	.794	.866	.767	.757	1.06	1.06	.997
	EG	-.18	-.06	-.07	-.11	-.14	-.09	-.03	-.06	-.06	.003
	ES	.275	.337	.340	.313	.271	.325	.276	-.02	-.02	-.00
UL = 11.93											
	EL	.935	.921	.921	.921	.921	.881	.794	1.06	1.06	1.01
	EG	-.18	-.16	-.15	-.17	-.16	-.14	-.08	-.10	-.06	-.01
	ES	.241	.242	.232	.247	.237	.260	.290	.036	-.03	-.01
G74G13 IN UG = 7.11											
UL = 3.58											
	EL	.338	.375	.407	.426	.396	.918	.899	.827	.830	.835
	EG	.143	.111	.103	.054	.154	.082	.101	.173	.170	.165
	ES	.519	.514	.490	.521	.450	-.00	-.04	.003	.031	-.01
UL = 4.77											
	EL	.396	.486	.512	.252	.386	.782	.806	.816	.822	.819
	EG	.131	.079	.045	.199	.100	.146	.194	.184	.178	.181
	ES	.472	.435	.443	.549	.514	.071	.015	.027	.010	.012
UL = 5.96											
	EL	.437	.456	.458	.453	.448	.595	.858	.869	.874	.874
	EG	.115	.091	.094	.092	.090	.150	.142	.131	.126	.126
	ES	.448	.453	.447	.455	.462	.255	-.00	-.01	-.02	-.02

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G75G13 IN	UG = 7.07										
UL = 7.16											
	EL	.540	.594	.587	.594	.587	.568	.801	.827	.824	.822
	EG	.065	.019	.028	.029	.028	.114	.152	.173	.176	.178
	ES	.395	.387	.385	.377	.385	.317	.047	.013	-.01	.016
UL = 8.35											
	EL	.639	.691	.647	.540	.634	.604	.647	.790	.824	.821
	EG	.044	-.02	.019	.094	.036	.074	.135	.210	.176	.179
	ES	.317	.325	.334	.367	.330	.322	.218	.029	.009	.011
UL = 9.54											
	EL	.595	.621	.606	.580	.563	.548	.553	.709	.779	.786
	EG	.089	.073	.072	.086	.110	.151	.090	.152	.221	.214
	ES	.316	.306	.323	.334	.327	.301	.347	.139	.029	.027
G76C13 IN	UG = 0.95										
UL = 3.58											
	EL	.492	.503	.405	.455	.910	1.02	1.02	.960	.952	.979
	EG	-.06	-.03	.021	.012	-.06	-.02	-.02	.040	.048	.021
	ES	.567	.531	.575	.533	.153	-.02	-.01	-.00	.006	-.01
UL = 4.77											
	EL	.568	.568	.538	.528	.533	.967	.965	.957	.957	.950
	EG	-.02	-.12	.011	.007	.038	.033	.035	.043	.043	.050
	ES	.451	.552	.452	.466	.429	.009	-.01	.014	.004	.007
UL = 5.96											
	EL	.609	.622	.602	.590	.592	.958	.915	.923	.933	.938
	EG	-.06	-.07	-.04	-.03	-.03	-.01	.085	.077	.067	.062
	ES	.453	.444	.443	.443	.442	.049	.022	.024	.010	.001
UL = 7.16											
	EL	.554	.559	.554	.536	.531	.656	.903	.903	.900	.898
	EG	-.02	-.02	.012	.007	.019	.055	.097	.097	.100	.102
	ES	.471	.457	.435	.457	.449	.289	.033	.028	.029	.024
UL = 8.35											
	EL	.615	.648	.635	.620	.607	.599	.948	.945	.940	.943
	EG	-.04	-.04	-.02	-.02	-.01	.011	.024	.055	.060	.057
	ES	.424	.393	.384	.400	.406	.390	.028	.005	.022	.005
UL = 9.54											
	EL	.684	.692	.692	.668	.648	.645	.834	.946	.943	.948
	EG	-.05	-.05	-.04	-.02	-.02	-.01	-.01	.054	.057	.052
	ES	.365	.359	.349	.354	.373	.369	.170	.009	.020	.007
UL = 10.74											
	EL	.735	.722	.704	.683	.683	.683	.673	.997	.948	.992
	EG	-.05	-.04	-.02	-.02	-.02	-.02	.004	-.04	.052	.008
	ES	.316	.321	.319	.333	.338	.332	.324	.041	.013	-.01
G77J13 IN	UG = 12.47										
UL = 2.39											
	EL	.317	.268	.224	.216	.281	.760	.760	.753	.745	.745
	EG	.148	.171	.180	.199	.341	.240	.240	.247	.255	.255
	ES	.535	.561	.595	.584	.378	.036	.009	.021	.014	.003

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G77J13 IN UG = 12.47											
UL = 3.58											
	EL	.371	.345	.317	.309	.315	.737	.749	.749	.749	.742
	EG	.125	.157	.178	.167	.224	.202	.251	.251	.251	.258
	ES	.504	.497	.505	.523	.462	.061	.035	-.00	.012	.031
UL = 4.77											
	EL	.417	.391	.381	.381	.373	.609	.734	.747	.749	.737
	EG	.120	.151	.167	.137	.196	.198	.266	.253	.251	.263
	ES	.463	.457	.452	.481	.431	.194	.046	.023	.022	-.00
UL = 5.96											
	EL	.474	.467	.439	.439	.434	.505	.702	.742	.747	.740
	EG	.074	.119	.174	.125	.143	.200	.232	.258	.253	.260
	ES	.451	.414	.387	.436	.424	.295	.066	.035	.018	.000
UL = 7.16											
	EL	.499	.504	.486	.481	.473	.468	.628	.716	.727	.732
	EG	.088	.099	.128	.180	.101	.190	.222	.284	.273	.268
	ES	.413	.398	.386	.339	.426	.342	.150	.032	.027	.015
UL = 8.35											
	EL	.534	.547	.527	.519	.509	.501	.539	.682	.718	.728
	EG	.089	.089	.101	.184	.096	.162	.210	.236	.282	.272
	ES	.377	.364	.373	.297	.395	.337	.250	.082	.031	.016
UL = 9.54											
	EL	.644	.626	.593	.560	.547	.534	.517	.613	.695	.728
	EG	.055	.075	.098	.166	.084	.168	.152	.215	.254	.272
	ES	.301	.299	.309	.274	.368	.297	.321	.171	.052	.032
UL = 10.74											
	EL	.631	.639	.623	.593	.573	.562	.545	.542	.621	.705
	EG	.123	.098	.096	.143	.189	.118	.157	.211	.221	.295
	ES	.245	.264	.280	.264	.239	.320	.299	.247	.158	.058
UL = 11.93											
	EL	.597	.635	.630	.615	.590	.580	.567	.554	.557	.635
	EG	.238	.085	.152	.155	.169	.133	.144	.189	.192	.240
	ES	.165	.280	.218	.230	.241	.287	.239	.257	.251	.125
G79L13 IN UG = 15.65											
UL = 2.39											
	EL	.299	.236	.216	.216	.259	.701	.706	.706	.701	.685
	EG	.171	.194	.239	.220	.309	.252	.294	.294	.299	.315
	ES	.529	.570	.545	.565	.432	.047	.028	.027	.024	.009
UL = 3.58											
	EL	.369	.322	.304	.302	.292	.621	.636	.688	.688	.678
	EG	.140	.185	.215	.196	.246	.236	.314	.312	.312	.322
	ES	.491	.493	.481	.502	.462	.143	.063	.005	.079	.022
UL = 4.77											
	EL	.420	.381	.371	.373	.368	.498	.672	.694	.694	.682
	EG	.118	.143	.212	.167	.179	.234	.290	.306	.306	.318
	ES	.462	.477	.417	.460	.453	.268	.038	.037	.037	-.01
UL = 5.96											
	EL	.437	.419	.414	.419	.419	.432	.618	.672	.690	.680
	EG	.122	.136	.173	.151	.210	.241	.264	.328	.310	.320
	ES	.441	.445	.412	.430	.371	.328	.118	.051	.029	.022

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G79L13 IN UG = 15.65											
UL = 7.16											
	EL	.450	.473	.473	.463	.463	.455	.532	.649	.677	.682
	EG	.101	.151	.126	.220	.136	.192	.265	.284	.323	.318
	ES	.449	.377	.401	.317	.401	.352	.202	.067	.045	.037
UL = 8.35											
	EL	.536	.528	.511	.504	.489	.477	.486	.602	.657	.674
	EG	.095	.124	.134	.212	.122	.180	.271	.246	.343	.326
	ES	.370	.347	.355	.284	.389	.343	.243	.152	.083	.040
UL = 9.54											
	EL	.614	.580	.553	.526	.516	.496	.491	.526	.627	.673
	EG	.058	.120	.106	.170	.240	.149	.207	.249	.282	.327
	ES	.328	.300	.341	.304	.244	.354	.302	.225	.092	.067
UL = 10.74											
	EL	.627	.603	.578	.559	.534	.529	.525	.522	.559	.637
	EG	.112	.113	.136	.201	.200	.136	.198	.212	.260	.249
	ES	.261	.285	.286	.240	.266	.335	.277	.266	.181	.114
UL = 11.93											
	EL	.603	.594	.591	.576	.562	.542	.534	.534	.534	.562
	EG	.180	.177	.129	.211	.200	.164	.218	.200	.225	.249
	ES	.217	.229	.280	.212	.239	.294	.247	.266	.241	.189
G80B13 IN UG = 0.44											
UL = 4.77											
	EL	.474	.469	.459	.451	.459	.969	.974	.977	.977	.974
	EG	.020	-.02	-.01	.010	.119	.031	.026	.023	.023	.026
	ES	.506	.546	.551	.539	.422	.014	.011	.000	.010	.001
UL = 5.96											
	EL	.516	.513	.510	.505	.503	.972	.977	.977	.979	.977
	EG	-.05	-.02	.001	-.01	.001	.016	.023	.023	.021	.023
	ES	.536	.507	.488	.505	.497	.013	.010	.005	-.00	.005
UL = 7.16											
	EL	.563	.570	.568	.570	.573	.799	.937	.984	.987	.987
	EG	-.04	-.03	-.01	-.04	-.01	.001	.013	.016	.013	.013
	ES	.481	.462	.443	.467	.436	.200	.001	.002	.011	-.02
UL = 8.35											
	EL	.598	.608	.606	.608	.606	.606	.979	.982	.982	.979
	EG	-.05	-.03	-.01	-.02	-.02	.003	.022	.018	.018	.021
	ES	.451	.425	.407	.415	.416	.392	-.00	.013	.008	-.00
UL = 9.54											
	EL	.655	.655	.657	.655	.655	.652	.941	.985	.987	.987
	EG	-.03	-.05	-.04	-.02	-.03	-.03	-.05	.015	.013	.013
	ES	.372	.400	.384	.360	.375	.376	.108	.012	.011	-.01
UL = 10.74											
	EL	.693	.693	.693	.693	.693	.693	.696	.995	.995	.995
	EG	-.06	-.04	-.05	-.02	-.03	-.05	-.01	.008	.005	.005
	ES	.361	.348	.353	.328	.338	.353	.313	-.00	.002	-.01
UL = 11.93											
	EL	.739	.724	.724	.722	.722	.722	.722	.954	.980	.985
	EG	-.05	-.04	-.05	-.03	-.03	-.04	-.03	-.05	.020	.015
	ES	.314	.320	.325	.311	.311	.315	.307	.099	.014	.002

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G82E13 IN UG = 3.58											
UL = 2.39											
	EL	.311	.282	.243	.256	.760	.820	.820	.828	.828	.833
	EG	.097	.133	.086	.197	.104	.180	.130	.172	.172	.167
	ES	.592	.585	.671	.547	.136	.019	.044	.022	.032	.022
UL = 3.58											
	EL	.387	.372	.361	.343	.408	.864	.859	.872	.872	.869
	EG	.068	.079	.099	.124	.176	.136	.131	.128	.128	.131
	ES	.545	.550	.540	.533	.415	.010	.022	.008	.008	.016
UL = 4.77											
	EL	.451	.435	.412	.402	.399	.845	.852	.850	.855	.860
	EG	.039	.063	.096	.101	.098	.132	.148	.150	.145	.140
	ES	.510	.502	.492	.497	.503	.024	.014	.012	.030	.005
UL = 5.96											
	EL	.486	.496	.470	.463	.457	.659	.832	.837	.835	.840
	EG	.027	.054	.103	.082	.060	.129	.158	.163	.165	.160
	ES	.487	.450	.427	.455	.482	.212	.008	.013	.024	.003
UL = 7.16											
	EL	.527	.547	.517	.506	.494	.486	.826	.826	.829	.829
	EG	-.00	.035	.072	.078	.109	.135	.122	.174	.171	.171
	ES	.476	.418	.412	.416	.397	.379	.052	.018	.012	.019
UL = 8.35											
	EL	.569	.608	.585	.559	.546	.528	.769	.821	.818	.818
	EG	-.03	.016	.064	.063	.100	.091	.093	.179	.182	.182
	ES	.457	.376	.352	.378	.354	.381	.138	.020	.036	.013
UL = 9.54											
	EL	.580	.643	.620	.592	.577	.577	.562	.808	.803	.795
	EG	.029	.031	.049	.099	.078	.094	.091	.122	.197	.205
	ES	.391	.326	.331	.309	.345	.329	.347	.070	.028	.023
UL = 10.74											
	EL	.633	.661	.638	.623	.613	.606	.598	.598	.809	.802
	EG	.027	.046	.053	.091	.067	.083	.096	.120	.151	.198
	ES	.340	.293	.308	.285	.319	.311	.306	.282	.040	.025
UL = 11.93											
	EL	.693	.693	.681	.653	.646	.646	.631	.631	.704	.814
	EG	.027	.042	.044	.065	.089	.076	.088	.097	.106	.186
	ES	.279	.264	.275	.282	.266	.278	.231	.272	.191	.030
G85F13 IN UG = 5.31											
UL = 2.39											
	EL	.309	.271	.258	.248	.633	.790	.792	.790	.790	.787
	EG	.118	.125	.122	.167	.150	.210	.208	.210	.210	.213
	ES	.573	.604	.620	.585	.217	.023	.031	.024	.024	.032
UL = 3.58											
	EL	.383	.356	.336	.331	.341	.832	.835	.835	.835	.835
	EG	.104	.117	.128	.131	.214	.168	.165	.165	.165	.165
	ES	.512	.527	.536	.538	.445	.029	.007	.029	.024	.011
UL = 4.77											
	EL	.441	.416	.389	.386	.381	.787	.817	.817	.817	.817
	EG	.072	.093	.138	.130	.113	.134	.133	.183	.183	.183
	ES	.487	.491	.473	.484	.506	.079	.030	-.00	.032	.013

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G85F13 IN UG = 5.31											
UL = 5.96											
	EL	.468	.475	.448	.431	.428	.574	.800	.802	.802	.802
	EG	.050	.075	.115	.115	.116	.171	.200	.198	.198	.198
	ES	.482	.450	.437	.455	.456	.254	.028	.024	.029	.025
UL = 7.16											
	EL	.500	.542	.512	.498	.480	.473	.731	.788	.791	.788
	EG	.012	.063	.114	.092	.117	.142	.158	.212	.209	.212
	ES	.488	.395	.374	.410	.403	.385	.051	.020	.034	.021
UL = 8.35											
	EL	.587	.619	.564	.550	.535	.512	.582	.782	.790	.792
	EG	-.02	.025	.090	.118	.091	.120	.167	.218	.210	.208
	ES	.429	.356	.346	.333	.374	.367	.252	.028	.039	.014
UL = 9.54											
	EL	.649	.622	.598	.580	.578	.558	.548	.753	.778	.783
	EG	-.02	.048	.101	.105	.087	.120	.099	.157	.222	.217
	ES	.367	.330	.302	.314	.335	.322	.353	.090	.034	.008
UL = 10.74											
	EL	.695	.686	.624	.609	.607	.600	.582	.580	.744	.754
	EG	-.00	.047	.081	.124	.081	.132	.105	.140	.137	.246
	ES	.306	.268	.295	.267	.312	.268	.313	.280	.118	.025
UL = 11.93											
	EL	.672	.674	.637	.591	.635	.618	.600	.596	.588	.743
	EG	.074	.053	.084	.139	.090	.117	.125	.136	.136	.195
	ES	.255	.273	.279	.270	.275	.265	.274	.268	.276	.062
G86H13 IN UG = 8.81											
UL = 2.39											
	EL	.317	.273	.237	.229	.424	.776	.780	.776	.776	.766
	EG	.134	.143	.164	.178	.286	.224	.220	.224	.224	.234
	ES	.549	.584	.600	.593	.290	.034	.016	.016	.016	.015
UL = 3.58											
	EL	.331	.329	.321	.314	.316	.771	.778	.775	.771	.766
	EG	.127	.162	.146	.165	.213	.178	.222	.225	.229	.234
	ES	.542	.510	.533	.521	.471	.051	.037	.006	.018	.036
UL = 4.77											
	EL	.391	.381	.376	.374	.371	.716	.777	.779	.779	.782
	EG	.107	.118	.165	.151	.153	.153	.223	.221	.221	.218
	ES	.502	.501	.459	.475	.476	.131	.022	.019	.004	.029
UL = 5.96											
	EL	.445	.440	.435	.428	.428	.514	.764	.769	.781	.781
	EG	.077	.115	.147	-.01	.279	.195	.236	.231	.219	.219
	ES	.478	.446	.418	.584	.293	.291	.043	.014	.028	.024
UL = 7.16											
	EL	.471	.490	.488	.476	.471	.459	.733	.776	.784	.779
	EG	.069	.101	.093	.154	.102	.185	.174	.224	.216	.221
	ES	.460	.408	.419	.370	.427	.356	.093	.020	.017	.014
UL = 8.35											
	EL	.566	.564	.530	.516	.511	.496	.607	.760	.772	.777
	EG	.037	.090	.094	.151	.085	.139	.204	.240	.228	.223
	ES	.397	.346	.376	.333	.404	.364	.190	.047	.037	.015

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G86H13 IN	UG = 8.81										
UL = 9.54											
	EL	.637	.623	.587	.561	.556	.544	.525	.683	.737	.761
	EG	.031	.077	.077	.151	.084	.138	.132	.206	.263	.239
	ES	.332	.300	.336	.288	.360	.318	.343	.111	.052	.017
UL = 10.74											
	EL	.630	.633	.623	.588	.573	.569	.555	.547	.687	.735
	EG	.097	.081	.096	.161	.109	.124	.146	.173	.209	.265
	ES	.273	.286	.280	.252	.317	.307	.300	.280	.104	.018
UL = 11.93											
	EL	.619	.634	.629	.619	.600	.586	.572	.565	.563	.655
	EG	.157	.105	.123	.138	.163	.145	.152	.173	.165	.229
	ES	.223	.261	.248	.243	.236	.269	.266	.262	.273	.116
G87I13 IN	UG = 10.54										
UL = 2.39											
	EL	.299	.249	.224	.216	.338	.759	.759	.754	.756	.751
	EG	.152	.177	.161	.195	.309	.241	.241	.246	.244	.249
	ES	.550	.575	.615	.589	.352	.031	.020	.015	.029	.001
UL = 3.58											
	EL	.361	.329	.315	.310	.312	.749	.763	.761	.754	.759
	EG	.130	.176	.179	.167	.196	.200	.237	.239	.246	.241
	ES	.509	.495	.506	.523	.492	.051	.018	.022	.025	.023
UL = 4.77											
	EL	.390	.388	.376	.366	.361	.683	.761	.761	.766	.756
	EG	.107	.139	.180	.156	.139	.171	.239	.239	.234	.244
	ES	.502	.474	.444	.478	.500	.146	.019	.027	.005	.025
UL = 5.96											
	EL	.417	.437	.427	.425	.420	.539	.733	.750	.750	.750
	EG	.099	.116	.171	.128	.131	.196	.267	.250	.250	.250
	ES	.484	.447	.402	.447	.449	.265	.057	.027	.022	.017
UL = 7.16											
	EL	.495	.505	.481	.481	.471	.466	.693	.749	.754	.754
	EG	.069	.108	.141	.097	.127	.176	.206	.251	.246	.246
	ES	.435	.387	.378	.423	.402	.358	.100	.042	.020	.015
UL = 8.35											
	EL	.564	.567	.535	.521	.516	.494	.552	.722	.746	.755
	EG	.038	.079	.096	.163	.112	.156	.188	.219	.254	.245
	ES	.398	.355	.369	.316	.372	.350	.250	.059	.039	.009
UL = 9.54											
	EL	.635	.613	.579	.553	.536	.524	.512	.625	.726	.733
	EG	.012	.082	.106	.160	.110	.154	.159	.209	.274	.267
	ES	.353	.305	.315	.287	.354	.322	.329	.166	.043	.035
UL = 10.74											
	EL	.674	.651	.628	.610	.577	.572	.559	.556	.654	.744
	EG	.079	.086	.098	.123	.162	.117	.174	.173	.222	.256
	ES	.247	.263	.273	.266	.262	.311	.267	.271	.124	.056
UL = 11.93											
	EL	.650	.626	.616	.596	.586	.571	.562	.562	.554	.626
	EG	.167	.115	.140	.151	.181	.148	.183	.160	.199	.229
	ES	.182	.260	.244	.253	.233	.281	.256	.278	.247	.145

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G88M13 IN UG = 17.26											
UL = 1.19											
	EL	.185	.123	.118	.126	.433	.672	.677	.672	.664	.651
	EG	.317	.202	.254	.339	.325	.328	.323	.328	.336	.349
	ES	.498	.675	.628	.536	.241	.019	.036	.057	.001	.034
UL = 2.39											
	EL	.298	.232	.219	.209	.245	.661	.636	.684	.686	.666
	EG	.158	.245	.227	.233	.327	.265	.314	.316	.314	.334
	ES	.543	.523	.553	.558	.428	.075	.017	.027	.026	.028
UL = 3.58											
	EL	.340	.302	.308	.310	.310	.557	.653	.670	.672	.665
	EG	.176	.191	.243	.197	.256	.251	.347	.330	.328	.335
	ES	.484	.506	.450	.493	.434	.191	.067	.018	.037	.008
UL = 4.77											
	EL	.412	.383	.383	.380	.370	.496	.627	.652	.669	.662
	EG	.088	.176	.141	.256	.217	.240	.274	.348	.331	.338
	ES	.499	.441	.476	.363	.412	.264	.099	.046	.018	.009
UL = 5.96											
	EL	.429	.438	.429	.429	.416	.441	.586	.638	.655	.665
	EG	.127	.160	.126	.254	.138	.251	.251	.310	.345	.335
	ES	.445	.402	.446	.317	.446	.308	.163	.052	.030	.018
UL = 7.16											
	EL	.483	.475	.471	.458	.449	.441	.515	.610	.654	.667
	EG	.104	.139	.137	.233	.134	.230	.270	.296	.346	.333
	ES	.414	.385	.392	.309	.417	.328	.215	.094	.055	.022
UL = 8.35											
	EL	.550	.523	.506	.496	.474	.462	.474	.564	.633	.655
	EG	.080	.103	.137	.187	.253	.158	.247	.297	.274	.345
	ES	.370	.374	.357	.317	.272	.380	.279	.139	.094	.028
UL = 9.54											
	EL	.602	.580	.555	.525	.517	.507	.498	.520	.592	.657
	EG	.071	.111	.095	.205	.239	.148	.203	.272	.276	.296
	ES	.327	.310	.350	.270	.244	.344	.299	.208	.132	.048
UL = 10.74											
	EL	.618	.611	.579	.555	.530	.521	.509	.511	.523	.596
	EG	.131	.113	.126	.218	.252	.151	.212	.218	.261	.272
	ES	.251	.276	.295	.227	.218	.328	.279	.271	.216	.132
UL = 11.93											
	EL	.554	.571	.571	.554	.542	.540	.520	.518	.518	.540
	EG	.221	.155	.180	.209	.225	.181	.216	.219	.239	.277
	ES	.225	.274	.249	.237	.233	.280	.264	.263	.243	.183
G67D13 AB UG = 1.78											
UL = 4.77											
	EL	.438	.430	.427	.415	.415	.889	.883	.881	.883	.881
	EG	.026	.036	.028	.055	.153	.111	.117	.119	.117	.119
	ES	.536	.534	.545	.531	.432	.029	.021	.028	.027	.011
UL = 7.16											
	EL	.547	.598	.579	.558	.542	.568	.901	.903	.898	.898
	EG	-.05	-.02	-.01	.019	.009	.170	.099	.097	.102	.102
	ES	.501	.420	.428	.423	.450	.262	.013	.013	.021	.019

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G67D13 AB UG = 1.78											
UL = 9.54	EL	.698	.706	.695	.658	.639	.709	.706	.952	.955	.957
	EG	-.06	-.05	-.02	-.01	-.00	-.02	.103	.048	.045	.043
	ES	.366	.347	.327	.354	.362	.316	.192	-.00	.005	-.01
UL = 11.93	EL	.863	.818	.762	.800	.805	.759	.696	.699	.919	.909
	EG	-.09	-.07	-.04	-.04	-.06	-.03	.021	.074	.060	.091
	ES	.231	.253	.278	.242	.259	.268	.233	.227	.021	.009
G68K13 AB UG = 13.95											
UL = 2.39	EL	.270	.245	.220	.223	.278	.725	.738	.733	.730	.713
	EG	.195	.188	.178	.206	.333	.275	.262	.267	.270	.287
	ES	.535	.566	.602	.571	.389	.036	.004	.030	.001	.012
UL = 3.58	EL	.342	.334	.334	.326	.329	.685	.726	.728	.726	.715
	EG	.154	.178	.104	.158	.260	.216	.274	.272	.274	.285
	ES	.503	.487	.561	.516	.411	.099	.015	.037	-.01	.006
UL = 4.77	EL	.376	.382	.403	.406	.398	.610	.694	.718	.720	.707
	EG	.136	.132	.130	.099	.177	.252	.306	.282	.280	.293
	ES	.488	.486	.467	.495	.425	.137	.039	.046	.025	.005
UL = 5.96	EL	.427	.446	.457	.452	.449	.511	.667	.710	.712	.715
	EG	.100	.116	.080	.093	.174	.242	.293	.290	.288	.285
	ES	.472	.438	.463	.455	.377	.247	.041	.065	.024	-.01
UL = 7.16	EL	.418	.472	.501	.493	.491	.475	.601	.684	.702	.708
	EG	.119	.112	.075	.124	.116	.227	.239	.316	.298	.292
	ES	.463	.417	.423	.382	.393	.298	.111	.071	.018	-.03
UL = 8.35	EL	.465	.513	.532	.524	.511	.508	.519	.661	.702	.720
	EG	.093	.113	.098	.077	.134	.168	.293	.243	.298	.280
	ES	.442	.373	.370	.398	.355	.324	.138	.096	.034	.025
UL = 9.54	EL	.535	.551	.559	.554	.540	.524	.524	.573	.664	.707
	EG	.095	.102	.093	.086	.152	.179	.224	.238	.266	.293
	ES	.370	.347	.348	.361	.307	.297	.252	.189	.070	.020
UL = 10.74	EL	.753	.763	.747	.726	.715	.669	.539	.583	.624	.726
	EG	.069	.003	.032	.019	.045	.093	.168	.202	.239	.247
	ES	.178	.233	.221	.255	.240	.237	.244	.214	.137	.028
UL = 11.93	EL	.656	.709	.704	.696	.689	.648	.559	.571	.569	.602
	EG	.178	.073	.076	.065	.080	.141	.179	.189	.210	.279
	ES	.166	.218	.220	.238	.232	.212	.252	.239	.221	.119
UL = 5.96	EL	.536	.541	.544	.555	.541	.995	1.00	1.00	1.00	1.00
	EG	-.04	-.05	-.05	-.04	.004	.008	-.01	-.00	-.00	-.01
	ES	.500	.509	.503	.488	.455	-.00	-.00	.004	-.00	-.00

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G72A13 AB UG = 0.00											
UL = 7.16											
	EL	.613	.616	.725	.755	.589	.899	1.00	1.00	1.00	1.00
	EG	-.09	-.07	-.12	-.13	-.03	-.01	-.00	-.01	-.01	.000
	ES	.479	.451	.398	.380	.444	.110	.004	.003	-.00	-.01
UL = 8.35											
	EL	.626	.642	.645	.645	.637	.631	1.01	1.02	1.01	1.02
	EG	-.09	-.05	-.06	-.06	-.04	.039	-.01	-.02	-.01	-.02
	ES	.466	.410	.414	.419	.403	.330	-.01	.003	-.01	-.01
UL = 9.54											
	EL	.678	.884	.859	.873	.859	.738	1.02	1.02	1.01	1.01
	EG	-.09	-.17	-.16	-.17	-.15	-.09	-.03	-.02	-.01	-.01
	ES	.409	.288	.304	.293	.294	.353	.006	.003	.000	-.01
UL = 10.74											
	EL	.904	.719	.733	.794	.866	.767	.757	1.06	1.06	.997
	EG	-.19	-.06	-.07	-.11	-.14	-.10	.018	-.06	-.06	.003
	ES	.282	.337	.340	.313	.276	.330	.225	-.02	-.03	.001
UL = 11.93											
	EL	.935	.921	.921	.921	.921	.881	.794	1.06	1.06	1.01
	EG	-.20	-.16	-.16	-.17	-.16	-.14	-.08	-.11	-.06	-.01
	ES	.261	.237	.237	.247	.237	.265	.235	.046	-.03	-.00
G74G13 AB UG = 7.11											
UL = 3.58											
	EL	.338	.375	.407	.426	.396	.918	.899	.827	.830	.835
	EG	.150	.072	.089	.068	.188	.082	.101	.173	.170	.165
	ES	.512	.553	.505	.506	.416	-.03	-.01	.008	.011	.000
UL = 4.77											
	EL	.396	.486	.512	.252	.386	.782	.806	.816	.822	.819
	EG	.104	.055	.035	.195	.140	.162	.194	.184	.178	.181
	ES	.500	.460	.453	.554	.474	.056	.004	.022	.010	.002
UL = 5.96											
	EL	.437	.456	.458	.453	.448	.595	.358	.869	.874	.874
	EG	.088	.076	.089	.102	.100	.210	.142	.131	.126	.126
	ES	.475	.468	.452	.445	.452	.195	.007	-.02	-.03	-.01
G75G13 AB UG = 7.07											
UL = 7.16											
	EL	.540	.594	.587	.594	.587	.568	.801	.827	.824	.822
	EG	.024	.024	.033	.019	.043	.139	.162	.173	.176	.178
	ES	.436	.382	.381	.387	.371	.292	.037	.008	-.00	.016
UL = 8.35											
	EL	.639	.691	.647	.540	.634	.604	.647	.790	.824	.821
	EG	-.01	-.01	.019	.098	.031	.069	.136	.210	.176	.179
	ES	.372	.315	.334	.362	.335	.327	.167	.024	.004	.006
UL = 9.54											
	EL	.595	.621	.606	.580	.563	.548	.563	.709	.779	.786
	EG	.054	.073	.077	.076	.095	.146	.121	.207	.221	.214
	ES	.350	.306	.318	.344	.342	.306	.316	.085	.024	.016

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G76C13 AB	UG = 0.95										
UL = 3.58											
	EL	.492	.503	.405	.455	.910	1.02	1.02	.960	.952	.979
	EG	-.01	-.06	.026	-.00	-.01	-.02	-.02	.040	.048	.021
	ES	.519	.556	.570	.547	.104	-.02	-.03	.003	.006	-.01
UL = 4.77											
	EL	.568	.568	.538	.528	.533	.967	.965	.957	.957	.950
	EG	-.05	-.05	-.04	-.01	.097	.033	.035	.043	.043	.050
	ES	.478	.483	.501	.486	.370	.014	-.02	.014	.004	.007
UL = 5.96											
	EL	.609	.622	.602	.590	.592	.958	.915	.923	.933	.938
	EG	-.08	-.07	-.05	-.03	-.03	.034	.035	.077	.067	.062
	ES	.474	.444	.448	.438	.442	.009	.017	.024	.010	.007
UL = 7.16											
	EL	.554	.559	.554	.536	.531	.656	.903	.903	.900	.898
	EG	-.04	-.02	.002	.007	.014	.111	.097	.097	.100	.102
	ES	.485	.457	.444	.457	.454	.233	.033	.028	.024	.030
UL = 8.35											
	EL	.615	.648	.635	.620	.607	.599	.948	.945	.940	.943
	EG	-.06	-.04	-.02	-.02	-.01	.037	.034	.055	.060	.057
	ES	.444	.393	.388	.395	.401	.364	.018	.005	.017	.010
UL = 9.54											
	EL	.684	.692	.692	.668	.648	.645	.834	.946	.943	.948
	EG	-.07	-.05	-.04	-.02	-.03	-.01	.041	.054	.057	.052
	ES	.386	.359	.349	.349	.378	.364	.125	.014	.015	.002
UL = 10.74											
	EL	.735	.722	.704	.683	.683	.683	.673	.997	.948	.992
	EG	-.07	-.04	-.03	-.02	-.01	-.02	.009	.006	.052	.008
	ES	.336	.316	.329	.338	.328	.332	.319	-.00	.008	-.01
G77J13 AB	UG = 12.47										
UL = 2.39											
	EL	.317	.268	.224	.216	.281	.760	.750	.753	.745	.745
	EG	.148	.161	.171	.204	.371	.240	.240	.247	.255	.255
	ES	.535	.571	.605	.579	.348	.036	.009	.026	-.01	.009
UL = 3.58											
	EL	.371	.345	.317	.309	.315	.737	.749	.749	.749	.742
	EG	.118	.143	.148	.172	.243	.207	.251	.251	.251	.258
	ES	.511	.512	.534	.518	.442	.056	.019	.012	.017	.000
UL = 4.77											
	EL	.417	.391	.381	.381	.373	.609	.734	.747	.749	.737
	EG	.092	.147	.137	.108	.211	.243	.266	.253	.251	.263
	ES	.491	.462	.481	.511	.416	.148	.052	.014	-.00	.007
UL = 5.96											
	EL	.474	.467	.439	.439	.434	.505	.702	.742	.747	.740
	EG	.081	.114	.115	.100	.148	.250	.227	.258	.253	.260
	ES	.445	.419	.446	.461	.419	.245	.071	.011	.008	.011
UL = 7.16											
	EL	.499	.504	.486	.481	.473	.468	.628	.716	.727	.732
	EG	.081	.099	.089	.102	.130	.215	.258	.284	.273	.268
	ES	.420	.398	.425	.417	.396	.316	.104	.037	.032	.004

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G77J13 AB	UG = 12.47										
UL = 8.35											
	EL	.534	.547	.527	.519	.509	.501	.539	.682	.718	.728
	EG	.075	.094	.076	.115	.125	.157	.246	.256	.282	.272
	ES	.391	.359	.397	.366	.366	.342	.214	.062	.027	.011
UL = 9.54											
	EL	.644	.626	.593	.560	.547	.534	.517	.613	.695	.728
	EG	.034	.080	.084	.082	.104	.153	.198	.260	.259	.272
	ES	.322	.294	.323	.358	.349	.312	.286	.127	.047	.011
UL = 10.74											
	EL	.631	.639	.623	.593	.573	.562	.545	.542	.621	.705
	EG	.103	.078	.101	.098	.129	.138	.157	.235	.260	.295
	ES	.266	.283	.275	.309	.298	.300	.299	.223	.119	.042
UL = 11.93											
	EL	.597	.635	.630	.615	.590	.580	.567	.554	.557	.635
	EG	.231	.094	.102	.130	.115	.153	.159	.179	.247	.266
	ES	.172	.270	.267	.254	.295	.267	.274	.267	.196	.099
G79L13 AB	UG = 15.65										
UL = 2.39											
	EL	.299	.236	.216	.216	.259	.701	.706	.706	.701	.685
	EG	.192	.164	.220	.220	.324	.252	.294	.294	.299	.315
	ES	.509	.600	.565	.565	.417	.047	-.00	.037	.024	.009
UL = 3.58											
	EL	.369	.322	.304	.302	.292	.621	.636	.688	.688	.678
	EG	.153	.166	.175	.172	.261	.272	.314	.312	.312	.322
	ES	.478	.513	.520	.527	.447	.107	.037	.015	.010	.007
UL = 4.77											
	EL	.420	.381	.371	.373	.368	.498	.672	.694	.694	.682
	EG	.111	.152	.173	.152	.184	.285	.259	.306	.306	.318
	ES	.469	.467	.457	.475	.448	.218	.069	.022	.017	-.01
UL = 5.96											
	EL	.437	.419	.414	.419	.419	.432	.618	.672	.690	.680
	EG	.109	.136	.124	.136	.170	.286	.274	.328	.310	.320
	ES	.455	.445	.462	.445	.410	.282	.108	.042	.009	.022
UL = 7.16											
	EL	.450	.473	.473	.463	.463	.455	.532	.649	.677	.682
	EG	.115	.160	.091	.097	.161	.253	.281	.289	.323	.318
	ES	.435	.367	.436	.440	.376	.292	.187	.062	.025	.031
UL = 8.35											
	EL	.536	.528	.511	.504	.489	.477	.436	.602	.657	.674
	EG	.088	.134	.085	.123	.166	.201	.260	.280	.343	.326
	ES	.376	.337	.404	.373	.345	.323	.253	.117	.039	.014
UL = 9.54											
	EL	.614	.580	.553	.526	.516	.496	.491	.526	.627	.673
	EG	.058	.106	.111	.126	.151	.164	.237	.289	.311	.327
	ES	.328	.314	.336	.348	.333	.339	.271	.186	.062	.030
UL = 10.74											
	EL	.627	.603	.578	.559	.534	.529	.525	.522	.559	.637
	EG	.112	.113	.116	.117	.170	.161	.224	.217	.295	.291
	ES	.261	.285	.305	.324	.295	.309	.252	.261	.146	.072

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G79L13 AB UG = 15.65											
UL = 11.93											
	EL	.603	.594	.591	.576	.562	.542	.534	.534	.534	.562
	EG	.180	.157	.149	.122	.170	.174	.208	.215	.259	.296
	ES	.217	.249	.260	.301	.268	.284	.257	.251	.206	.142
G80B13 AB UG = 0.44											
UL = 4.77											
	EL	.474	.469	.459	.451	.459	.969	.974	.977	.977	.974
	EG	-.00	-.01	-.01	.000	.153	.031	.026	.023	.023	.026
	ES	.527	.541	.556	.549	.388	.019	.001	.005	.005	.006
UL = 5.96											
	EL	.516	.513	.510	.505	.503	.972	.977	.977	.979	.977
	EG	-.04	-.02	-.01	-.01	.025	.016	.023	.023	.021	.023
	ES	.529	.507	.503	.500	.472	.013	.005	.010	-.00	.005
UL = 7.16											
	EL	.563	.570	.568	.570	.573	.799	.987	.984	.987	.987
	EG	-.05	-.03	-.02	-.03	-.02	.036	.013	.016	.013	.013
	ES	.488	.462	.453	.462	.446	.165	.001	.002	.006	-.01
UL = 8.35											
	EL	.598	.608	.606	.608	.606	.606	.979	.982	.982	.979
	EG	-.06	-.02	-.02	-.03	-.02	.038	.017	.018	.018	.021
	ES	.465	.415	.416	.420	.416	.356	.004	.008	.008	-.00
UL = 9.54											
	EL	.655	.655	.657	.655	.655	.652	.941	.985	.987	.987
	EG	-.06	-.04	-.04	-.04	-.03	-.03	-.01	.015	.013	.013
	ES	.406	.380	.384	.380	.375	.376	.072	.012	.006	-.01
UL = 10.74											
	EL	.693	.693	.693	.693	.693	.693	.696	.995	.995	.995
	EG	-.05	-.04	-.04	-.04	-.04	-.04	.026	.008	.005	.005
	ES	.354	.348	.348	.348	.343	.348	.278	-.00	.002	-.00
UL = 11.93											
	EL	.739	.724	.724	.722	.722	.722	.722	.954	.980	.985
	EG	-.05	-.05	-.04	-.04	-.04	-.04	-.03	-.02	.020	.015
	ES	.314	.325	.320	.321	.321	.315	.312	.065	.009	.002
G82E13 AB UG = 3.58											
UL = 2.39											
	EL	.311	.282	.243	.256	.760	.820	.820	.828	.828	.833
	EG	.097	.109	.116	.153	.124	.180	.180	.172	.172	.167
	ES	.592	.609	.641	.591	.116	.009	.039	.017	.022	.022
UL = 3.58											
	EL	.387	.372	.361	.343	.408	.864	.869	.872	.872	.869
	EG	.061	.083	.089	.090	.221	.136	.131	.128	.128	.131
	ES	.552	.545	.549	.567	.371	.005	.017	.008	.008	.006
UL = 4.77											
	EL	.451	.435	.412	.402	.399	.845	.852	.850	.855	.860
	EG	.033	.058	.076	.096	.137	.132	.148	.150	.145	.140
	ES	.517	.507	.512	.502	.464	.024	.020	.017	.015	.005

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G82E13 AB	UG = 3.58										
UL = 5.96											
	EL	.486	.496	.470	.463	.457	.659	.832	.837	.835	.840
	EG	.020	.044	.068	.082	.085	.175	.168	.163	.165	.160
	ES	.494	.460	.462	.455	.458	.166	.023	.018	.019	.014
UL = 7.16											
	EL	.527	.547	.517	.506	.494	.486	.826	.826	.829	.829
	EG	.011	.000	.057	.082	.095	.195	.148	.174	.171	.171
	ES	.462	.452	.426	.411	.412	.319	.026	.033	.012	.029
UL = 8.35											
	EL	.569	.608	.585	.559	.546	.528	.769	.821	.818	.818
	EG	-.01	.021	.039	.063	.075	.096	.134	.179	.182	.182
	ES	.444	.371	.376	.378	.379	.376	.097	.020	.031	.018
UL = 9.54											
	EL	.580	.643	.620	.592	.577	.577	.562	.808	.803	.795
	EG	.022	.036	.049	.069	.068	.089	.106	.156	.197	.205
	ES	.398	.321	.331	.338	.355	.334	.332	.036	.023	.018
UL = 10.74											
	EL	.633	.661	.638	.623	.613	.606	.598	.598	.809	.802
	EG	.020	.041	.058	.067	.072	.088	.091	.160	.151	.198
	ES	.347	.298	.303	.310	.315	.306	.311	.242	.040	.025
UL = 11.93											
	EL	.693	.693	.681	.653	.646	.646	.631	.631	.704	.814
	EG	.020	.042	.059	.070	.059	.071	.078	.102	.145	.186
	ES	.286	.264	.260	.277	.295	.283	.291	.267	.151	.020
G85F13 AB	UG = 5.31										
UL = 2.39											
	EL	.309	.271	.258	.248	.633	.790	.792	.790	.790	.787
	EG	.112	.125	.112	.162	.204	.210	.208	.210	.210	.213
	ES	.580	.604	.630	.590	.163	.028	.026	.029	.034	.016
UL = 3.58											
	EL	.383	.356	.336	.331	.341	.832	.835	.835	.835	.835
	EG	.097	.117	.103	.121	.244	.168	.165	.165	.165	.165
	ES	.519	.527	.561	.548	.415	.019	.022	.034	-.01	.000
UL = 4.77											
	EL	.441	.416	.389	.386	.381	.787	.817	.817	.817	.817
	EG	.072	.098	.099	.110	.137	.169	.183	.183	.183	.183
	ES	.487	.486	.513	.504	.481	.044	.015	.017	.032	.013
UL = 5.96											
	EL	.468	.475	.448	.431	.428	.574	.800	.802	.802	.802
	EG	.057	.085	.080	.115	.106	.217	.200	.198	.198	.198
	ES	.475	.440	.472	.455	.466	.209	.028	.024	.019	.020
UL = 7.16											
	EL	.500	.542	.512	.498	.480	.473	.781	.788	.791	.788
	EG	-.00	.063	.079	.078	.097	.177	.163	.212	.209	.212
	ES	.502	.395	.409	.425	.423	.350	.056	.015	.024	.010
UL = 8.35											
	EL	.587	.619	.564	.550	.535	.512	.582	.782	.790	.792
	EG	-.01	.040	.070	.078	.086	.115	.228	.218	.210	.208
	ES	.422	.342	.366	.372	.379	.373	.191	.023	.039	.009

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G85F13 AB UG = 5.31											
UL = 9.54											
	EL	.649	.622	.598	.580	.578	.558	.548	.753	.778	.783
	EG	-.00	.048	.076	.086	.092	.105	.129	.197	.222	.217
	ES	.353	.330	.326	.334	.330	.337	.323	.050	.029	.013
UL = 10.74											
	EL	.695	.686	.624	.609	.607	.600	.532	.580	.744	.754
	EG	.026	.047	.066	.094	.100	.127	.115	.130	.187	.246
	ES	.278	.268	.310	.296	.293	.273	.302	.290	.069	.031
UL = 11.93											
	EL	.672	.674	.637	.591	.635	.618	.600	.596	.588	.743
	EG	.046	.063	.084	.134	.090	.122	.110	.136	.140	.222
	ES	.282	.263	.279	.275	.275	.260	.239	.268	.271	.036
G86H13 AB UG = 8.81											
UL = 2.39											
	EL	.317	.273	.237	.229	.424	.776	.780	.776	.776	.766
	EG	.121	.138	.139	.182	.301	.224	.220	.224	.224	.234
	ES	.562	.589	.624	.588	.275	.034	.005	.025	.006	.010
UL = 3.58											
	EL	.331	.329	.321	.314	.316	.771	.778	.775	.771	.766
	EG	.127	.152	.141	.130	.257	.198	.222	.225	.229	.234
	ES	.542	.520	.538	.556	.426	.031	.042	.001	.033	-.00
UL = 4.77											
	EL	.391	.381	.376	.374	.371	.716	.777	.779	.779	.782
	EG	.141	.118	.115	.132	.168	.193	.223	.221	.221	.218
	ES	.468	.501	.508	.495	.461	.091	.022	.014	.024	.019
UL = 5.96											
	EL	.445	.440	.435	.428	.428	.514	.764	.769	.781	.781
	EG	.091	.115	.097	.116	.126	.245	.236	.231	.219	.219
	ES	.465	.446	.467	.456	.446	.240	.033	.028	.023	.008
UL = 7.16											
	EL	.471	.490	.488	.476	.471	.459	.733	.776	.784	.779
	EG	.083	.116	.088	.114	.102	.195	.189	.224	.216	.221
	ES	.446	.394	.424	.410	.427	.346	.077	.010	.007	.025
UL = 8.35											
	EL	.566	.564	.530	.516	.511	.496	.607	.760	.772	.777
	EG	.044	.085	.079	.107	.095	.149	.209	.240	.228	.223
	ES	.390	.351	.391	.377	.394	.354	.135	.027	.032	.005
UL = 9.54											
	EL	.637	.623	.587	.561	.556	.544	.525	.683	.737	.761
	EG	.038	.082	.077	.111	.099	.128	.162	.226	.263	.239
	ES	.325	.295	.336	.328	.345	.328	.313	.091	.052	.007
UL = 10.74											
	EL	.630	.633	.623	.588	.573	.569	.555	.547	.687	.735
	EG	.110	.081	.082	.121	.124	.134	.141	.193	.233	.265
	ES	.259	.286	.295	.291	.303	.297	.305	.260	.079	.029
UL = 11.93											
	EL	.619	.634	.629	.619	.600	.586	.572	.565	.563	.655
	EG	.144	.110	.123	.113	.139	.140	.167	.158	.219	.250
	ES	.237	.256	.248	.267	.261	.274	.261	.277	.219	.096

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G87I13 AB UG = 10.54											
UL = 2.39											
	EL	.299	.249	.224	.216	.338	.759	.759	.754	.756	.751
	EG	.158	.117	.210	.190	.324	.241	.241	.246	.244	.249
	ES	.543	.634	.566	.594	.338	.011	.030	.011	.004	.006
UL = 3.58											
	EL	.361	.329	.315	.310	.312	.749	.763	.761	.754	.759
	EG	.117	.156	.125	.162	.245	.205	.237	.239	.246	.241
	ES	.522	.514	.560	.528	.443	.046	.033	.012	.015	.018
UL = 4.77											
	EL	.390	.388	.376	.366	.361	.683	.761	.761	.766	.756
	EG	.114	.144	.136	.136	.173	.212	.239	.239	.234	.244
	ES	.496	.469	.489	.498	.466	.105	.029	.022	.015	.014
UL = 5.96											
	EL	.417	.437	.427	.425	.420	.539	.733	.750	.750	.750
	EG	.119	.111	.112	.103	.131	.242	.267	.250	.250	.250
	ES	.463	.452	.461	.472	.449	.220	.032	.037	.022	.027
UL = 7.16											
	EL	.495	.505	.481	.481	.471	.466	.693	.749	.754	.754
	EG	.063	.103	.092	.092	.127	.222	.217	.251	.246	.246
	ES	.442	.392	.427	.427	.402	.312	.090	.037	.025	.000
UL = 8.35											
	EL	.564	.567	.535	.521	.516	.494	.552	.722	.746	.755
	EG	.072	.083	.096	.099	.112	.146	.244	.229	.254	.245
	ES	.364	.350	.369	.380	.372	.361	.204	.049	.019	.014
UL = 9.54											
	EL	.635	.613	.579	.553	.536	.524	.512	.625	.726	.733
	EG	.046	.082	.091	.101	.115	.129	.205	.243	.274	.267
	ES	.319	.305	.329	.346	.349	.347	.283	.132	.038	.024
UL = 10.74											
	EL	.674	.651	.628	.610	.577	.572	.559	.556	.654	.744
	EG	.072	.086	.094	.089	.142	.127	.154	.188	.252	.256
	ES	.254	.263	.278	.301	.281	.301	.287	.256	.094	.030
UL = 11.93											
	EL	.650	.626	.616	.596	.586	.571	.562	.562	.554	.626
	EG	.140	.110	.130	.136	.147	.153	.152	.180	.233	.261
	ES	.210	.265	.254	.268	.267	.276	.286	.258	.212	.114
G88M13 AB UG = 17.26											
UL = 1.19											
	EL	.185	.123	.118	.126	.433	.672	.677	.672	.664	.651
	EG	.208	.197	.299	.324	.360	.328	.323	.328	.336	.349
	ES	.607	.680	.583	.550	.207	.029	.016	.052	.021	-.00
UL = 2.39											
	EL	.298	.232	.219	.209	.245	.661	.686	.684	.686	.666
	EG	.152	.220	.188	.233	.376	.280	.314	.316	.314	.334
	ES	.550	.548	.593	.558	.379	.060	.057	.017	.011	.002
UL = 3.58											
	EL	.340	.302	.308	.310	.310	.557	.633	.670	.672	.665
	EG	.149	.191	.188	.197	.241	.297	.347	.330	.328	.335
	ES	.511	.506	.504	.493	.449	.146	.072	.013	.007	.002

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G88M13 AB UG = 17.26											
UL = 4.77											
	EL	.412	.383	.383	.380	.370	.496	.627	.652	.669	.662
	EG	.143	.146	.132	.158	.193	.296	.320	.348	.331	.338
	ES	.445	.471	.486	.462	.437	.208	.053	.056	.009	.014
UL = 5.96											
	EL	.429	.438	.429	.429	.416	.441	.586	.638	.655	.665
	EG	.147	.115	.131	.126	.192	.291	.322	.290	.345	.335
	ES	.424	.446	.441	.446	.392	.268	.092	.072	-.41	.472
UL = 7.16											
	EL	.483	.475	.471	.458	.449	.441	.515	.610	.654	.667
	EG	.090	.149	.097	.124	.174	.281	.285	.311	.346	.333
	ES	.427	.376	.432	.418	.378	.278	.200	.079	.045	.007
UL = 8.35											
	EL	.550	.523	.506	.496	.474	.462	.474	.564	.633	.655
	EG	.073	.127	.117	.098	.184	.224	.282	.312	.318	.345
	ES	.377	.349	.377	.406	.341	.314	.243	.124	.049	.028
UL = 9.54											
	EL	.602	.580	.555	.525	.517	.507	.498	.520	.592	.657
	EG	.085	.086	.120	.131	.150	.188	.239	.287	.301	.311
	ES	.313	.334	.326	.344	.332	.304	.264	.193	.107	.032
UL = 10.74											
	EL	.618	.611	.579	.555	.530	.521	.509	.511	.523	.596
	EG	.124	.118	.111	.139	.187	.181	.228	.248	.310	.298
	ES	.258	.271	.310	.306	.282	.298	.254	.241	.167	.106
UL = 11.93											
	EL	.554	.571	.571	.554	.542	.540	.520	.518	.518	.540
	EG	.207	.155	.140	.174	.161	.191	.211	.239	.308	.303
	ES	.239	.274	.289	.272	.297	.270	.269	.243	.174	.157
G13A16 IN UG = 0.00											
UL = 5.14											
	EL	.425	.462	.468	.451	.470	1.01	1.02	1.02	1.02	1.02
	EG	.043	-.02	-.05	-.01	-.02	-.05	-.02	-.02	-.02	-.02
	ES	.532	.555	.580	.554	.551	.047	-.02	-.01	-.00	-.01
UL = 5.87											
	EL	.503	.500	.503	.505	.511	.869	1.00	.997	.995	.989
	EG	.022	-.02	-.02	-.02	-.03	-.06	.000	.003	.005	.011
	ES	.476	.521	.520	.519	.516	.191	.000	.007	.008	.005
UL = 6.60											
	EL	.531	.536	.544	.550	.544	.584	.997	.997	.995	.992
	EG	.028	-.03	-.04	-.03	-.04	.032	.003	.003	.005	.008
	ES	.441	.494	.491	.477	.496	.384	.001	.007	.002	-.00
UL = 7.34											
	EL	.563	.569	.582	.585	.579	.587	.992	.997	.995	.992
	EG	.038	-.03	-.04	-.04	-.04	-.04	.010	.003	.005	.008
	ES	.399	.463	.457	.456	.464	.449	-.00	.007	.008	-.00
UL = 4.40											
	EL	.421	.440	.442	.416	.426	1.00	1.00	1.00	.997	.995
	EG	.028	-.01	-.02	.031	.014	.000	-.01	.000	.003	.005
	ES	.551	.570	.575	.553	.559	.000	-.00	-.01	.001	-.01

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G14D16 IN UG = 0.44											
UL = 5.14											
	EL	.444	.486	.478	.473	.507	.974	.984	.982	.974	.966
	EG	.038	-.02	-.03	-.01	-.04	-.02	.016	.018	.026	.034
	ES	.518	.533	.548	.533	.529	.050	.018	.003	.017	.009
UL = 5.87											
	EL	.465	.519	.519	.509	.509	.866	.979	.982	.974	.974
	EG	.048	-.03	-.02	-.02	-.02	-.05	.021	.018	.026	.026
	ES	.487	.507	.502	.506	.512	.181	.015	.008	.011	-.00
UL = 6.60											
	EL	.508	.564	.564	.551	.546	.577	.987	.985	.977	.974
	EG	.030	-.04	-.02	-.06	.003	.042	.013	.015	.023	.026
	ES	.462	.471	.460	.504	.451	.382	.017	-.00	.010	.005
UL = 7.34											
	EL	.537	.597	.617	.592	.584	.592	.985	.990	.982	.975
	EG	.042	-.04	-.04	-.03	-.04	-.03	.003	.010	.018	.025
	ES	.422	.445	.419	.442	.451	.442	.012	.004	.008	.005
G15E16 IN UG = 0.88											
UL = 4.40											
	EL	.415	.433	.425	.420	.435	.985	.977	.969	.964	.962
	EG	.048	.011	.015	.007	.015	.014	.023	.031	.036	.038
	ES	.537	.557	.560	.573	.550	.001	.005	.002	.005	-.00
UL = 5.14											
	EL	.451	.489	.479	.461	.534	.967	.980	.977	.962	.952
	EG	.045	-.01	-.00	.000	-.03	-.05	.020	.023	.038	.048
	ES	.504	.521	.525	.539	.495	.081	-.00	.005	.011	.002
UL = 5.87											
	EL	.476	.529	.499	.496	.511	.771	.973	.973	.963	.950
	EG	.036	-.02	.007	.009	-.01	-.01	.027	.027	.037	.050
	ES	.487	.492	.494	.495	.500	.235	.012	.007	.011	-.00
UL = 6.60											
	EL	.504	.565	.533	.533	.538	.563	.961	.951	.943	.939
	EG	.054	-.02	-.01	.016	-.01	.027	.039	.049	.057	.061
	ES	.442	.459	.479	.451	.471	.410	.012	.005	.014	.008
UL = 7.34											
	EL	.507	.583	.561	.570	.570	.568	.944	.937	.917	.915
	EG	.091	-.03	.000	-.01	-.02	-.01	.014	.063	.083	.085
	ES	.402	.446	.439	.435	.446	.441	.041	.011	.025	.019
G16F16 IN UG = 1.32											
UL = 4.40											
	EL	.398	.420	.430	.413	.417	.942	.939	.937	.934	.932
	EG	.052	.007	.018	.027	.030	.044	.051	.063	.066	.068
	ES	.550	.573	.552	.560	.552	.015	.016	.006	.007	.005
UL = 5.14											
	EL	.460	.506	.477	.460	.475	.918	.940	.925	.925	.918
	EG	.051	-.01	.003	.018	.004	-.03	.060	.075	.075	.082
	ES	.489	.507	.520	.522	.521	.108	.021	.016	.022	-.00

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G16F16 IN	UG = 1.32										
UL =	5.87										
	EL	.504	.547	.506	.499	.494	.561	.935	.914	.906	.909
	EG	.049	-.02	.014	.013	.015	.083	.065	.086	.094	.091
	ES	.448	.478	.480	.488	.491	.355	.018	.016	.025	.009
UL =	6.60										
	EL	.507	.564	.519	.521	.526	.531	.914	.898	.881	.886
	EG	.080	-.02	.018	.017	.009	.023	.064	.102	.119	.114
	ES	.413	.454	.463	.462	.465	.446	.021	.023	.036	.019
UL =	7.34										
	EL	.537	.594	.568	.577	.565	.577	.914	.907	.888	.879
	EG	.091	-.02	-.00	.002	.003	-.00	.003	.093	.112	.121
	ES	.372	.424	.436	.420	.431	.426	.082	.024	.033	.016
G17G16 IN	UG = 1.74										
UL =	4.40										
	EL	.422	.441	.422	.406	.409	.913	.916	.910	.905	.907
	EG	.050	.011	.039	.037	.035	.032	.084	.090	.095	.093
	ES	.528	.547	.539	.557	.556	.055	.015	.018	.020	.016
UL =	5.14										
	EL	.463	.493	.469	.450	.458	.867	.911	.905	.897	.886
	EG	.049	.005	.002	.057	.019	-.02	.039	.095	.103	.114
	ES	.488	.502	.530	.494	.523	.153	.023	.014	.029	.006
UL =	5.87										
	EL	.487	.545	.500	.481	.471	.492	.909	.896	.882	.874
	EG	.075	-.01	.034	.028	.028	.100	.091	.104	.118	.126
	ES	.438	.468	.466	.491	.501	.408	.018	.024	.030	.011
UL =	6.60										
	EL	.521	.563	.500	.518	.489	.489	.887	.897	.861	.847
	EG	.056	.010	.045	.035	.040	.040	.053	.103	.139	.153
	ES	.423	.427	.455	.447	.470	.470	.050	.023	.045	.017
UL =	7.34										
	EL	.550	.555	.486	.527	.519	.512	.784	.869	.853	.841
	EG	.040	.064	.059	.047	.040	.039	.043	.131	.147	.159
	ES	.410	.380	.455	.426	.441	.450	.173	.036	.048	.026
G18H16 IN	UG = 2.18										
UL =	3.67										
	EL	.384	.397	.387	.371	.376	.928	.923	.923	.918	.910
	EG	.077	.014	.053	.039	.103	.072	.077	.077	.082	.090
	ES	.539	.589	.560	.589	.521	.015	.007	.001	.003	.015
UL =	4.40										
	EL	.419	.431	.424	.416	.396	.916	.916	.911	.916	.909
	EG	.063	.017	.049	.036	.042	.030	.084	.089	.084	.091
	ES	.518	.552	.527	.547	.562	.054	.009	.012	.004	.015
UL =	5.14										
	EL	.455	.475	.455	.435	.432	.837	.899	.894	.889	.872
	EG	.048	.015	.037	.043	.044	-.00	.101	.106	.111	.128
	ES	.497	.510	.508	.522	.524	.167	.022	.008	.021	.031

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G18H16 IN UG = 2.18											
UL = 5.87											
	EL	.467	.494	.471	.467	.474	.864	.873	.864	.864	.864
	EG	.075	.032	.050	.047	.038	-.11	.127	.136	.136	.136
	ES	.458	.474	.478	.486	.488	.244	.034	.016	.033	.029
UL = 6.60											
	EL	.507	.596	.480	.488	.473	.475	.853	.848	.833	.821
	EG	.063	-.01	.067	.058	.060	.059	.032	.152	.167	.179
	ES	.429	.412	.452	.455	.467	.466	.065	.040	.035	.041
UL = 7.34											
	EL	.517	.606	.563	.546	.550	.543	.733	.839	.817	.808
	EG	.075	.003	.055	.042	.028	.055	.049	.161	.183	.192
	ES	.408	.391	.383	.412	.421	.402	.218	.049	.048	.041
G19I16 IN UG = 2.61											
UL = 3.67											
	EL	.391	.376	.371	.362	.381	.910	.913	.908	.903	.898
	EG	.067	.048	.061	.056	.100	.090	.087	.092	.097	.102
	ES	.542	.576	.567	.583	.518	.023	.017	.002	.015	.020
UL = 4.40											
	EL	.409	.428	.416	.409	.406	.904	.906	.904	.897	.882
	EG	.063	.030	.042	.052	.042	.037	.094	.096	.103	.118
	ES	.528	.542	.542	.540	.552	.059	.019	-.01	.018	.027
UL = 5.14											
	EL	.437	.451	.442	.427	.415	.840	.893	.885	.885	.883
	EG	.064	.034	.056	.047	.065	-.01	.107	.115	.115	.117
	ES	.499	.515	.503	.526	.520	.165	.025	.023	.017	.020
UL = 5.87											
	EL	.482	.520	.482	.461	.452	.459	.853	.865	.853	.851
	EG	.050	.018	.055	.062	.050	.113	.137	.135	.147	.149
	ES	.468	.462	.463	.478	.498	.429	.027	.021	.032	.022
UL = 6.60											
	EL	.519	.580	.465	.488	.467	.472	.826	.831	.822	.817
	EG	.063	.012	.098	.063	.064	.061	.036	.169	.178	.183
	ES	.419	.408	.437	.449	.469	.467	.088	.031	.046	.030
UL = 7.34											
	EL	.516	.586	.560	.544	.519	.514	.579	.816	.802	.800
	EG	.053	.020	.051	.048	.046	.087	.129	.184	.198	.200
	ES	.431	.394	.389	.407	.435	.399	.292	.054	.043	.044
G20J16 IN UG = 3.03											
UL = 3.67											
	EL	.369	.376	.367	.369	.393	.904	.909	.904	.900	.897
	EG	.085	.042	.064	.057	.105	.070	.091	.096	.100	.103
	ES	.546	.582	.569	.574	.502	.026	.002	.015	.006	.008
UL = 4.40											
	EL	.404	.420	.408	.399	.413	.891	.898	.898	.889	.875
	EG	.066	.046	.052	.068	.055	.033	.102	.102	.111	.125
	ES	.531	.535	.540	.533	.532	.076	.023	.001	.016	.017

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
---------- G20J16 IN	UG = 3.03 ----------										
UL =	5.14										
	EL	.446	.462	.446	.427	.423	.758	.880	.882	.864	.861
	EG	.064	.033	.064	.053	.055	.024	.120	.118	.136	.139
	ES	.490	.505	.490	.520	.522	.218	.025	.013	.016	.017
UL =	5.87										
	EL	.485	.499	.481	.453	.444	.453	.854	.860	.844	.847
	EG	.054	.046	.073	.055	.060	.127	.146	.140	.156	.153
	ES	.461	.455	.447	.492	.496	.420	.048	.012	.030	.024
UL =	6.60										
	EL	.503	.566	.476	.478	.467	.476	.793	.816	.823	.821
	EG	.066	.026	.070	.102	.075	.070	.076	.184	.177	.179
	ES	.431	.409	.454	.420	.458	.454	.131	.037	.051	.003
UL =	7.34										
	EL	.502	.589	.518	.507	.516	.502	.553	.790	.779	.776
	EG	.077	.029	.074	.091	.048	.088	.149	.210	.221	.224
	ES	.420	.382	.408	.402	.436	.409	.298	.065	.048	.042
---------- G21K16 IN	UG = 3.45 ----------										
UL =	3.67										
	EL	.392	.403	.392	.377	.383	.935	.941	.932	.921	.910
	EG	.067	.050	.061	.091	.060	.047	.059	.068	.079	.090
	ES	.542	.548	.547	.531	.556	.018	-.01	-.00	-.00	-.00
UL =	4.40										
	EL	.405	.416	.416	.403	.400	.901	.921	.923	.918	.910
	EG	.065	.047	.070	.072	.040	-.00	.079	.077	.082	.090
	ES	.530	.536	.514	.526	.560	.099	-.02	.001	-.00	-.00
UL =	5.14										
	EL	.448	.469	.445	.424	.426	.748	.901	.903	.903	.895
	EG	.058	.029	.065	.088	.025	.052	.099	.097	.097	.105
	ES	.494	.502	.490	.489	.548	.200	.022	.004	.009	-.00
UL =	5.87										
	EL	.471	.487	.469	.448	.442	.440	.856	.869	.869	.861
	EG	.067	.058	.085	.069	.072	.118	.097	.131	.131	.139
	ES	.462	.455	.446	.483	.486	.443	.047	.008	.019	.011
UL =	6.60										
	EL	.506	.552	.496	.483	.483	.478	.762	.811	.811	.816
	EG	.031	.044	.086	.093	.060	.096	.077	.189	.189	.184
	ES	.463	.404	.418	.423	.456	.425	.161	.040	.045	.025
UL =	7.34										
	EL	.495	.502	.495	.492	.488	.492	.538	.780	.773	.763
	EG	.109	.072	.109	.111	.086	.111	.124	.220	.227	.237
	ES	.396	.426	.396	.397	.427	.397	.338	.070	.045	.055
---------- G22L16 IN	UG = 3.86 ----------										
UL =	3.67										
	EL	.345	.358	.350	.345	.367	.892	.895	.890	.888	.885
	EG	.098	.069	.090	.098	.086	.071	.105	.110	.112	.115
	ES	.557	.573	.560	.557	.547	.037	.024	-.02	.022	.007

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G22L16 IN UG = 3.86											
UL = 4.40											
	EL	.371	.393	.383	.369	.371	.848	.880	.885	.877	.870
	EG	.095	.066	.099	.069	.078	.063	.120	.115	.123	.130
	ES	.534	.541	.517	.563	.551	.090	.026	.018	.010	.013
UL = 5.14											
	EL	.404	.431	.419	.407	.407	.676	.859	.874	.877	.864
	EG	.093	.056	.090	.064	.081	.075	.131	.126	.123	.136
	ES	.503	.513	.491	.529	.513	.249	.030	.017	.021	-.00
UL = 5.87											
	EL	.427	.441	.431	.429	.427	.434	.827	.846	.846	.836
	EG	.097	.106	.100	.079	.086	.110	.108	.154	.154	.164
	ES	.476	.453	.468	.492	.487	.456	.056	.013	.018	.009
UL = 6.60											
	EL	.464	.481	.467	.457	.438	.441	.709	.796	.806	.810
	EG	.104	.084	.097	.097	.113	.101	.107	.204	.194	.190
	ES	.432	.435	.436	.446	.449	.459	.135	.040	.020	.027
UL = 7.34											
	EL	.508	.559	.476	.471	.485	.469	.513	.762	.755	.767
	EG	.063	.062	.103	.139	.087	.107	.155	.238	.245	.233
	ES	.429	.378	.421	.390	.428	.424	.332	.072	.059	.027
G23M16 IN UG = 4.26											
UL = 3.67											
	EL	.365	.368	.361	.354	.365	.890	.888	.890	.883	.883
	EG	.093	.075	.095	.066	.109	.095	.112	.110	.117	.117
	ES	.542	.558	.544	.581	.525	.016	.011	.016	.013	.001
UL = 4.40											
	EL	.387	.394	.392	.380	.403	.853	.874	.879	.881	.876
	EG	.086	.082	.067	.079	.066	.060	.126	.121	.119	.124
	ES	.527	.524	.542	.541	.531	.087	.023	.015	-.00	.010
UL = 5.14											
	EL	.430	.435	.423	.419	.407	.709	.872	.884	.874	.860
	EG	.084	.054	.083	.068	.069	.062	.128	.116	.126	.140
	ES	.486	.511	.494	.513	.524	.229	.029	-.01	.017	.017
UL = 5.87											
	EL	.436	.436	.427	.432	.425	.436	.838	.850	.848	.843
	EG	.097	.103	.097	.089	.098	.114	.107	.150	.152	.157
	ES	.466	.461	.476	.479	.477	.450	.055	.017	.012	.013
UL = 6.60											
	EL	.455	.471	.446	.449	.449	.455	.686	.810	.815	.824
	EG	.109	.111	.103	.107	.113	.103	.108	.190	.185	.176
	ES	.436	.417	.451	.444	.439	.441	.206	.040	.032	.008
UL = 7.34											
	EL	.485	.544	.467	.472	.483	.481	.476	.764	.762	.773
	EG	.098	.093	.091	.128	.105	.123	.164	.236	.238	.227
	ES	.417	.363	.441	.401	.412	.397	.360	.077	.050	.018
UL = 5.14											
	EL	.425	.462	.468	.451	.470	1.01	1.02	1.02	1.02	1.02
	EG	.048	-.02	-.03	-.01	-.02	-.04	-.02	-.02	-.02	-.02
	ES	.527	.555	.563	.560	.545	.036	-.02	-.01	-.00	-.01

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G13A16 AB UG = 0.00											
UL = 5.87											
	EL	.503	.500	.503	.505	.511	.869	1.00	.997	.995	.989
	EG	.022	-.02	-.02	-.02	-.03	-.04	.000	.003	.005	.011
	ES	.476	.521	.520	.519	.522	.169	.000	.007	.008	-.00
UL = 6.60											
	EL	.531	.536	.544	.550	.544	.584	.997	.997	.995	.992
	EG	.023	-.03	-.04	-.04	-.04	.054	.003	.003	.005	.008
	ES	.447	.494	.491	.488	.491	.362	.001	.007	.002	.004
UL = 7.34											
	EL	.563	.569	.582	.585	.579	.587	.992	.997	.995	.992
	EG	.032	-.04	-.04	-.04	-.04	-.01	.004	.003	.005	.008
	ES	.404	.469	.457	.456	.464	.427	.004	.001	.013	-.00
G14D16 AB UG = 0.44											
UL = 4.40											
	EL	.421	.440	.442	.416	.426	1.00	1.00	1.00	.997	.995
	EG	.028	-.00	.000	.004	.048	.000	-.01	.000	.003	.005
	ES	.551	.565	.558	.581	.526	.000	-.00	-.01	.001	-.01
UL = 5.14											
	EL	.444	.486	.478	.473	.507	.974	.934	.982	.974	.966
	EG	.038	-.02	-.01	-.01	-.05	-.00	.016	.018	.026	.034
	ES	.518	.533	.537	.539	.541	.028	.007	.008	.006	.009
UL = 5.87											
	EL	.465	.519	.519	.509	.509	.866	.979	.982	.974	.974
	EG	.048	-.03	-.02	-.02	-.02	-.04	.021	.018	.026	.026
	ES	.487	.507	.496	.506	.506	.170	.015	.002	.011	.005
UL = 6.60											
	EL	.508	.564	.564	.551	.546	.577	.987	.985	.977	.974
	EG	.036	-.04	-.02	-.03	-.02	.058	.013	.015	.023	.026
	ES	.457	.471	.460	.476	.479	.365	.011	.001	.010	-.00
UL = 7.34											
	EL	.537	.597	.617	.592	.584	.592	.985	.990	.982	.975
	EG	.036	-.05	-.04	-.03	-.04	-.01	.008	.010	.018	.025
	ES	.427	.451	.419	.436	.456	.419	.007	.004	.008	.005
G15E16 AB UG = 0.88											
UL = 4.40											
	EL	.415	.433	.425	.420	.435	.985	.977	.969	.964	.962
	EG	.043	.005	.004	.012	.048	.008	.023	.031	.036	.038
	ES	.542	.562	.571	.568	.517	.007	-.01	.002	-.00	-.00
UL = 5.14											
	EL	.451	.489	.479	.461	.534	.967	.980	.977	.962	.952
	EG	.045	-.01	-.01	.006	-.05	-.01	.020	.023	.038	.048
	ES	.504	.521	.531	.533	.512	.042	.009	.010	.006	-.02
UL = 5.87											
	EL	.476	.529	.499	.496	.511	.771	.973	.973	.963	.950
	EG	.036	-.02	.013	.003	-.01	.017	.027	.027	.037	.050
	ES	.487	.492	.489	.501	.500	.213	.012	.012	.005	-.00

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G15E16 AB	UG = 0.88										
UL = 6.60											
	EL	.504	.565	.533	.533	.538	.563	.961	.951	.943	.939
	EG	.043	-.02	.005	-.00	-.01	.049	.039	.049	.057	.061
	ES	.453	.459	.462	.468	.471	.388	.012	.016	.008	.002
UL = 7.34											
	EL	.507	.583	.561	.570	.570	.568	.944	.937	.917	.915
	EG	.086	-.02	-.06	.039	-.02	-.02	.037	.063	.083	.085
	ES	.407	.440	.494	.390	.446	.447	.019	.011	.020	.019
G16F16 AB	UG = 1.32										
UL = 4.40											
	EL	.398	.420	.430	.413	.417	.942	.939	.937	.934	.932
	EG	.047	.023	.007	.033	.047	.038	.051	.063	.066	.068
	ES	.555	.557	.564	.554	.536	.020	.010	.006	.012	.005
UL = 5.14											
	EL	.460	.506	.477	.460	.475	.918	.940	.925	.925	.918
	EG	.051	-.02	.003	.012	.004	.001	.060	.075	.075	.082
	ES	.489	.519	.520	.528	.521	.081	.010	.016	.011	.011
UL = 5.87											
	EL	.504	.547	.506	.499	.494	.561	.935	.914	.906	.909
	EG	.054	-.02	.009	.013	.015	.106	.065	.086	.094	.091
	ES	.442	.478	.485	.488	.491	.333	.018	.027	.014	.002
UL = 6.60											
	EL	.507	.564	.519	.521	.526	.531	.914	.898	.881	.886
	EG	.075	-.01	.018	.011	.009	.039	.070	.102	.119	.114
	ES	.418	.448	.463	.467	.465	.430	.016	.029	.036	.019
UL = 7.34											
	EL	.537	.594	.568	.577	.565	.577	.914	.907	.888	.879
	EG	.086	-.02	-.00	.002	.003	-.00	.020	.093	.112	.121
	ES	.377	.424	.436	.420	.431	.426	.066	.019	.033	.016
G17G16 AB	UG = 1.74										
UL = 4.40											
	EL	.422	.441	.422	.406	.409	.913	.916	.910	.905	.907
	EG	.050	.011	.033	.037	.041	.049	.084	.090	.095	.093
	ES	.528	.547	.545	.557	.551	.039	.021	.012	.020	.009
UL = 5.14											
	EL	.463	.493	.469	.450	.458	.867	.911	.905	.897	.886
	EG	.049	.005	.018	.023	.019	.002	.089	.095	.103	.114
	ES	.488	.502	.513	.527	.523	.131	.012	.025	.018	.012
UL = 5.87											
	EL	.487	.545	.500	.481	.471	.492	.909	.896	.882	.874
	EG	.064	-.01	-.05	.095	.034	.122	.091	.104	.118	.126
	ES	.449	.462	.549	.424	.495	.386	.024	.024	.024	.011
UL = 6.60											
	EL	.521	.563	.500	.518	.489	.489	.887	.897	.861	.847
	EG	.050	-.00	.045	.018	.046	.046	.080	.103	.139	.153
	ES	.429	.438	.455	.463	.465	.465	.034	.023	.040	.023

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G17G16 AB UG = 1.74											
UL = 7.34											
	EL	.550	.555	.486	.527	.519	.512	.784	.869	.853	.841
	EG	.040	.042	.059	.041	.046	.044	.059	.131	.147	.159
	ES	.410	.402	.455	.432	.435	.444	.157	.047	.032	.026
G18H16 AB UG = 2.18											
UL = 3.67											
	EL	.384	.397	.387	.371	.376	.928	.923	.923	.918	.910
	EG	.066	.031	.036	.034	.136	.072	.077	.077	.082	.090
	ES	.550	.572	.577	.595	.487	.010	.001	.012	.003	.008
UL = 4.40											
	EL	.419	.431	.424	.416	.396	.916	.916	.911	.916	.909
	EG	.046	.039	.032	.036	.048	.063	.084	.089	.084	.091
	ES	.535	.529	.544	.547	.556	.020	.015	.012	.004	.009
UL = 5.14											
	EL	.455	.475	.455	.435	.432	.837	.899	.894	.889	.872
	EG	.054	.020	.026	.048	.033	.024	.101	.106	.111	.128
	ES	.491	.505	.519	.517	.535	.139	.017	.013	.016	.019
UL = 5.87											
	EL	.467	.494	.471	.467	.474	.864	.873	.864	.864	.864
	EG	.081	.021	.045	.042	.043	-.08	.127	.136	.136	.136
	ES	.453	.485	.484	.492	.483	.221	.034	.022	.027	.016
UL = 6.60											
	EL	.507	.596	.480	.488	.473	.475	.853	.848	.833	.821
	EG	.075	-.00	.051	.058	.055	.059	.104	.152	.167	.179
	ES	.418	.407	.469	.455	.472	.466	.043	.034	.029	.048
UL = 7.34											
	EL	.517	.606	.563	.546	.550	.543	.733	.839	.817	.808
	EG	.058	.003	.055	.037	.028	.043	.076	.161	.183	.192
	ES	.425	.391	.383	.418	.421	.413	.190	.044	.042	.047
G19I16 AB UG = 2.61											
UL = 3.67											
	EL	.391	.376	.371	.362	.381	.910	.913	.908	.903	.898
	EG	.073	.042	.050	.056	.128	.090	.037	.092	.097	.102
	ES	.536	.582	.578	.583	.491	.018	.005	.008	.004	.007
UL = 4.40											
	EL	.409	.428	.416	.409	.406	.904	.906	.904	.897	.882
	EG	.063	.036	.042	.035	.048	.059	.094	.096	.103	.118
	ES	.528	.537	.542	.556	.546	.037	.008	-.00	.007	.027
UL = 5.14											
	EL	.437	.451	.442	.427	.415	.840	.893	.885	.885	.883
	EG	.064	.034	.045	.047	.059	.017	.107	.115	.115	.117
	ES	.499	.515	.514	.526	.526	.143	.014	.017	.006	.007
UL = 5.87											
	EL	.482	.520	.482	.461	.452	.459	.853	.865	.853	.851
	EG	.061	.018	.044	.050	.050	.140	.137	.135	.147	.149
	ES	.457	.462	.474	.489	.498	.401	.033	.010	.026	.022

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G19I16 AB UG = 2.61											
UL =	6.60										
	EL	.519	.580	.465	.488	.467	.472	.826	.831	.822	.817
	EG	.057	.018	.076	.069	.058	.061	.113	.169	.178	.183
	ES	.424	.403	.459	.443	.475	.467	.060	.031	.040	.037
UL =	7.34										
	EL	.516	.586	.560	.544	.519	.514	.579	.816	.802	.800
	EG	.064	.014	.051	.043	.052	.049	.179	.184	.198	.200
	ES	.420	.400	.389	.413	.430	.437	.242	.059	.032	.032
G20J16 AB UG = 3.03											
UL =	3.67										
	EL	.369	.376	.367	.369	.393	.904	.909	.904	.900	.897
	EG	.096	.037	.070	.057	.133	.070	.091	.096	.100	.103
	ES	.535	.587	.564	.574	.475	.026	.024	.004	.006	.001
UL =	4.40										
	EL	.404	.420	.408	.399	.413	.891	.898	.898	.889	.875
	EG	.060	.034	.058	.052	.055	.072	.102	.102	.111	.125
	ES	.536	.546	.534	.549	.532	.037	.018	.012	.005	.011
UL =	5.14										
	EL	.446	.462	.446	.427	.423	.758	.880	.882	.864	.861
	EG	.059	.033	.053	.053	.061	.057	.120	.118	.136	.139
	ES	.495	.505	.501	.520	.517	.185	.020	.013	.022	.017
UL =	5.87										
	EL	.485	.499	.481	.453	.444	.453	.854	.860	.844	.847
	EG	.070	.040	.051	.066	.054	.138	.146	.140	.156	.153
	ES	.445	.461	.469	.481	.502	.409	.032	.023	.019	.024
UL =	6.60										
	EL	.503	.566	.476	.478	.467	.476	.793	.816	.823	.821
	EG	.055	.037	.081	.080	.069	.070	.099	.184	.177	.179
	ES	.442	.398	.443	.442	.464	.454	.108	.032	.029	.029
UL =	7.34										
	EL	.502	.589	.518	.507	.516	.502	.553	.790	.779	.776
	EG	.111	.018	.063	.075	.075	.066	.171	.210	.221	.224
	ES	.387	.393	.419	.418	.409	.431	.276	.065	.032	.042
G21K16 AB UG = 3.45											
UL =	3.67										
	EL	.392	.403	.392	.377	.383	.935	.941	.932	.921	.910
	EG	.084	.038	.050	.053	.116	.047	.059	.068	.079	.090
	ES	.525	.559	.558	.570	.501	.018	-.01	-.03	-.00	-.00
UL =	4.40										
	EL	.405	.416	.416	.403	.400	.901	.921	.923	.918	.910
	EG	.059	.047	.059	.072	.040	.049	.079	.077	.082	.090
	ES	.535	.536	.525	.526	.560	.049	-.00	.001	-.00	-.01
UL =	5.14										
	EL	.448	.469	.445	.424	.426	.748	.901	.903	.903	.895
	EG	.058	.024	.065	.077	.036	.068	.099	.097	.097	.105
	ES	.494	.507	.490	.500	.537	.184	.022	-.00	-.01	-.00

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
---- G21K16 AB					UG = 3.45 ----						
UL = 5.87											
	EL	.471	.487	.469	.448	.442	.440	.856	.869	.869	.861
	EG	.084	.047	.074	.074	.066	.140	.097	.131	.131	.139
	ES	.445	.466	.457	.478	.491	.420	.047	.003	.008	.023
UL = 6.60											
	EL	.506	.552	.496	.483	.483	.478	.752	.811	.811	.816
	EG	.075	.033	.081	.066	.077	.080	.094	.189	.189	.184
	ES	.419	.415	.423	.451	.440	.442	.144	.034	.017	.031
UL = 7.34											
	EL	.495	.502	.495	.492	.488	.492	.538	.780	.773	.763
	EG	.126	.083	.104	.066	.102	.127	.130	.220	.227	.237
	ES	.379	.415	.401	.441	.410	.380	.333	.064	.040	.048
---- G22L16 AB					UG = 3.86 ----						
UL = 3.67											
	EL	.345	.358	.350	.345	.367	.892	.895	.890	.888	.885
	EG	.093	.080	.079	.082	.114	.088	.105	.110	.112	.115
	ES	.562	.562	.571	.573	.519	.020	.030	-.00	-.01	.007
UL = 4.40											
	EL	.371	.393	.383	.369	.371	.848	.880	.885	.877	.870
	EG	.084	.072	.066	.085	.078	.074	.120	.115	.123	.130
	ES	.545	.535	.551	.546	.551	.079	.009	.007	.005	.020
UL = 5.14											
	EL	.404	.431	.419	.407	.407	.676	.869	.874	.877	.864
	EG	.082	.062	.068	.064	.081	.092	.131	.126	.123	.136
	ES	.514	.507	.513	.529	.513	.233	.030	.011	-.00	.009
UL = 5.87											
	EL	.427	.441	.431	.429	.427	.434	.827	.846	.846	.836
	EG	.103	.067	.100	.090	.092	.132	.119	.154	.154	.164
	ES	.471	.492	.468	.481	.482	.434	.055	.024	-.00	.016
UL = 6.60											
	EL	.464	.481	.467	.457	.438	.441	.709	.796	.806	.810
	EG	.104	.067	.097	.091	.096	.106	.135	.204	.194	.190
	ES	.432	.452	.436	.451	.465	.453	.157	.051	.014	.027
UL = 7.34											
	EL	.508	.559	.476	.471	.485	.469	.513	.762	.755	.767
	EG	.107	.040	.103	.117	.093	.102	.155	.238	.245	.233
	ES	.384	.401	.421	.412	.423	.430	.332	.061	.042	.034
---- G23M16 AB					UG = 4.26 ----						
UL = 3.67											
	EL	.365	.368	.361	.354	.365	.890	.888	.890	.883	.883
	EG	.081	.102	.084	.055	.126	.089	.112	.110	.117	.117
	ES	.553	.530	.555	.592	.509	.021	.011	.004	-.01	.008
UL = 4.40											
	EL	.387	.394	.392	.380	.403	.853	.874	.879	.881	.876
	EG	.081	.077	.072	.068	.083	.076	.126	.121	.119	.124
	ES	.533	.529	.536	.552	.514	.071	.034	-.01	.014	.004

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
G23M16 AB	UG = 4.26										
UL = 5.14											
	EL	.430	.435	.423	.419	.407	.709	.872	.884	.874	.860
	EG	.079	.059	.055	.074	.075	.090	.128	.116	.126	.140
	ES	.491	.506	.522	.507	.518	.201	.029	.002	.006	.005
UL = 5.87											
	EL	.436	.436	.427	.432	.425	.436	.838	.850	.848	.843
	EG	.086	.097	.091	.089	.098	.131	.123	.150	.152	.157
	ES	.477	.466	.481	.479	.477	.433	.038	.017	.001	.032
UL = 6.60											
	EL	.455	.471	.446	.449	.449	.455	.686	.810	.815	.824
	EG	.120	.083	.103	.107	.096	.115	.125	.190	.185	.176
	ES	.425	.445	.451	.444	.455	.430	.139	.018	.021	.021
UL = 7.34											
	EL	.485	.544	.467	.472	.483	.481	.476	.764	.762	.773
	EG	.092	.104	.086	.122	.094	.134	.131	.236	.238	.227
	ES	.422	.352	.447	.406	.423	.386	.343	.066	.050	.037
P12A13 IN	UG = 0.00										
UL = 2.39											
	EL	.561	.569	.561	.564	1.02	1.02	1.02	1.02	1.01	1.01
	EG	-.02	-.01	-.02	.010	-.00	-.00	-.01	-.00	-.00	.008
	ES	.463	.440	.456	.426	-.01	-.01	-.00	-.02	-.01	-.02
UL = 3.58											
	EL	.679	.679	.677	.671	.704	1.01	1.01	1.01	1.01	1.00
	EG	-.03	-.02	.012	-.04	.008	-.01	-.00	.008	-.02	.020
	ES	.350	.337	.312	.373	.289	.003	-.01	-.02	.012	-.02
UL = 4.77											
	EL	.801	.772	.766	.763	.763	.782	1.01	1.01	1.01	1.00
	EG	-.02	-.01	-.01	-.03	-.03	.014	-.00	-.01	-.01	.020
	ES	.221	.241	.245	.266	.266	.204	-.01	.003	.003	-.02
UL = 5.96											
	EL	.887	.845	.842	.836	.836	.839	.836	1.00	1.00	1.00
	EG	.004	-.03	-.00	-.05	-.00	-.02	-.01	.000	-.02	.030
	ES	.108	.188	.162	.214	.167	.184	.177	-.00	.017	-.03
UL = 7.16											
	EL	.935	.922	.919	.914	.911	.911	.906	.906	.901	1.01
	EG	.023	-.03	-.01	-.04	-.02	.004	-.04	-.01	-.05	.038
	ES	.042	.104	.087	.129	.113	.085	.138	.108	.150	-.05
UL = 8.35											
	EL	.947	.952	.950	.947	.947	.944	.942	.939	.936	.936
	EG	.034	-.03	-.01	-.04	-.01	-.03	.009	-.05	-.04	.040
	ES	.019	.078	.062	.092	.064	.086	.049	.108	.101	.024
P13B13 IN	UG = 0.44										
UL = 2.39											
	EL	.531	.542	.555	.565	.974	.971	.969	.966	.966	.945
	EG	-.01	.004	.021	.029	.004	.014	.005	.015	.024	.018
	ES	.475	.454	.424	.406	.022	.015	.026	.019	.010	.036

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P13B13 IN UG = 0.44											
UL =	3.58										
	EL	.720	.737	.751	.737	.720	1.04	1.05	1.05	1.05	1.04
	EG	-.04	-.02	.001	-.01	.005	-.01	.003	.002	.002	.004
	ES	.315	.279	.249	.270	.275	-.04	-.05	-.05	-.05	-.05
UL =	4.77										
	EL	.811	.843	.827	.808	.808	.789	.987	.995	1.00	.997
	EG	-.02	-.03	-.01	.001	-.01	.003	.002	.001	.009	.100
	ES	.212	.190	.184	.191	.200	.207	.011	.005	-.01	-.10
UL =	5.96										
	EL	.863	.903	.900	.889	.874	.863	.853	.874	.989	.992
	EG	.008	-.02	-.00	-.00	-.01	.002	-.03	-.01	.002	.011
	ES	.129	.120	.104	.112	.135	.135	.173	.135	.009	-.00
UL =	7.16										
	EL	.916	.934	.934	.929	.929	.929	.929	.929	.927	.908
	EG	.013	-.01	-.01	.001	-.01	.001	-.02	-.01	-.03	.004
	ES	.071	.074	.074	.069	.079	.070	.089	.079	.100	.088
P14C13 IN UG = 0.93											
UL =	1.19										
	EL	.439	.420	.404	.872	.957	.963	.960	.960	.963	.963
	EG	.060	.042	.082	.020	.025	.035	.035	.034	.034	.046
	ES	.501	.538	.514	.108	.017	.003	.005	.006	.003	-.01
UL =	2.39										
	EL	.542	.558	.566	.563	.944	.963	.966	.966	.960	.958
	EG	.018	.021	.038	.048	.009	.044	.025	.034	.034	.056
	ES	.440	.421	.396	.388	.047	-.01	.010	.001	.005	-.01
UL =	3.58										
	EL	.654	.712	.712	.707	.707	.937	.950	.958	.960	.960
	EG	-.01	-.00	.025	.007	.035	.019	.037	.035	.034	.036
	ES	.358	.291	.262	.286	.257	.044	.013	.007	.005	.004
UL =	4.77										
	EL	.761	.813	.811	.792	.784	.784	.824	.916	.961	.950
	EG	-.02	.010	.020	.032	.005	.014	.047	.022	.015	.038
	ES	.255	.177	.170	.176	.211	.202	.130	.062	.024	.012
UL =	5.96										
	EL	.851	.886	.883	.875	.870	.870	.870	.864	.883	.936
	EG	.010	.008	.009	.029	.020	.010	.030	.002	.018	.020
	ES	.139	.106	.108	.096	.110	.120	.101	.134	.099	.044
P15D13 IN UG = 1.77											
UL =	1.19										
	EL	.449	.423	.418	.755	.916	.932	.935	.935	.930	.927
	EG	.084	.079	.089	.047	.013	.107	.049	.057	.048	.061
	ES	.466	.498	.493	.198	.071	-.04	.016	.008	.022	.012
UL =	2.39										
	EL	.547	.573	.581	.646	.820	.906	.919	.927	.924	.922
	EG	.043	.037	.064	.054	.037	.034	.051	.058	.068	.062
	ES	.410	.390	.355	.300	.143	.060	.020	.015	.007	.016

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P15D13 IN UG = 1.77											
UL = 2.98											
	EL	.568	.643	.661	.714	.784	.885	.896	.932	.943	.943
	EG	.014	.008	.061	.035	.052	.046	.045	.057	.065	.059
	ES	.418	.349	.277	.252	.164	.068	.059	.010	-.01	-.00
UL = 3.58											
	EL	.644	.702	.707	.733	.743	.775	.853	.898	.929	.940
	EG	-.02	.008	.064	.022	.077	.054	.052	.053	.039	.059
	ES	.380	.290	.229	.245	.180	.171	.095	.049	.032	.001
UL = 4.77											
	EL	.770	.836	.817	.815	.817	.815	.836	.875	.922	.935
	EG	-.02	.006	.028	.019	.037	.028	.054	.029	.050	.050
	ES	.247	.158	.155	.166	.145	.157	.110	.097	.029	.015
P16E13 IN UG = 3.51											
UL = 1.19											
	EL	.451	.448	.549	.717	.772	.852	.879	.893	.896	.898
	EG	.084	.113	.069	.043	.101	.100	.037	.101	.091	.115
	ES	.465	.439	.381	.240	.127	.049	.034	.006	.013	-.01
UL = 2.39											
	EL	.527	.605	.632	.720	.742	.796	.833	.868	.879	.890
	EG	-.02	.014	.075	.099	.049	.089	.113	.077	.094	.107
	ES	.492	.382	.293	.180	.209	.115	.053	.055	.027	.004
UL = 2.98											
	EL	.590	.646	.649	.691	.729	.763	.803	.838	.864	.875
	EG	-.03	.035	.101	.076	.108	.084	.069	.081	.087	.099
	ES	.438	.318	.250	.233	.164	.152	.128	.081	.049	.026
UL = 3.58											
	EL	.657	.705	.697	.715	.745	.763	.798	.822	.856	.872
	EG	-.04	.017	.084	.100	.086	.084	.099	.074	.079	.109
	ES	.382	.278	.219	.184	.169	.152	.103	.104	.065	.018
UL = 4.77											
	EL	.760	.815	.810	.797	.786	.786	.789	.799	.799	.815
	EG	-.02	.094	.057	.088	.061	.100	.071	.106	.097	.108
	ES	.255	.090	.133	.115	.153	.114	.140	.094	.104	.077
P17F13 IN UG = 5.27											
UL = 1.19											
	EL	.464	.436	.580	.668	.722	.768	.812	.825	.838	.838
	EG	.069	.115	.083	.117	.156	.142	.097	.140	.157	.145
	ES	.467	.450	.337	.216	.123	.090	.091	.035	.006	.018
UL = 2.39											
	EL	.588	.601	.627	.660	.696	.744	.775	.795	.813	.831
	EG	.050	.080	.104	.109	.150	.116	.103	.135	.142	.146
	ES	.362	.319	.269	.231	.154	.139	.122	.070	.045	.023
UL = 2.98											
	EL	.660	.665	.668	.678	.701	.713	.746	.774	.792	.815
	EG	-.03	.089	.042	.134	.140	.092	.146	.129	.107	.128
	ES	.366	.246	.291	.188	.159	.195	.108	.097	.101	.057

Table 13 (continued)

UL		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P17F13 IN UG = 5.27											
UL = 3.58	EL	.644	.710	.710	.700	.707	.720	.740	.756	.776	.784
	EG	.042	.110	.120	.084	.111	.110	.118	.132	.119	.193
	ES	.315	.180	.170	.217	.182	.170	.142	.113	.105	.024
UL = 4.18	EL	.764	.764	.736	.736	.726	.734	.734	.751	.756	.766
	EG	.036	.149	.069	.116	.089	.128	.177	.114	.103	.116
	ES	.200	.087	.195	.148	.185	.139	.089	.135	.140	.118
UL = 4.77	EL	.832	.827	.794	.774	.769	.759	.751	.744	.749	.741
	EG	.039	.092	.069	.110	.130	.037	.253	.124	.133	.119
	ES	.129	.080	.136	.116	.101	.204	-.00	.132	.119	.139
P22G13 IN UG = 7.09											
UL = 1.19	EL	.426	.426	.563	.676	.720	.761	.802	.816	.830	.827
	EG	.127	.088	.124	.144	.118	.162	.138	.160	.167	.186
	ES	.447	.486	.313	.180	.162	.077	.060	.024	.003	-.01
UL = 1.79	EL	.464	.499	.600	.656	.685	.723	.768	.771	.795	.819
	EG	.069	.096	.118	.175	.114	.139	.123	.158	.182	.197
	ES	.467	.406	.282	.169	.200	.138	.109	.072	.023	-.02
UL = 2.39	EL	.532	.568	.629	.642	.684	.718	.737	.761	.779	.797
	EG	.059	.094	.095	.149	.152	.140	.138	.140	.138	.241
	ES	.410	.337	.276	.209	.164	.142	.125	.099	.084	-.04
UL = 2.98	EL	.584	.631	.647	.665	.686	.707	.728	.749	.764	.775
	EG	.064	.123	.082	.136	.152	.122	.178	.152	.130	.194
	ES	.352	.247	.271	.199	.162	.171	.094	.100	.105	.031
UL = 3.58	EL	.686	.686	.691	.701	.701	.701	.706	.727	.740	.745
	EG	.100	.105	.085	.159	.131	.123	.172	.108	.153	.169
	ES	.214	.210	.224	.140	.168	.176	.122	.165	.107	.086
UL = 4.77	EL	.792	.790	.777	.753	.738	.732	.722	.722	.722	.719
	EG	.097	.136	.110	.141	.134	.166	.159	.127	.127	.193
	ES	.111	.075	.114	.105	.128	.101	.109	.151	.151	.088
P23H13 IN UG = 8.86											
UL = 1.19	EL	.426	.431	.541	.619	.655	.713	.736	.754	.769	.764
	EG	.127	.115	.099	.228	.128	.217	.167	.179	.205	.236
	ES	.447	.453	.361	.153	.217	.069	.097	.067	.026	.000
UL = 1.79	EL	.483	.509	.590	.618	.659	.687	.707	.733	.740	.756
	EG	.066	.170	.072	.200	.212	.164	.142	.229	.172	.237
	ES	.450	.322	.337	.182	.129	.149	.150	.038	.088	.007

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P23H13 IN UG = 8.86											
UL = 2.39											
	EL	.576	.579	.612	.645	.665	.678	.706	.726	.744	.744
	EG	.065	.112	.116	.186	.193	.146	.191	.164	.190	.219
	ES	.359	.310	.272	.169	.142	.177	.103	.110	.066	.038
UL = 2.98											
	EL	.633	.628	.622	.643	.656	.668	.686	.702	.712	.638
	EG	.056	.132	.152	.158	.194	.186	.165	.168	.185	.215
	ES	.311	.240	.225	.199	.150	.146	.149	.130	.103	.147
UL = 3.50											
	EL	.718	.700	.685	.672	.674	.685	.695	.705	.723	.721
	EG	.082	.150	.124	.182	.116	.174	.144	.177	.165	.232
	ES	.200	.150	.192	.146	.210	.142	.161	.118	.112	.047
UL = 4.77											
	EL	.801	.789	.759	.781	.734	.716	.719	.704	.692	.682
	EG	.096	.145	.169	.118	.201	.217	.131	.196	.151	.178
	ES	.103	.066	.072	.101	.065	.067	.150	.100	.158	.140
P24I13 IN UG = 10.88											
UL = 1.19											
	EL	.418	.431	.524	.582	.610	.622	.640	.670	.788	.725
	EG	.154	.106	.186	.196	.201	.174	.221	.230	.221	.262
	ES	.427	.463	.290	.222	.189	.204	.139	.100	-.01	.013
UL = 1.79											
	EL	.490	.515	.558	.619	.644	.672	.684	.720	.725	.722
	EG	.104	.121	.143	.172	.234	.185	.214	.175	.193	.252
	ES	.406	.363	.299	.210	.122	.143	.102	.105	.082	.026
UL = 2.39											
	EL	.524	.564	.602	.632	.637	.665	.683	.695	.700	.710
	EG	.151	.057	.108	.151	.244	.273	.175	.188	.168	.254
	ES	.325	.378	.290	.217	.119	.062	.142	.117	.131	.036
UL = 2.98											
	EL	.627	.608	.627	.633	.648	.645	.665	.665	.688	.685
	EG	.148	.154	.104	.188	.158	.247	.207	.193	.189	.248
	ES	.224	.238	.268	.179	.195	.108	.128	.142	.123	.067
UL = 3.58											
	EL	.660	.660	.663	.657	.660	.660	.663	.665	.685	.678
	EG	.117	.175	.137	.137	.222	.245	.139	.183	.180	.239
	ES	.223	.165	.201	.205	.118	.095	.198	.152	.135	.084
UL = 4.77											
	EL	.751	.749	.736	.732	.714	.695	.692	.685	.685	.665
	EG	.156	.189	.135	.154	.185	.220	.164	.208	.208	.241
	ES	.093	.062	.129	.114	.101	.085	.144	.107	.107	.094
P25J13 IN UG = 12.38											
UL = 1.19											
	EL	.416	.460	.555	.599	.626	.641	.665	.689	.697	.697
	EG	.129	.234	.106	.184	.283	.132	.227	.227	.225	.376
	ES	.456	.307	.339	.217	.091	.227	.108	.084	.078	-.07

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P25J13 IN	UG = 12.38										
UL =	1.79										
	EL	.480	.507	.576	.598	.613	.637	.650	.762	.691	.691
	EG	.119	.123	.225	.203	.135	.239	.278	.206	.198	.307
	ES	.401	.370	.199	.199	.253	.124	.073	.032	.111	.002
UL =	2.39										
	EL	.510	.569	.593	.610	.618	.630	.640	.669	.667	.672
	EG	.166	.085	.119	.258	.162	.259	.211	.201	.230	.280
	ES	.324	.346	.288	.132	.220	.111	.149	.129	.103	.049
UL =	3.58										
	EL	.657	.632	.642	.642	.642	.647	.642	.637	.640	.662
	EG	.157	.179	.196	.196	.149	.256	.182	.188	.234	.231
	ES	.186	.189	.162	.162	.209	.097	.176	.175	.126	.107
UL =	4.77										
	EL	.747	.742	.722	.705	.695	.676	.678	.671	.654	.641
	EG	.156	.162	.184	.177	.207	.242	.215	.154	.213	.245
	ES	.097	.096	.094	.118	.098	.082	.107	.175	.133	.114
P12A13 AB	UG = 0.00										
UL =	2.39										
	EL	.561	.569	.561	.564	1.02	1.02	1.02	1.02	1.01	1.01
	EG	-.04	-.01	-.01	.010	-.00	-.00	-.00	-.01	.007	-.00
	ES	.476	.440	.447	.426	-.01	-.01	-.01	-.01	-.02	-.01
UL =	3.58										
	EL	.679	.679	.677	.671	.704	1.01	1.01	1.01	1.01	1.00
	EG	-.04	-.01	.003	-.03	.008	-.00	-.01	.008	-.01	.020
	ES	.363	.328	.321	.363	.289	-.01	.003	-.02	.003	-.02
UL =	4.77										
	EL	.801	.772	.766	.763	.763	.782	1.01	1.01	1.01	1.00
	EG	-.04	-.01	-.01	-.03	-.02	.014	-.00	-.01	-.02	.030
	ES	.234	.241	.245	.266	.257	.204	-.01	.003	.012	-.03
UL =	5.96										
	EL	.887	.845	.842	.836	.836	.839	.836	1.00	1.00	1.00
	EG	.004	-.03	-.00	-.05	-.00	-.02	-.01	.000	-.02	.030
	ES	.108	.188	.162	.214	.167	.184	.177	-.00	.017	-.03
UL =	7.16										
	EL	.935	.922	.919	.914	.911	.911	.906	.906	.901	1.01
	EG	.010	-.02	-.01	-.04	-.02	-.01	-.03	-.01	-.03	.018
	ES	.055	.094	.087	.129	.113	.094	.128	.108	.131	-.03
UL =	8.35										
	EL	.947	.952	.950	.947	.947	.944	.942	.939	.936	.936
	EG	.034	-.03	-.01	-.04	-.01	-.03	.009	-.05	-.03	.030
	ES	.019	.078	.062	.092	.064	.086	.049	.108	.092	.034
P13B13 AB	UG = 0.44										
UL =	2.39										
	EL	.531	.542	.555	.565	.974	.971	.969	.966	.966	.945
	EG	-.01	-.01	.021	.029	.013	.014	.005	.015	.024	.018
	ES	.475	.463	.424	.406	.013	.015	.026	.019	.010	.036

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P13B13 AB UG = 0.44											
UL = 3.58											
	EL	.720	.737	.751	.737	.720	1.04	1.05	1.05	1.05	1.04
	EG	-.02	-.03	-.01	-.02	.015	.003	-.01	.012	.002	.014
	ES	.302	.289	.258	.279	.265	-.04	-.04	-.06	-.05	-.06
UL = 4.77											
	EL	.811	.843	.827	.808	.808	.789	.937	.995	1.00	.997
	EG	-.02	-.03	.008	-.01	-.02	.003	-.01	.001	.009	.100
	ES	.212	.190	.166	.200	.210	.207	.021	.005	-.01	-.10
UL = 5.96											
	EL	.863	.903	.900	.889	.874	.863	.853	.874	.989	.992
	EG	.021	-.03	-.00	-.02	.001	-.01	-.02	.001	.002	.021
	ES	.116	.130	.104	.131	.126	.145	.164	.126	.009	-.01
UL = 7.16											
	EL	.916	.934	.934	.929	.929	.929	.929	.929	.927	.908
	EG	.026	-.01	-.01	-.01	-.01	-.01	-.02	-.02	-.01	-.01
	ES	.058	.074	.074	.079	.079	.079	.089	.088	.081	.098
P14C13 AB UG = 0.93											
UL = 1.19											
	EL	.439	.420	.404	.872	.957	.963	.960	.960	.963	.963
	EG	.060	.032	.082	.029	.025	.035	.026	.025	.034	.046
	ES	.501	.547	.514	.099	.017	.003	.014	.015	.003	-.01
UL = 2.39											
	EL	.542	.558	.566	.563	.944	.963	.966	.966	.960	.958
	EG	.005	.011	.038	.048	.027	.044	.025	.034	.025	.056
	ES	.453	.431	.396	.388	.028	-.01	.010	.001	.015	-.01
UL = 3.58											
	EL	.654	.712	.712	.707	.707	.937	.950	.958	.960	.960
	EG	.001	-.02	.006	.017	.054	.019	.037	.035	.034	.046
	ES	.345	.309	.281	.276	.239	.044	.013	.007	.005	-.01
UL = 4.77											
	EL	.761	.813	.811	.792	.784	.784	.824	.916	.961	.950
	EG	-.02	.000	.020	.032	.014	.014	.017	.032	.044	.028
	ES	.255	.186	.170	.176	.202	.202	.159	.052	-.00	.022
UL = 5.96											
	EL	.851	.886	.883	.875	.870	.870	.870	.864	.883	.936
	EG	.010	-.00	.018	.010	.011	.020	.010	.002	.027	.030
	ES	.139	.116	.099	.115	.120	.110	.120	.134	.090	.034
P15D13 AB UG = 1.77											
UL = 1.19											
	EL	.449	.423	.418	.755	.916	.932	.935	.935	.930	.927
	EG	.071	.070	.080	.047	.032	.097	.049	.057	.048	.051
	ES	.479	.507	.502	.198	.052	-.03	.016	.008	.022	.022
UL = 2.39											
	EL	.547	.573	.581	.646	.820	.906	.919	.927	.924	.922
	EG	.017	.037	.027	.073	.075	.063	.042	.058	.059	.062
	ES	.436	.390	.393	.281	.105	.031	.039	.015	.017	.016

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P15D13 AB UG = 1.77											
UL = 2.98											
	EL	.568	.643	.661	.714	.784	.885	.896	.932	.943	.943
	EG	.014	.045	.052	.025	.052	.066	.045	.039	.065	.059
	ES	.418	.311	.287	.261	.164	.049	.059	.029	-.01	-.00
UL = 3.58											
	EL	.644	.702	.707	.733	.743	.775	.853	.898	.929	.940
	EG	.002	.018	.026	.032	.049	.054	.052	.044	.049	.089
	ES	.354	.281	.267	.235	.208	.171	.095	.058	.022	-.03
UL = 4.77											
	EL	.770	.836	.817	.815	.817	.815	.836	.875	.922	.935
	EG	-.02	.006	.019	.038	.037	.028	.035	.038	.050	.050
	ES	.247	.158	.164	.148	.145	.157	.130	.087	.029	.015
P16E13 AB UG = 3.51											
UL = 1.19											
	EL	.451	.448	.549	.717	.772	.852	.879	.893	.896	.898
	EG	.071	.104	.060	.081	.101	.081	.067	.092	.120	.135
	ES	.478	.449	.391	.202	.127	.068	.054	.015	-.02	-.03
UL = 2.39											
	EL	.527	.605	.632	.720	.742	.796	.833	.868	.879	.890
	EG	-.01	.004	.028	.081	.068	.099	.113	.077	.094	.127
	ES	.479	.391	.340	.199	.190	.106	.053	.055	.027	-.02
UL = 2.98											
	EL	.590	.646	.649	.691	.729	.763	.803	.838	.864	.875
	EG	.011	.017	-.02	.113	.098	.113	.069	.091	.124	.079
	ES	.399	.337	.373	.195	.173	.123	.128	.071	.011	.046
UL = 3.58											
	EL	.657	.705	.697	.715	.745	.763	.798	.822	.856	.872
	EG	-.01	.045	.075	.081	.086	.104	.080	.093	.097	.119
	ES	.356	.250	.228	.203	.169	.133	.122	.085	.046	.008
UL = 4.77											
	EL	.760	.815	.810	.797	.706	.786	.789	.799	.799	.815
	EG	-.03	.066	.076	.069	.070	.071	.110	.078	.097	.108
	ES	.268	.119	.114	.134	.143	.142	.101	.123	.104	.077
P17F13 AB UG = 5.27											
UL = 1.19											
	EL	.464	.436	.580	.668	.722	.768	.812	.825	.838	.838
	EG	.121	.105	.083	.098	.165	.142	.117	.121	.129	.175
	ES	.415	.459	.337	.234	.113	.090	.072	.054	.034	-.01
UL = 2.39											
	EL	.588	.601	.627	.660	.696	.744	.775	.795	.813	.831
	EG	.050	.080	.067	.118	.113	.126	.151	.126	.113	.185
	ES	.362	.319	.307	.222	.192	.130	.074	.079	.073	-.02
UL = 2.98											
	EL	.660	.665	.668	.678	.701	.713	.746	.774	.792	.815
	EG	-.01	.061	.079	.125	.102	.121	.127	.110	.126	.138
	ES	.353	.274	.253	.198	.197	.166	.127	.116	.082	.047

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P17F13 AB	UG = 5.27										
UL =	3.58										
	EL	.644	.710	.710	.700	.707	.720	.740	.756	.776	.784
	EG	.002	.139	.054	.121	.130	.110	.108	.141	.110	.143
	ES	.354	.151	.236	.179	.163	.170	.152	.103	.114	.073
UL =	4.18										
	EL	.764	.764	.736	.736	.726	.734	.734	.751	.756	.766
	EG	.023	.083	.097	.097	.136	.128	.119	.123	.122	.146
	ES	.213	.153	.167	.167	.138	.139	.148	.126	.122	.088
UL =	4.77										
	EL	.832	.827	.794	.774	.769	.759	.751	.744	.749	.741
	EG	.052	.092	.079	.138	.130	.114	.097	.096	.161	.159
	ES	.116	.080	.127	.000	.101	.127	.152	.161	.090	.099
P22G13 AB	UG = 7.09										
UL =	1.19										
	EL	.426	.426	.563	.676	.720	.761	.802	.816	.830	.827
	EG	.140	.126	.076	.097	.175	.143	.118	.151	.167	.176
	ES	.434	.448	.360	.227	.105	.096	.030	.033	.003	-.00
UL =	1.79										
	EL	.464	.499	.600	.656	.685	.723	.768	.771	.795	.819
	EG	.082	.077	.108	.147	.124	.158	.172	.139	.182	.177
	ES	.454	.424	.292	.197	.191	.119	.050	.091	.023	.004
UL =	2.39										
	EL	.532	.568	.629	.642	.684	.718	.737	.761	.779	.797
	EG	.059	.094	.104	.130	.143	.101	.206	.140	.100	.231
	ES	.410	.337	.267	.228	.173	.181	.057	.099	.121	-.03
UL =	2.98										
	EL	.584	.631	.647	.665	.686	.707	.728	.749	.764	.775
	EG	.064	.123	.073	.136	.105	.141	.168	.161	.159	.184
	ES	.352	.247	.280	.199	.209	.152	.104	.090	.077	.041
UL =	3.58										
	EL	.686	.686	.691	.701	.701	.701	.706	.727	.740	.745
	EG	.074	.114	.123	.112	.112	.152	.172	.136	.181	.189
	ES	.240	.200	.186	.187	.187	.147	.122	.137	.079	.066
UL =	4.77										
	EL	.792	.790	.777	.753	.738	.732	.722	.722	.722	.719
	EG	.084	.136	.100	.113	.163	.166	.111	.156	.156	.193
	ES	.124	.075	.123	.134	.100	.101	.167	.122	.122	.088
P23H13 AB	UG = 8.86										
UL =	1.19										
	EL	.426	.431	.541	.619	.655	.713	.736	.754	.769	.764
	EG	.140	.115	.127	.190	.100	.198	.226	.151	.214	.216
	ES	.433	.453	.332	.190	.245	.089	.038	.095	.017	.020
UL =	1.79										
	EL	.483	.509	.590	.618	.659	.687	.707	.733	.740	.756
	EG	.092	.151	.072	.172	.146	.202	.142	.211	.247	.187
	ES	.424	.340	.337	.210	.194	.111	.150	.057	.013	.057

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P23H13 AB	UG = 8.86										
UL = 2.39											
	EL	.576	.579	.612	.645	.665	.678	.706	.726	.744	.744
	EG	.052	.102	.135	.158	.155	.184	.133	.164	.237	.229
	ES	.372	.319	.253	.197	.180	.138	.162	.110	.019	.028
UL = 2.98											
	EL	.633	.628	.622	.643	.656	.668	.686	.702	.712	.638
	EG	.056	.132	.143	.140	.166	.176	.175	.168	.167	.255
	ES	.311	.240	.235	.218	.179	.156	.139	.130	.122	.107
UL = 3.58											
	EL	.718	.700	.685	.672	.674	.685	.695	.705	.723	.721
	EG	.095	.121	.077	.154	.144	.183	.203	.205	.184	.212
	ES	.187	.179	.239	.174	.182	.132	.102	.090	.093	.067
UL = 4.77											
	EL	.801	.789	.759	.781	.734	.716	.719	.704	.692	.682
	EG	.083	.108	.141	.137	.135	.188	.199	.168	.170	.228
	ES	.116	.104	.101	.082	.131	.096	.032	.128	.139	.090
P24I13 AB	UG = 10.88										
UL = 1.19											
	EL	.418	.431	.524	.582	.610	.622	.640	.670	.788	.725
	EG	.128	.134	.186	.177	.126	.222	.221	.164	.259	.301
	ES	.454	.435	.290	.241	.265	.156	.139	.166	-.05	-.03
UL = 1.79											
	EL	.490	.515	.558	.619	.644	.672	.634	.720	.725	.722
	EG	.156	.140	.077	.153	.196	.214	.117	.147	.325	.302
	ES	.354	.345	.365	.229	.160	.114	.199	.134	-.05	-.02
UL = 2.39											
	EL	.524	.564	.602	.632	.637	.665	.683	.695	.700	.710
	EG	.203	.133	.070	.207	.131	.244	.135	.207	.187	.274
	ES	.273	.303	.328	.161	.232	.091	.132	.098	.112	.016
UL = 2.98											
	EL	.627	.608	.627	.633	.648	.645	.665	.665	.688	.685
	EG	.109	.117	.123	.169	.167	.180	.207	.249	.217	.228
	ES	.263	.276	.249	.198	.185	.175	.128	.086	.095	.087
UL = 3.58											
	EL	.660	.660	.663	.657	.660	.660	.663	.665	.685	.678
	EG	.104	.165	.146	.166	.203	.177	.159	.174	.180	.309
	ES	.236	.175	.192	.177	.137	.163	.159	.161	.135	.014
UL = 4.77											
	EL	.751	.749	.736	.732	.714	.695	.692	.685	.685	.665
	EG	.129	.170	.163	.192	.157	.211	.193	.190	.227	.231
	ES	.119	.081	.101	.077	.129	.095	.115	.126	.088	.104
P25J13 AB	UG = 12.38										
UL = 1.19											
	EL	.416	.460	.555	.599	.626	.641	.665	.689	.697	.697
	EG	.129	.111	.097	.212	.217	.219	.246	.179	.254	.356
	ES	.456	.429	.348	.189	.157	.141	.089	.131	.049	-.05

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P25J13 AB UG = 12.38											
UL = 1.79											
	EL	.480	.507	.576	.598	.613	.637	.650	.762	.691	.691
	EG	.119	.132	.140	.146	.229	.219	.210	.215	.273	.297
	ES	.401	.361	.284	.256	.158	.143	.141	.022	.035	.012
UL = 2.39											
	EL	.510	.569	.593	.610	.618	.630	.640	.669	.667	.672
	EG	.140	.170	.081	.276	.172	.211	.231	.211	.155	.389
	ES	.350	.262	.326	.113	.211	.159	.130	.120	.179	-.06
UL = 3.58											
	EL	.657	.632	.642	.642	.642	.647	.642	.637	.640	.662
	EG	.183	.188	.064	.177	.196	.218	.221	.216	.215	.281
	ES	.160	.179	.294	.181	.162	.135	.137	.147	.145	.057
UL = 4.77											
	EL	.747	.742	.722	.705	.695	.676	.678	.671	.654	.641
	EG	.169	.134	.146	.205	.207	.204	.205	.211	.251	.264
	ES	.084	.124	.131	.089	.098	.120	.117	.119	.095	.094
P13A16 IN UG = 0.00											
UL = 2.20											
	EL	.531	.531	.529	1.03	1.04	1.03	1.03	1.03	1.03	1.02
	EG	-.00	-.01	-.01	-.01	-.01	-.02	-.01	.006	-.02	-.00
	ES	.471	.482	.484	-.03	-.03	-.02	-.03	-.04	-.01	-.02
UL = 2.94											
	EL	.602	.617	.613	.882	1.02	1.02	1.02	1.02	1.01	1.01
	EG	.019	-.01	-.00	-.02	-.00	-.01	-.00	.008	-.01	.023
	ES	.379	.388	.392	.142	-.01	-.01	-.01	-.02	.002	-.03
UL = 3.67											
	EL	.673	.740	.716	.714	1.02	1.02	1.01	1.01	1.01	1.00
	EG	.008	-.01	-.02	-.02	-.00	-.00	-.01	.020	-.01	-.00
	ES	.319	.273	.304	.306	-.01	-.02	-.00	-.03	.005	-.00
UL = 4.40											
	EL	.684	.817	.750	.746	.917	1.01	1.02	1.02	1.01	1.01
	EG	.048	-.01	-.02	-.00	-.02	-.00	-.01	.019	-.02	-.00
	ES	.268	.197	.276	.258	.102	-.01	-.00	-.04	.009	-.01
UL = 5.14											
	EL	.717	.775	.773	.795	.795	.983	1.00	1.00	1.00	1.00
	EG	.022	.035	-.01	-.01	-.01	-.03	.000	.010	-.01	-.06
	ES	.261	.191	.235	.216	.216	.046	-.00	-.01	.011	.061
UL = 5.87											
	EL	.773	.797	.789	.795	.820	.830	1.00	1.01	1.01	1.01
	EG	.077	.042	-.01	-.01	-.02	-.01	.000	.010	-.01	.011
	ES	.150	.161	.221	.216	.206	.176	-.00	-.02	.005	-.02
P14B16 IN UG = 0.11											
UL = 2.20											
	EL	.515	.504	.526	.981	.986	.989	.936	.983	.981	.981
	EG	.011	-.01	-.01	.003	.002	.002	.002	.003	.003	.015
	ES	.474	.505	.486	.016	.012	.009	.012	.014	.016	.004

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
---------------- P14B16 IN UG = 0.11 ----------------											
UL =	2.94										
	EL	.654	.622	.630	.957	1.01	1.00	1.00	1.00	1.00	.997
	EG	.000	-.01	-.02	-.04	-.00	-.00	-.00	.000	.000	.013
	ES	.346	.384	.388	.079	-.01	-.01	-.01	-.00	.000	-.01
UL =	3.67										
	EL	.697	.713	.721	.745	1.00	1.01	1.01	1.01	1.01	1.00
	EG	.025	-.01	-.02	-.04	.000	-.00	-.00	-.00	-.00	.011
	ES	.278	.296	.300	.290	-.00	-.01	-.01	-.01	-.01	-.02
UL =	4.40										
	EL	.755	.757	.760	.765	.822	1.01	1.01	1.01	1.01	1.00
	EG	.048	-.01	-.02	-.02	-.01	-.00	-.00	-.00	-.00	.011
	ES	.197	.248	.256	.252	.182	-.01	-.01	-.01	-.01	-.02
UL =	5.14										
	EL	.802	.833	.810	.833	.823	.987	1.02	1.02	1.02	1.01
	EG	.073	-.01	-.01	-.03	-.02	-.01	-.00	-.01	-.00	.010
	ES	.125	.173	.203	.194	.193	.021	-.02	-.01	-.02	-.02
UL =	5.87										
	EL	.829	.851	.847	.864	.854	.861	1.00	1.01	1.01	1.00
	EG	.090	.012	-.02	-.02	-.02	-.02	-.00	-.00	-.00	.011
	ES	.081	.136	.172	.158	.166	.160	-.00	-.01	-.01	-.02
UL =	6.60										
	EL	.855	.855	.862	.867	.886	.877	.889	1.00	1.00	1.00
	EG	.128	.001	-.01	-.01	-.00	-.02	-.02	.000	-.00	.011
	ES	.017	.144	.148	.144	.117	.147	.126	-.00	-.00	-.02
UL =	7.34										
	EL	.887	.873	.880	.892	.901	.903	.915	.920	1.00	1.01
	EG	.070	.009	-.00	-.01	-.02	-.03	-.01	-.02	-.00	.011
	ES	.043	.118	.123	.113	.116	.124	.093	.100	-.00	-.02
---------------- P15C16 IN UG = 0.24 ----------------											
UL =	2.20										
	EL	.500	.523	.542	1.00	1.01	1.01	1.00	1.00	1.00	1.00
	EG	.013	-.01	.007	.000	-.00	-.00	-.00	.000	.020	.012
	ES	.487	.488	.451	.000	-.01	-.01	-.00	-.00	-.02	-.01
UL =	2.94										
	EL	.621	.619	.649	.928	1.01	1.02	1.01	1.01	1.01	1.01
	EG	.016	-.02	-.01	.000	-.00	-.00	-.00	-.00	.009	.011
	ES	.363	.397	.361	.071	-.01	-.01	-.01	-.01	-.02	-.02
UL =	3.67										
	EL	.688	.772	.788	.779	.991	.993	1.00	1.00	1.00	1.00
	EG	.037	-.02	-.03	-.02	.001	.001	.000	.010	.011	.012
	ES	.274	.246	.243	.240	.008	.006	-.00	-.01	-.01	-.01
UL =	4.40										
	EL	.719	.726	.722	.731	.773	.976	.989	.991	.989	.987
	EG	.075	-.01	.000	-.00	.003	.004	.012	.001	.012	.014
	ES	.206	.285	.278	.271	.224	.021	-.00	.008	-.00	-.00
UL =	5.14										
	EL	.779	.830	.814	.825	.810	.903	.993	1.00	1.00	1.00
	EG	.098	-.01	-.00	-.02	-.01	-.01	.001	.000	.011	.012
	ES	.124	.176	.189	.190	.203	.104	.006	-.00	-.01	-.01

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P15C16 IN UG = 0.24											
UL = 5.87											
	EL	.777	.811	.813	.826	.829	.846	.970	.989	.991	.991
	EG	.108	.008	-.00	-.01	-.01	.002	-.01	.002	.012	.013
	ES	.115	.181	.190	.179	.177	.152	.036	.009	-.00	-.01
UL = 6.60											
	EL	.823	.849	.829	.834	.855	.859	.874	.979	.977	.987
	EG	.070	.002	.005	.004	-.01	.000	-.02	.014	.004	.014
	ES	.107	.149	.166	.162	.155	.140	.149	.007	.020	-.00
UL = 7.34											
	EL	.847	.849	.870	.861	.880	.878	.876	.893	.973	.981
	EG	.119	.013	-.00	.000	-.00	-.03	.008	-.01	.004	.015
	ES	.034	.139	.131	.139	.123	.156	.116	.112	.023	.004
P16D16 IN UG = 0.44											
UL = 2.20											
	EL	.472	.503	.561	.990	1.00	1.00	.997	.995	.995	.992
	EG	.007	.002	.014	.002	.011	.011	.011	.001	.001	.025
	ES	.521	.495	.424	.009	-.01	-.01	-.01	.004	.004	-.02
UL = 2.94											
	EL	.559	.589	.637	.910	.980	.990	.992	.990	.985	.987
	EG	.015	.010	-.02	-.01	.024	.012	.012	.002	.002	.014
	ES	.426	.401	.382	.098	-.00	-.00	-.00	.008	.013	-.00
UL = 3.67											
	EL	.626	.655	.645	.682	.924	.973	.983	.983	.988	.985
	EG	.036	.000	.012	.006	.033	.004	.003	.003	.012	.014
	ES	.338	.345	.343	.311	.043	.023	.015	.015	.000	.000
UL = 4.40											
	EL	.686	.721	.719	.721	.728	.783	.914	.963	.970	.978
	EG	.069	.000	.011	.011	.010	.023	.013	.016	.005	.016
	ES	.244	.279	.270	.268	.262	.195	.073	.021	.025	.007
UL = 5.14											
	EL	.748	.805	.810	.781	.784	.844	.933	.981	.978	.976
	EG	.070	.019	.008	-.01	.001	.003	.021	.003	.003	.016
	ES	.182	.175	.182	.228	.215	.153	.046	.016	.018	.008
UL = 5.87											
	EL	.785	.844	.821	.828	.828	.837	.873	.974	.976	.976
	EG	.075	.003	.006	.016	-.01	-.01	.009	.015	.014	.016
	ES	.139	.153	.173	.156	.178	.170	.118	.011	.009	.008
UL = 6.60											
	EL	.818	.859	.838	.841	.836	.859	.859	.894	.968	.972
	EG	.134	.022	.014	.003	.004	-.01	.011	-.01	.016	.016
	ES	.048	.119	.147	.156	.160	.151	.130	.111	.017	.011
UL = 7.34											
	EL	.836	.848	.857	.861	.873	.870	.868	.880	.902	.975
	EG	.131	.023	.011	.021	.009	-.00	.010	-.01	.015	.004
	ES	.033	.129	.132	.117	.118	.131	.122	.134	.083	.021
UL = 2.20											
	EL	.465	.604	.798	.897	.933	.935	.948	.953	.953	.946
	EG	.029	.008	.010	.016	.010	.010	.019	.039	.018	.032
	ES	.506	.388	.192	.088	.057	.055	.033	.008	.029	.021

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P17E16 IN	UG = 0.88										
UL = 2.94											
	EL	.573	.707	.789	.871	.904	.913	.916	.922	.927	.929
	EG	.012	.013	.011	.020	.004	.024	.013	.023	.022	.023
	ES	.414	.280	.200	.109	.091	.063	.071	.055	.051	.048
UL = 3.67											
	EL	.628	.672	.753	.810	.805	.851	.834	.910	.930	.934
	EG	.015	.029	.027	.019	.030	.023	.028	.024	.021	.034
	ES	.357	.299	.220	.172	.165	.126	.038	.065	.049	.031
UL = 4.40											
	EL	.750	.820	.828	.846	.846	.848	.863	.870	.900	.907
	EG	.049	-.00	.016	.034	.024	.013	.042	.020	.026	.026
	ES	.201	.185	.156	.120	.131	.139	.095	.110	.074	.067
UL = 5.14											
	EL	.801	.823	.821	.819	.816	.819	.851	.873	.916	.905
	EG	.073	.017	.027	.028	.028	.038	.044	.030	.013	.027
	ES	.126	.161	.152	.154	.155	.143	.105	.097	.071	.068
UL = 5.87											
	EL	.812	.823	.825	.823	.812	.827	.827	.880	.917	.925
	EG	.092	.048	.006	.048	.018	.027	.027	.029	.034	.036
	ES	.096	.129	.170	.129	.170	.147	.147	.091	.049	.039
UL = 6.60											
	EL	.852	.838	.833	.833	.835	.829	.840	.854	.892	.924
	EG	.097	.036	.015	.047	.036	.026	.014	.033	.017	.024
	ES	.051	.127	.152	.120	.129	.145	.146	.113	.091	.052
P18F16 IN	UG = 1.33										
UL = 1.47											
	EL	.430	.470	.849	.915	.935	.932	.940	.945	.942	.940
	EG	.066	.050	.002	.013	.031	.042	.041	.019	.062	.033
	ES	.504	.481	.149	.072	.034	.026	.019	.036	-.00	.027
UL = 2.20											
	EL	.471	.632	.814	.880	.895	.907	.922	.929	.929	.926
	EG	.028	.025	.018	.008	.027	.046	.044	.021	.053	.060
	ES	.501	.343	.168	.112	.079	.047	.035	.050	.018	.014
UL = 2.94											
	EL	.592	.831	.863	.866	.873	.878	.897	.910	.922	.922
	EG	.020	.005	.010	.021	.009	.029	.026	.024	.044	.048
	ES	.388	.164	.127	.114	.118	.093	.076	.066	.034	.030
UL = 3.67											
	EL	.727	.829	.848	.843	.838	.841	.862	.869	.891	.895
	EG	.021	.016	.002	.024	.025	.035	.032	.020	.049	.052
	ES	.252	.155	.150	.133	.137	.124	.106	.111	.061	.052
UL = 4.40											
	EL	.780	.850	.813	.817	.824	.831	.834	.850	.862	.867
	EG	.055	.012	.018	.060	.038	.036	.036	.055	.053	.045
	ES	.165	.137	.169	.123	.138	.132	.130	.095	.085	.089
UL = 5.14											
	EL	.818	.831	.827	.824	.815	.831	.843	.852	.861	.868
	EG	.081	.026	.016	.059	.050	.026	.056	.054	.074	.044
	ES	.101	.143	.157	.117	.135	.143	.101	.093	.064	.087

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P19G16 IN UG = 1.77											
UL = 1.47											
	EL	.440	.533	.831	.843	.874	.894	.901	.910	.903	.901
	EG	.054	.061	.015	.035	.040	.048	.058	.056	.057	.064
	ES	.506	.406	.153	.123	.085	.058	.041	.034	.039	.035
UL = 2.20											
	EL	.536	.778	.800	.829	.836	.849	.867	.878	.889	.896
	EG	.039	.023	.031	.016	.036	.076	.031	.040	.091	.052
	ES	.425	.199	.169	.155	.129	.075	.102	.082	.020	.052
UL = 2.94											
	EL	.709	.800	.811	.802	.819	.839	.857	.863	.877	.881
	EG	.034	.031	.018	.041	.028	.056	.033	.053	.072	.055
	ES	.257	.170	.171	.157	.153	.104	.111	.084	.051	.064
UL = 3.67											
	EL	.743	.815	.800	.807	.820	.835	.846	.861	.857	.872
	EG	.029	.028	.031	.051	.049	.036	.055	.053	.064	.068
	ES	.228	.156	.169	.143	.132	.129	.099	.086	.079	.060
UL = 4.40											
	EL	.794	.848	.816	.812	.810	.816	.829	.831	.833	.838
	EG	.053	.034	.039	.061	.050	.060	.047	.068	.068	.085
	ES	.153	.118	.145	.128	.140	.124	.124	.101	.099	.077
UL = 5.14											
	EL	.849	.843	.824	.822	.819	.817	.809	.813	.813	.826
	EG	.108	.045	.038	.070	.059	.049	.061	.060	.092	.063
	ES	.043	.112	.139	.109	.121	.134	.130	.127	.095	.111
P20H16 IN UG = 2.21											
UL = 0.73											
	EL	.407	.460	.859	.905	.921	.934	.936	.934	.931	.921
	EG	.091	.104	.022	.015	.044	.042	.063	.053	.074	.073
	ES	.502	.436	.119	.080	.035	.025	.001	.014	-.01	.007
UL = 1.47											
	EL	.449	.640	.799	.826	.858	.875	.890	.897	.897	.900
	EG	.085	.045	.041	.027	.043	.062	.049	.058	.090	.064
	ES	.467	.316	.160	.147	.099	.063	.062	.045	.013	.037
UL = 2.20											
	EL	.496	.740	.790	.807	.824	.843	.853	.870	.875	.882
	EG	.067	.008	.043	.051	.048	.066	.076	.041	.083	.067
	ES	.437	.252	.167	.142	.128	.090	.071	.089	.043	.052
UL = 2.94											
	EL	.705	.770	.784	.805	.810	.822	.836	.853	.860	.862
	EG	.003	.046	.044	.040	.061	.059	.046	.065	.074	.082
	ES	.292	.184	.172	.154	.129	.119	.118	.082	.066	.056
UL = 3.67											
	EL	.807	.804	.797	.800	.786	.802	.816	.823	.832	.830
	EG	.030	.030	.042	.052	.054	.052	.071	.070	.079	.075
	ES	.164	.166	.161	.149	.160	.147	.114	.108	.089	.096
UL = 4.40											
	EL	.823	.825	.804	.790	.781	.788	.795	.809	.797	.800
	EG	.070	.059	.051	.075	.076	.075	.053	.082	.084	.079
	ES	.108	.116	.145	.135	.143	.137	.152	.109	.119	.121

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P21I16 IN	UG = 2.65										
UL = 0.73											
	EL	.416	.481	.793	.840	.856	.867	.881	.879	.888	.885
	EG	.090	.090	.053	.046	.054	.073	.071	.072	.113	.078
	ES	.495	.429	.154	.114	.090	.059	.048	.050	.000	.036
UL = 1.47											
	EL	.468	.666	.775	.813	.837	.851	.860	.871	.875	.878
	EG	.071	.030	.045	.082	.046	.076	.075	.052	.104	.079
	ES	.461	.304	.180	.105	.116	.073	.066	.078	.021	.043
UL = 2.20											
	EL	.581	.748	.764	.788	.812	.826	.837	.848	.854	.850
	EG	.033	.039	.047	.075	.061	.080	.057	.076	.086	.071
	ES	.387	.213	.189	.137	.127	.095	.096	.076	.060	.079
UL = 2.94											
	EL	.709	.768	.777	.792	.799	.810	.821	.836	.834	.842
	EG	.023	.057	.045	.074	.063	.072	.070	.078	.089	.073
	ES	.268	.175	.178	.134	.139	.119	.110	.086	.077	.085
UL = 3.67											
	EL	.820	.807	.791	.785	.796	.789	.802	.811	.817	.828
	EG	.028	.061	.053	.075	.053	.075	.083	.061	.113	.075
	ES	.153	.132	.155	.140	.152	.136	.115	.128	.070	.097
P22J16 IN	UG = 3.09										
UL = 0.73											
	EL	.449	.564	.808	.838	.865	.872	.885	.885	.889	.887
	EG	.106	.088	.030	.057	.052	.083	.081	.071	.112	.066
	ES	.445	.348	.163	.105	.082	.045	.034	.044	-.00	.047
UL = 1.47											
	EL	.482	.746	.783	.809	.829	.846	.855	.864	.868	.873
	EG	.058	.050	.054	.072	.047	.087	.096	.063	.094	.104
	ES	.459	.205	.163	.119	.124	.066	.048	.073	.037	.023
UL = 2.20											
	EL	.589	.751	.766	.788	.803	.818	.835	.853	.848	.857
	EG	.031	.059	.057	.064	.094	.081	.068	.076	.087	.107
	ES	.380	.190	.177	.148	.103	.101	.097	.072	.065	.036
UL = 2.94											
	EL	.748	.776	.769	.791	.788	.808	.821	.827	.833	.829
	EG	.039	.066	.046	.064	.064	.061	.102	.080	.089	.111
	ES	.213	.158	.185	.145	.147	.131	.078	.094	.078	.060
P23K16 IN	UG = 3.51										
UL = 0.73											
	EL	.407	.571	.764	.812	.846	.858	.860	.867	.875	.870
	EG	.102	.066	.047	.082	.055	.075	.074	.084	.125	.093
	ES	.491	.363	.189	.106	.099	.067	.055	.049	.000	.038
UL = 1.47											
	EL	.499	.702	.745	.787	.801	.823	.837	.849	.849	.844
	EG	.077	.046	.060	.075	.073	.091	.089	.076	.087	.121
	ES	.424	.252	.195	.138	.126	.087	.075	.075	.065	.035

Table 13 (continued)

	INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P23K16 IN UG = 3.51										
UL = 2.20										
EL	.592	.732	.744	.769	.783	.797	.816	.818	.837	.830
EG	.041	.052	.071	.110	.097	.063	.071	.091	.089	.099
ES	.367	.216	.185	.121	.120	.140	.114	.090	.075	.071
P24L16 IN UG = 3.93										
UL = 0.73										
EL	.462	.640	.755	.790	.815	.834	.836	.855	.857	.859
EG	.093	.066	.059	.106	.060	.131	.057	.096	.117	.094
ES	.445	.294	.186	.104	.125	.035	.107	.049	.026	.047
UL = 1.47										
EL	.532	.735	.747	.779	.804	.817	.826	.842	.852	.849
EG	.061	.062	.049	.087	.083	.113	.101	.088	.108	.096
ES	.407	.203	.204	.135	.113	.070	.073	.070	.041	.055
UL = 2.20										
EL	.635	.748	.764	.778	.800	.796	.814	.825	.839	.841
EG	.045	.070	.057	.098	.094	.074	.113	.080	.088	.097
ES	.320	.181	.178	.125	.105	.130	.073	.095	.073	.062
P25M16 IN UG = 4.34										
UL = 0.73										
EL	.481	.692	.770	.834	.836	.854	.859	.875	.877	.872
EG	.080	.058	.056	.100	.089	.128	.053	.136	.104	.080
ES	.440	.250	.174	.067	.075	.017	.038	-.01	.019	.047
UL = 1.47										
EL	.588	.744	.773	.795	.820	.826	.842	.857	.864	.862
EG	.042	.060	.067	.106	.123	.069	.098	.128	.074	.106
ES	.370	.196	.161	.099	.057	.105	.050	.015	.062	.032
P13A16 AB UG = 0.00										
UL = 2.20										
EL	.531	.531	.529	1.03	1.04	1.03	1.03	1.03	1.03	1.02
EG	.008	-.01	-.01	-.01	-.01	-.02	-.01	.006	-.02	-.00
ES	.461	.482	.484	-.03	-.03	-.02	-.03	-.04	-.01	-.02
UL = 2.94										
EL	.602	.617	.613	.882	1.02	1.02	1.02	1.02	1.01	1.01
EG	.019	-.01	-.00	-.02	.008	-.01	-.00	-.00	-.01	.023
ES	.379	.388	.392	.142	-.02	-.01	-.01	-.01	.002	-.03
UL = 3.67										
EL	.673	.740	.716	.714	1.02	1.02	1.01	1.01	1.01	1.00
EG	.008	-.01	-.02	-.02	-.00	-.00	-.00	.009	-.01	-.00
ES	.319	.273	.304	.306	-.01	-.02	-.01	-.02	.005	-.00
UL = 4.40										
EL	.684	.817	.750	.746	.917	1.01	1.02	1.02	1.01	1.01
EG	.048	-.01	-.02	-.01	-.01	-.01	-.00	.008	-.01	-.00
ES	.268	.197	.276	.268	.092	-.00	-.01	-.02	-.00	-.01
UL = 5.14										
EL	.717	.775	.773	.795	.795	.983	1.00	1.00	1.00	1.00
EG	.022	.024	-.01	-.02	-.01	-.01	.000	.010	-.01	.000
ES	.261	.201	.235	.226	.216	.025	-.00	-.01	.011	.000

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P13A16 AB UG = 0.00											
UL = 5.87											
	EL	.773	.797	.789	.795	.820	.830	1.00	1.01	1.01	1.01
	EG	.088	.031	.001	-.01	-.02	-.02	-.01	.010	-.00	-.00
	ES	.140	.172	.210	.216	.195	.186	.009	-.02	-.01	-.01
P14B16 AB UG = 0.11											
UL = 2.20											
	EL	.515	.504	.526	.981	.986	.989	.936	.983	.981	.981
	EG	.000	-.01	-.00	.003	.002	.002	.002	.003	.003	.015
	ES	.485	.505	.475	.016	.012	.009	.012	.014	.016	.004
UL = 2.94											
	EL	.654	.622	.630	.957	1.01	1.00	1.00	1.00	1.00	.997
	EG	-.01	-.01	-.02	-.02	-.00	-.00	-.00	-.01	.000	.013
	ES	.356	.384	.388	.058	-.01	-.01	-.01	.008	.000	-.01
UL = 3.67											
	EL	.697	.713	.721	.745	1.00	1.01	1.01	1.01	1.01	1.00
	EG	.025	-.02	-.02	-.02	.000	-.00	-.00	-.00	-.00	.011
	ES	.278	.307	.300	.280	-.00	-.01	-.01	-.01	-.01	-.02
UL = 4.40											
	EL	.755	.757	.760	.765	.822	1.01	1.01	1.01	1.01	1.00
	EG	.048	-.01	-.02	-.02	-.01	-.00	-.00	-.00	-.00	.011
	ES	.197	.248	.256	.252	.182	-.01	-.01	-.01	-.01	-.02
UL = 5.14											
	EL	.802	.833	.810	.833	.823	.987	1.02	1.02	1.02	1.01
	EG	.073	-.02	-.00	-.03	-.02	-.01	-.00	.018	-.02	.010
	ES	.125	.184	.193	.194	.193	.021	-.02	-.04	.006	-.02
UL = 5.87											
	EL	.829	.851	.847	.864	.854	.861	1.00	1.01	1.01	1.00
	EG	.058	.002	-.02	-.02	-.01	-.02	-.00	-.00	-.00	.011
	ES	.113	.147	.172	.158	.155	.160	-.00	-.01	-.01	-.02
UL = 6.60											
	EL	.855	.855	.862	.867	.886	.877	.839	1.00	1.00	1.00
	EG	.118	.012	-.01	-.02	-.01	-.01	-.00	.000	-.00	-.00
	ES	.027	.133	.148	.155	.128	.136	.115	-.00	-.00	-.00
UL = 7.34											
	EL	.887	.873	.880	.892	.901	.903	.915	.920	1.00	1.01
	EG	.070	.030	-.01	-.01	-.02	-.02	-.02	-.01	-.00	.011
	ES	.043	.097	.134	.113	.116	.114	.104	.089	-.00	-.02
P15C16 AB UG = 0.24											
UL = 2.20											
	EL	.500	.523	.542	1.00	1.01	1.01	1.00	1.00	1.00	1.00
	EG	.013	-.00	.007	.000	-.00	-.00	.010	.000	.010	.012
	ES	.487	.478	.451	.000	-.01	-.01	-.02	-.00	-.02	-.01
UL = 2.94											
	EL	.621	.619	.649	.928	1.01	1.02	1.01	1.01	1.01	1.01
	EG	.026	-.02	-.02	-.01	.009	-.00	-.00	-.00	.020	.011
	ES	.352	.397	.371	.082	-.02	-.01	-.01	-.01	-.03	-.02

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P15C16 AB UG = 0.24											
UL = 3.67											
	EL	.688	.772	.788	.779	.991	.993	1.00	1.00	1.00	1.00
	EG	.037	-.02	-.02	-.01	.001	.001	.010	.000	.011	.012
	ES	.274	.246	.233	.230	.008	.006	-.01	-.00	-.01	-.01
UL = 4.40											
	EL	.719	.726	.722	.731	.773	.976	.989	.991	.989	.987
	EG	.054	-.11	.000	-.00	.003	.014	.002	.001	.012	.014
	ES	.227	.380	.278	.271	.224	.010	.009	.008	-.00	-.00
UL = 5.14											
	EL	.779	.830	.814	.825	.810	.903	.993	1.00	1.00	1.00
	EG	.087	-.01	-.00	-.02	-.00	-.01	.012	.010	-.01	.012
	ES	.134	.176	.189	.190	.193	.104	-.01	-.01	.011	-.01
UL = 5.87											
	EL	.777	.811	.813	.826	.829	.846	.970	.989	.991	.991
	EG	.108	.018	-.00	-.01	-.01	.002	.005	.002	.012	.013
	ES	.115	.170	.190	.179	.177	.152	.026	.009	-.00	-.01
UL = 6.60											
	EL	.823	.849	.829	.834	.855	.859	.874	.979	.977	.987
	EG	.070	.013	-.01	.015	-.01	.000	-.00	-.01	.004	.014
	ES	.107	.139	.176	.151	.155	.140	.128	.029	.020	-.00
UL = 7.34											
	EL	.847	.849	.870	.861	.880	.878	.876	.893	.973	.981
	EG	.119	.023	-.00	.000	-.01	-.00	-.00	-.01	.015	.027
	ES	.034	.128	.131	.139	.133	.124	.126	.112	.013	-.01
P16D16 AB UG = 0.44											
UL = 2.20											
	EL	.472	.503	.561	.990	1.00	1.00	.997	.995	.995	.992
	EG	-.00	.002	.025	.002	.000	.000	.011	.001	.011	.025
	ES	.532	.495	.414	.009	.000	.000	-.01	.004	-.01	-.02
UL = 2.94											
	EL	.559	.589	.637	.910	.980	.990	.992	.990	.985	.987
	EG	.015	-.00	-.01	.003	.014	.002	.012	.002	.013	.014
	ES	.426	.412	.371	.087	.006	.008	-.00	.008	.002	-.00
UL = 3.67											
	EL	.626	.655	.645	.682	.924	.973	.983	.983	.988	.985
	EG	.036	.000	.012	.017	.012	.015	.003	.003	.012	.026
	ES	.338	.345	.343	.301	.065	.012	.015	.015	.000	-.01
UL = 4.40											
	EL	.686	.721	.719	.721	.728	.783	.914	.963	.970	.978
	EG	.059	.000	.001	.011	.010	.033	.013	.006	.026	.003
	ES	.255	.279	.281	.268	.262	.184	.073	.031	.004	.019
UL = 5.14											
	EL	.748	.805	.810	.781	.784	.844	.933	.981	.978	.976
	EG	.049	.009	-.01	.002	.001	.003	.021	.003	.014	.016
	ES	.203	.186	.203	.217	.215	.153	.046	.016	.008	.008
UL = 5.87											
	EL	.785	.844	.821	.828	.828	.837	.873	.974	.976	.976
	EG	.096	.003	.006	-.01	.005	.004	.009	.004	.025	.016
	ES	.118	.153	.173	.178	.167	.159	.118	.022	-.00	.008

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P16D16 AB	UG = 0.44										
UL =	6.60										
	EL	.818	.859	.838	.841	.836	.859	.859	.894	.968	.972
	EG	.092	.032	.004	.003	.004	.000	.011	-.01	.026	.016
	ES	.091	.109	.158	.156	.160	.140	.130	.111	.006	.011
UL =	7.34										
	EL	.836	.848	.857	.861	.873	.870	.858	.880	.902	.975
	EG	.184	.013	.011	.021	-.00	-.00	.010	-.00	.015	.004
	ES	-.02	.140	.132	.117	.129	.131	.122	.123	.083	.021
P17E16 AB	UG = 0.88										
UL =	2.20										
	EL	.465	.604	.798	.897	.933	.935	.948	.953	.953	.946
	EG	.029	.008	-.00	.016	.010	.021	.029	.018	.028	.020
	ES	.506	.388	.203	.088	.057	.045	.023	.029	.019	.034
UL =	2.94										
	EL	.573	.707	.789	.871	.904	.913	.916	.922	.927	.929
	EG	.023	-.01	.022	.020	.015	.003	.024	.023	.022	.035
	ES	.404	.301	.189	.109	.081	.084	.061	.055	.051	.036
UL =	3.67										
	EL	.628	.672	.753	.810	.805	.851	.884	.910	.930	.934
	EG	.025	.008	.017	.029	.030	.023	.028	.024	.043	.022
	ES	.347	.320	.231	.161	.165	.126	.088	.065	.027	.043
UL =	4.40										
	EL	.750	.820	.828	.846	.846	.848	.863	.870	.900	.907
	EG	.113	-.07	.016	.013	.024	.034	.021	.031	.047	.026
	ES	.137	.248	.156	.141	.131	.118	.116	.100	.053	.067
UL =	5.14										
	EL	.801	.823	.821	.819	.816	.819	.851	.873	.916	.905
	EG	.052	.006	.017	.028	.028	.028	.033	.030	.045	.027
	ES	.147	.171	.162	.154	.155	.154	.116	.097	.040	.068
UL =	5.87										
	EL	.812	.823	.825	.823	.812	.827	.827	.880	.917	.925
	EG	.092	.027	.027	.027	.018	.037	.037	.018	.023	.036
	ES	.096	.150	.148	.150	.170	.136	.136	.101	.060	.039
UL =	6.60										
	EL	.852	.838	.833	.833	.835	.829	.840	.854	.892	.924
	EG	.086	.046	.015	.026	.025	.026	.035	.022	.027	.036
	ES	.061	.116	.152	.141	.139	.145	.125	.123	.080	.040
P18F16 AB	UG = 1.33										
UL =	1.47										
	EL	.430	.470	.849	.915	.935	.932	.940	.945	.942	.940
	EG	.056	.050	.013	.013	.031	.042	.020	.040	.072	.033
	ES	.515	.481	.138	.072	.034	.026	.040	.015	-.02	.027
UL =	2.20										
	EL	.471	.632	.814	.880	.895	.907	.922	.929	.929	.926
	EG	.028	.025	.050	.018	.027	.025	.044	.043	.053	.060
	ES	.501	.343	.137	.102	.079	.068	.035	.028	.018	.014

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P18F16 AB UG = 1.33											
UL = 2.94											
	EL	.592	.831	.863	.866	.873	.878	.897	.910	.922	.922
	EG	.041	.026	.000	.010	-.00	.019	.037	.024	.044	.048
	ES	.367	.143	.137	.124	.129	.104	.066	.066	.034	.030
UL = 3.67											
	EL	.727	.829	.848	.843	.838	.841	.862	.869	.891	.895
	EG	.031	-.01	.002	.035	.035	.035	.053	.031	.059	.028
	ES	.242	.177	.150	.122	.126	.124	.085	.100	.050	.076
UL = 4.40											
	EL	.780	.850	.813	.817	.824	.831	.834	.850	.862	.867
	EG	.066	.023	.018	.049	.038	.026	.036	.034	.064	.057
	ES	.155	.127	.169	.133	.138	.143	.130	.116	.075	.077
UL = 5.14											
	EL	.818	.831	.827	.824	.815	.831	.843	.852	.861	.868
	EG	.102	.047	.027	.048	.060	.036	.045	.023	.064	.044
	ES	.080	.122	.147	.127	.125	.132	.112	.125	.075	.087
P19G16 AB UG = 1.77											
UL = 1.47											
	EL	.440	.533	.831	.843	.874	.894	.901	.910	.903	.901
	EG	.075	.072	.015	.035	.051	.059	.026	.046	.078	.076
	ES	.484	.396	.153	.123	.075	.047	.073	.044	.018	.023
UL = 2.20											
	EL	.536	.778	.800	.829	.836	.849	.867	.878	.889	.896
	EG	.039	.023	.020	.037	.057	.034	.052	.051	.081	.064
	ES	.425	.199	.180	.134	.107	.117	.081	.072	.030	.040
UL = 2.94											
	EL	.709	.800	.811	.802	.819	.839	.857	.863	.877	.881
	EG	.002	.010	.018	.030	.049	.056	.043	.053	.072	.055
	ES	.289	.191	.171	.168	.132	.104	.100	.084	.051	.064
UL = 3.67											
	EL	.743	.815	.800	.807	.820	.835	.846	.861	.857	.872
	EG	.039	.018	.031	.019	.038	.057	.055	.064	.064	.068
	ES	.217	.167	.169	.174	.142	.108	.099	.075	.079	.060
UL = 4.40											
	EL	.794	.848	.816	.812	.810	.816	.829	.831	.833	.838
	EG	.053	.034	.039	.050	.061	.049	.058	.068	.079	.073
	ES	.153	.118	.145	.138	.129	.135	.113	.101	.088	.089
UL = 5.14											
	EL	.849	.843	.824	.822	.819	.817	.809	.813	.813	.826
	EG	.108	.045	.038	.080	.038	.060	.051	.071	.103	.087
	ES	.043	.112	.139	.098	.142	.123	.130	.116	.084	.087
P20H16 AB UG = 2.21											
UL = 0.73											
	EL	.407	.460	.859	.905	.921	.934	.936	.934	.931	.921
	EG	.091	.093	.022	.036	.033	.063	.063	.031	.095	.073
	ES	.502	.446	.119	.059	.046	.003	.001	.035	-.03	.007

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
---------------- P20H16 AB UG = 2.21 ----------------											
UL = 1.47											
	EL	.449	.640	.799	.826	.858	.875	.890	.897	.897	.900
	EG	.085	.023	.041	.058	.043	.051	.070	.048	.101	.064
	ES	.467	.337	.160	.116	.099	.074	.040	.055	.002	.037
UL = 2.20											
	EL	.496	.740	.790	.807	.824	.843	.853	.870	.875	.882
	EG	.056	.029	.043	.030	.059	.056	.023	.084	.104	.079
	ES	.448	.231	.167	.163	.117	.101	.124	.047	.021	.039
UL = 2.94											
	EL	.705	.770	.784	.805	.810	.822	.836	.853	.860	.862
	EG	.003	.035	.033	.062	.040	.059	.036	.086	.064	.082
	ES	.292	.195	.183	.133	.150	.119	.128	.061	.076	.056
UL = 3.67											
	EL	.807	.804	.797	.800	.786	.802	.816	.823	.832	.830
	EG	.019	.041	.031	.063	.065	.041	.081	.059	.079	.075
	ES	.174	.155	.172	.138	.150	.157	.103	.118	.089	.096
UL = 4.40											
	EL	.823	.825	.804	.790	.781	.788	.795	.809	.797	.800
	EG	.059	.048	.041	.064	.076	.075	.074	.072	.095	.116
	ES	.118	.127	.155	.146	.143	.137	.131	.120	.108	.085
---------------- P21I16 AB UG = 2.65 ----------------											
UL = 0.73											
	EL	.416	.481	.793	.840	.856	.867	.881	.879	.888	.885
	EG	.100	.080	.021	.046	.075	.073	.061	.082	.113	.090
	ES	.484	.439	.186	.114	.069	.059	.058	.039	.000	.024
UL = 1.47											
	EL	.468	.666	.775	.813	.837	.851	.860	.871	.875	.878
	EG	.060	.019	.045	.050	.067	.065	.064	.094	.093	.104
	ES	.472	.315	.180	.137	.095	.084	.076	.035	.031	.019
UL = 2.20											
	EL	.581	.748	.764	.788	.812	.826	.837	.848	.854	.850
	EG	.033	.039	.036	.075	.050	.069	.067	.087	.086	.120
	ES	.387	.213	.200	.137	.138	.105	.096	.065	.060	.030
UL = 2.94											
	EL	.709	.768	.777	.792	.799	.810	.821	.836	.834	.842
	EG	.002	.057	.034	.064	.063	.082	.081	.057	.100	.109
	ES	.289	.175	.189	.144	.139	.108	.099	.107	.067	.049
UL = 3.67											
	EL	.820	.807	.791	.785	.796	.789	.802	.811	.817	.828
	EG	.017	.040	.043	.075	.063	.064	.094	.071	.113	.087
	ES	.163	.153	.166	.140	.141	.147	.104	.118	.070	.085
---------------- P22J16 AB UG = 3.09 ----------------											
UL = 0.73											
	EL	.449	.564	.808	.838	.865	.872	.885	.885	.889	.887
	EG	.116	.056	.051	.046	.063	.073	.092	.071	.123	.078
	ES	.435	.380	.142	.116	.072	.056	.023	.044	-.01	.035

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
P22J16 AB UG = 3.09											
UL = 1.47											
	EL	.482	.746	.783	.809	.829	.846	.855	.864	.868	.873
	EG	.079	.039	.033	.061	.090	.087	.054	.084	.126	.092
	ES	.438	.215	.184	.130	.081	.066	.091	.052	.005	.035
UL = 2.20											
	EL	.589	.751	.766	.788	.803	.818	.835	.853	.848	.857
	EG	.042	.059	.057	.054	.073	.081	.068	.086	.108	.107
	ES	.369	.190	.177	.158	.124	.101	.097	.061	.044	.036
UL = 2.94											
	EL	.748	.776	.769	.791	.788	.808	.821	.827	.033	.829
	EG	.007	.066	.046	.085	.054	.072	.081	.101	.089	.099
	ES	.245	.158	.185	.124	.158	.120	.099	.072	.078	.072
P23K16 AB UG = 3.51											
UL = 0.73											
	EL	.407	.571	.764	.812	.846	.858	.860	.867	.875	.870
	EG	.091	.066	.036	.061	.066	.085	.106	.095	.115	.093
	ES	.502	.363	.200	.127	.088	.057	.034	.038	.011	.038
UL = 1.47											
	EL	.499	.702	.745	.787	.801	.823	.837	.849	.849	.844
	EG	.066	-.05	.156	.075	.062	.101	.078	.087	.108	.133
	ES	.435	.348	.100	.138	.136	.076	.085	.065	.043	.023
UL = 2.20											
	EL	.592	.732	.744	.769	.783	.797	.816	.818	.837	.830
	EG	.052	.062	.061	.078	.054	.105	.071	.081	.131	.099
	ES	.356	.206	.196	.153	.162	.098	.114	.101	.032	.071
P24L16 AB UG = 3.93											
UL = 0.73											
	EL	.462	.640	.755	.790	.815	.834	.836	.855	.857	.859
	EG	.083	.055	.059	.075	.092	.100	.068	.096	.160	.106
	ES	.456	.305	.186	.136	.093	.067	.096	.049	-.02	.034
UL = 1.47											
	EL	.532	.735	.747	.779	.804	.817	.826	.842	.852	.849
	EG	.072	.062	.081	.066	.062	.102	.090	.109	.118	.120
	ES	.396	.203	.172	.156	.134	.080	.083	.049	.030	.031
UL = 2.20											
	EL	.635	.748	.764	.778	.800	.796	.814	.825	.839	.841
	EG	.045	.060	.057	.076	.084	.095	.113	.090	.120	.109
	ES	.320	.192	.178	.146	.116	.109	.073	.084	.041	.050
P25M16 AB UG = 4.34											
UL = 0.73											
	EL	.481	.692	.770	.834	.836	.854	.859	.875	.877	.872
	EG	.080	.047	.067	.089	.089	.086	.117	.104	.135	.129
	ES	.440	.260	.163	.077	.075	.060	.024	.021	-.01	-.00
UL = 1.47											
	EL	.588	.744	.773	.795	.820	.826	.842	.857	.864	.862
	EG	.031	.082	.056	.074	.091	.111	.077	.138	.106	.130
	ES	.381	.174	.171	.131	.089	.062	.081	.004	.030	.008

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A14A13 IN	UG = 0.00										
UL = 5.96											
	EL	.506	.472	.390	.513	.490	.991	1.01	1.00	1.00	.998
	EG	-.03	-.01	-.07	-.00	.027	-.03	-.01	-.01	-.00	.002
	ES	.525	.537	.684	.489	.484	.039	.008	-.01	-.00	.001
UL = 7.16											
	EL	.555	.456	.567	.555	.567	.775	1.01	1.01	1.01	1.00
	EG	-.05	.032	-.02	-.02	-.02	-.06	-.01	-.01	-.01	-.01
	ES	.493	.512	.450	.462	.456	.283	.001	-.01	-.00	-.00
UL = 8.35											
	EL	.567	.579	.600	.588	.577	.559	1.01	1.01	1.00	1.00
	EG	-.05	-.02	-.01	-.01	.000	-.00	-.06	-.01	-.01	-.00
	ES	.479	.444	.406	.423	.423	.443	.048	-.01	-.00	-.00
UL = 9.54											
	EL	.584	.606	.628	.621	.635	.575	.845	1.03	1.01	1.01
	EG	-.02	-.02	-.01	-.01	-.02	-.00	-.07	-.03	-.01	-.01
	ES	.432	.409	.381	.385	.383	.429	.228	-.01	.000	-.00
UL = 10.74											
	EL	.656	.655	.648	.632	.659	.582	.616	1.03	1.04	1.00
	EG	-.03	-.01	-.01	-.01	-.00	.009	.019	-.09	-.04	-.01
	ES	.373	.356	.360	.374	.343	.408	.365	.064	-.02	-.01
UL = 11.93											
	EL	.662	.674	.675	.665	.661	.654	.662	.642	1.01	1.01
	EG	-.01	-.02	-.01	.000	.002	.002	.013	-.01	-.03	-.01
	ES	.347	.341	.330	.335	.336	.344	.324	.363	.015	.018
A16B13 IN	UG = 0.49										
UL = 4.77											
	EL	.409	.405	.366	.384	.633	.979	.984	.982	.979	.975
	EG	.025	.041	.016	.029	.000	.021	.016	.018	.021	.025
	ES	.566	.554	.618	.587	.367	.010	.002	.009	.005	.007
UL = 5.96											
	EL	.437	.452	.455	.436	.477	.966	.993	.991	.993	.989
	EG	.019	.023	.022	.003	.050	-.04	.007	.009	.007	.011
	ES	.544	.525	.523	.560	.474	.074	.003	.005	.003	.000
UL = 7.16											
	EL	.523	.523	.526	.517	.517	.717	.975	.982	.980	.973
	EG	-.00	-.00	.020	.013	.013	-.04	.025	.018	.020	.027
	ES	.478	.478	.454	.470	.470	.318	.012	.009	.005	.008
UL = 8.35											
	EL	.590	.517	.517	.573	.590	.596	.947	.973	.971	.973
	EG	-.03	.029	.029	.018	-.01	-.01	-.04	.027	.029	.027
	ES	.437	.453	.453	.409	.422	.413	.090	.008	.014	.007
UL = 9.54											
	EL	.580	.650	.659	.662	.315	.608	.781	.991	1.00	.993
	EG	.001	-.01	-.03	-.00	.147	.002	-.07	.009	.000	.007
	ES	.418	.364	.371	.342	.537	.390	.288	.005	.000	-.00
UL = 10.74											
	EL	.661	.669	.649	.646	.635	.567	.588	.825	.933	.947
	EG	-.02	-.00	-.01	.015	.004	.046	.027	-.01	.067	.053
	ES	.362	.333	.359	.339	.361	.388	.385	.182	.028	.027

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A17C13 IN UG = 0.92											
UL = 4.77											
	EL	.419	.433	.414	.420	.626	.961	.959	.952	.947	.942
	EG	-.00	.005	.031	.089	-.06	.025	.041	.048	.053	.058
	ES	.584	.562	.555	.491	.438	.014	.009	.002	.010	.005
UL = 5.96											
	EL	.486	.472	.454	.436	.449	.837	.936	.936	.934	.929
	EG	.026	.008	.044	.042	.064	-.01	.064	.064	.066	.071
	ES	.489	.520	.501	.522	.488	.173	.026	.015	.011	.024
UL = 7.16											
	EL	.528	.543	.520	.498	.510	.703	.952	.948	.945	.945
	EG	-.00	.022	.035	.023	.055	-.07	.048	.052	.055	.055
	ES	.475	.435	.437	.480	.434	.365	.012	.009	.016	.004
UL = 8.35											
	EL	.556	.585	.547	.555	.539	.539	.864	.953	.946	.942
	EG	-.01	.018	.020	.044	.041	.037	-.01	.047	.054	.058
	ES	.454	.397	.433	.401	.420	.424	.148	.012	.010	.012
UL = 9.54											
	EL	.611	.646	.616	.604	.599	.567	.590	.945	.943	.934
	EG	-.04	.004	.019	.025	.039	.011	.043	.005	.057	.066
	ES	.426	.350	.365	.371	.362	.422	.366	.050	.017	.021
UL = 10.74											
	EL	.653	.636	.631	.626	.613	.602	.597	.799	.959	.952
	EG	.004	.015	.023	.036	.037	.045	.046	-.03	.041	.048
	ES	.343	.349	.346	.337	.350	.353	.357	.234	.004	.012
UL = 11.93											
	EL	.726	.665	.653	.641	.640	.627	.625	.629	.839	.957
	EG	-.00	.017	.028	.035	.046	.044	.043	.046	-.00	.043
	ES	.276	.318	.318	.325	.314	.329	.332	.325	.164	.010
A18D13 IN UG = 1.76											
UL = 3.58											
	EL	.362	.310	.271	.318	.540	.935	.926	.920	.922	.905
	EG	.080	.094	.052	.135	.091	.065	.074	.080	.078	.095
	ES	.558	.596	.676	.547	.369	.021	.002	.001	-.01	.012
UL = 4.77											
	EL	.419	.423	.407	.368	.557	.909	.905	.890	.896	.892
	EG	.036	.043	.073	.087	-.02	.063	.095	.110	.104	.108
	ES	.545	.534	.519	.545	.461	.029	.019	.022	.007	.013
UL = 5.96											
	EL	.478	.488	.468	.442	.434	.831	.902	.906	.904	.885
	EG	.022	.027	.060	.062	.066	-.01	.098	.094	.096	.115
	ES	.500	.484	.472	.496	.500	.181	.020	.019	.009	.016
UL = 7.16											
	EL	.491	.517	.506	.472	.462	.663	.908	.900	.900	.890
	EG	.023	.052	.052	.063	.074	-.01	.092	.100	.100	.110
	ES	.486	.431	.442	.465	.464	.345	.029	.022	.017	.020
UL = 8.35											
	EL	.561	.548	.516	.524	.509	.488	.772	.909	.905	.888
	EG	.027	.031	.053	.077	.078	.091	.022	.091	.095	.112
	ES	.413	.421	.432	.400	.413	.422	.206	.018	.014	.027

Table 13 (continued)

	INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A18D13 IN UG = 1.76										
UL = 9.54										
EL	.608	.643	.602	.592	.558	.552	.545	.928	.910	.896
EG	-.02	.028	.038	.048	.048	.070	.072	.008	.090	.104
ES	.412	.329	.361	.360	.394	.378	.383	.064	.017	.017
UL = 10.74										
EL	.637	.656	.639	.604	.614	.550	.556	.790	.937	.900
EG	.004	.022	.035	.048	.070	.065	.078	.210	.063	.068
ES	.359	.323	.325	.349	.316	.385	.355	.239	.009	.032
UL = 11.93										
EL	.670	.682	.668	.638	.642	.624	.608	.601	.800	.903
EG	.034	.042	.032	.042	.062	.063	.069	.071	-.01	.097
ES	.296	.276	.300	.321	.296	.314	.323	.328	.212	.019
A19E13 IN UG = 3.53										
UL = 3.58										
EL	.347	.313	.315	.290	.461	.866	.870	.868	.860	.862
EG	.110	.098	.131	.104	.119	.134	.130	.132	.140	.138
ES	.543	.589	.554	.606	.420	.016	.013	.016	.014	.004
UL = 4.77										
EL	.460	.419	.402	.378	.359	.837	.852	.858	.852	.847
EG	.031	.073	.110	.122	.098	.070	.148	.142	.148	.153
ES	.509	.508	.489	.501	.544	.093	.022	.010	.013	.006
UL = 5.96										
EL	.453	.449	.434	.416	.403	.586	.586	.841	.839	.832
EG	.050	.080	.110	.108	.109	.099	.414	.159	.161	.168
ES	.497	.471	.456	.476	.488	.315	.144	.013	.025	.019
UL = 7.16										
EL	.522	.552	.501	.499	.461	.434	.824	.810	.814	.808
EG	.023	.057	.060	.117	.108	.100	.082	.190	.186	.192
ES	.455	.391	.439	.384	.431	.465	.094	.034	.021	.014
UL = 8.35										
EL	.563	.566	.559	.517	.498	.479	.627	.795	.787	.787
EG	-.03	.011	.120	.102	.117	.118	.071	.205	.213	.213
ES	.465	.423	.321	.381	.385	.403	.302	.041	.034	.030
UL = 9.54										
EL	.628	.604	.569	.530	.540	.509	.507	.681	.779	.781
EG	.024	.053	.082	.129	.124	.109	.120	.093	.221	.219
ES	.348	.343	.349	.341	.336	.382	.374	.227	.049	.039
UL = 10.74										
EL	.636	.639	.611	.567	.576	.545	.535	.517	.705	.773
EG	.059	.058	.078	.094	.123	.125	.134	.124	.131	.227
ES	.306	.303	.312	.339	.301	.330	.331	.358	.164	.049
UL = 11.93										
EL	.652	.665	.622	.602	.594	.576	.530	.574	.584	.799
EG	.089	.078	.083	.104	.119	.110	.118	.124	.130	.071
ES	.259	.257	.295	.294	.287	.315	.302	.302	.286	.130
UL = 3.58										
EL	.316	.327	.354	.284	.451	.844	.865	.859	.857	.853
EG	-.04	.080	.289	.135	.130	.129	.135	.141	.143	.147
ES	.728	.593	.357	.581	.420	.027	-.01	.004	.011	-.01

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A20F13 IN				UG = 5.25							
UL = 4.77											
	EL	.436	.395	.372	.379	.349	.798	.866	.874	.868	.860
	EG	.074	.102	.130	.165	.119	.055	.134	.126	.132	.140
	ES	.490	.503	.498	.456	.532	.147	-.01	-.01	.005	-.01
UL = 5.96											
	EL	.443	.439	.424	.398	.381	.541	.814	.830	.828	.818
	EG	.070	.108	.132	.151	.148	.098	.186	.170	.172	.182
	ES	.487	.453	.444	.452	.471	.361	.030	.007	.019	.003
UL = 7.16											
	EL	.482	.480	.462	.426	.408	.391	.771	.801	.813	.799
	EG	.081	.093	.135	.153	.156	.145	.132	.199	.187	.201
	ES	.436	.427	.403	.421	.435	.464	.098	.022	.032	-.01
UL = 8.35											
	EL	.508	.522	.498	.463	.461	.455	.600	.765	.771	.753
	EG	.069	.105	.123	.135	.158	.153	.084	.178	.229	.247
	ES	.424	.373	.379	.403	.381	.392	.315	.056	.014	.023
UL = 9.54											
	EL	.624	.552	.508	.512	.485	.471	.470	.640	.733	.719
	EG	.057	.118	.118	.149	.152	.162	.173	.108	.267	.281
	ES	.319	.330	.374	.339	.364	.367	.357	.253	.078	.040
UL = 10.74											
	EL	.656	.614	.553	.539	.543	.516	.496	.492	.655	.711
	EG	.079	.104	.117	.135	.173	.168	.171	.176	.111	.289
	ES	.265	.282	.329	.325	.284	.316	.333	.332	.234	.045
UL = 11.93											
	EL	.693	.693	.605	.601	.577	.573	.564	.543	.543	.546
	EG	.092	.075	.103	.132	.122	.151	.154	.156	.173	.180
	ES	.215	.231	.292	.266	.301	.276	.281	.301	.284	.274
A21G13 IN				UG = 7.01							
UL = 2.39											
	EL	.288	.183	.195	.167	.508	.755	.772	.765	.765	.753
	EG	.217	.146	.196	.177	.184	.245	.228	.235	.235	.247
	ES	.495	.670	.609	.656	.307	.043	.051	.023	.034	.035
UL = 3.58											
	EL	.370	.296	.288	.282	.379	.762	.782	.777	.775	.771
	EG	.130	.123	.150	.147	.138	.159	.218	.223	.225	.229
	ES	.500	.580	.562	.571	.484	.079	.029	.039	.040	.026
UL = 4.77											
	EL	.366	.366	.358	.363	.375	.732	.816	.818	.818	.807
	EG	.109	.144	.126	.140	.162	.083	.134	.182	.182	.193
	ES	.525	.490	.516	.497	.463	.185	.017	.035	.007	.014
UL = 5.96											
	EL	.406	.419	.406	.402	.410	.438	.774	.790	.794	.785
	EG	.112	.112	.152	.126	.128	.189	.153	.210	.206	.215
	ES	.482	.469	.442	.472	.462	.372	.073	.016	.014	.013
UL = 7.16											
	EL	.432	.435	.430	.432	.427	.437	.673	.766	.778	.776
	EG	.122	.126	.129	.155	.153	.139	.153	.234	.222	.224
	ES	.446	.439	.441	.412	.421	.424	.163	.000	.039	.018

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A21G13 IN	UG = 7.01										
UL = 8.35											
	EL	.532	.484	.466	.464	.469	.470	.478	.691	.736	.745
	EG	.080	.135	.128	.157	.182	.162	.157	.188	.264	.255
	ES	.388	.381	.407	.380	.349	.368	.365	.121	.026	.033
UL = 9.54											
	EL	.533	.511	.505	.503	.492	.490	.495	.502	.684	.702
	EG	.102	.138	.147	.170	.182	.175	.183	.176	.236	.298
	ES	.365	.350	.348	.327	.327	.335	.322	.322	.080	.037
UL = 10.74											
	EL	.642	.542	.531	.507	.505	.488	.494	.496	.522	.672
	EG	.102	.129	.173	.163	.186	.187	.184	.202	.222	.252
	ES	.256	.329	.296	.330	.309	.324	.323	.302	.256	.076
A22H13 IN	UG = 8.74										
UL = 2.39											
	EL	.277	.230	.206	.215	.391	.772	.790	.787	.776	.776
	EG	.161	.157	.140	.192	.232	.228	.210	.213	.224	.224
	ES	.562	.614	.653	.593	.377	.029	.036	.006	.017	.018
UL = 3.58											
	EL	.207	.214	.222	.237	.237	.793	.802	.813	.808	.804
	EG	.193	.187	.199	.181	.236	.109	.198	.187	.192	.196
	ES	.600	.599	.579	.582	.527	.098	.019	.005	-.00	.010
UL = 4.77											
	EL	.501	.270	.283	.251	.276	.662	.801	.803	.814	.812
	EG	.458	.192	.224	.180	.211	.100	.199	.197	.186	.188
	ES	.042	.538	.492	.570	.512	.237	.025	.015	-.01	-.01
UL = 5.96											
	EL	.447	.382	.365	.358	.362	.471	.758	.780	.784	.789
	EG	.130	.147	.178	.193	.179	.116	.202	.220	.216	.211
	ES	.423	.471	.457	.450	.458	.413	.041	.032	.024	.011
UL = 7.16											
	EL	.512	.370	.320	.365	.337	.338	.638	.778	.787	.778
	EG	.452	.181	.184	.217	.214	.200	.175	.222	.213	.222
	ES	.036	.449	.496	.418	.449	.462	.137	.028	.034	-.01
UL = 8.35											
	EL	.554	.476	.437	.448	.435	.427	.435	.739	.781	.788
	EG	.061	.145	.153	.175	.188	.172	.202	.192	.219	.212
	ES	.385	.379	.410	.376	.378	.401	.364	.069	.021	.000
UL = 9.54											
	EL	.483	.494	.478	.479	.477	.486	.433	.584	.712	.736
	EG	.143	.147	.155	.177	.178	.171	.155	.185	.222	.264
	ES	.374	.359	.367	.344	.345	.343	.363	.230	.066	.020
UL = 10.74											
	EL	.577	.492	.461	.458	.464	.449	.460	.472	.613	.719
	EG	.157	.187	.191	.198	.212	.207	.218	.219	.182	.281
	ES	.266	.321	.348	.344	.324	.344	.322	.309	.205	.070
UL = 2.39											
	EL	.295	.229	.218	.214	.374	.806	.811	.804	.797	.788
	EG	.121	.162	.174	.214	.235	.194	.189	.196	.203	.212
	ES	.584	.608	.608	.571	.391	.029	.014	-.01	.007	.006

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A23I13 IN	UG = 10.46										
UL = 3.58											
	EL	.267	.257	.279	.292	.322	.753	.734	.786	.784	.777
	EG	.235	.093	.204	.159	.188	.140	.216	.214	.216	.223
	ES	.498	.650	.516	.549	.490	.106	.016	.007	.019	.000
UL = 4.77											
	EL	.346	.341	.342	.336	.357	.651	.775	.790	.786	.786
	EG	.180	.196	.189	.142	.171	.118	.225	.210	.214	.214
	ES	.474	.464	.468	.521	.472	.232	.038	.005	.001	.007
UL = 5.96											
	EL	.346	.228	.304	.292	.303	.482	.760	.773	.797	.800
	EG	.296	.057	.225	.187	.203	.167	.166	.227	.203	.200
	ES	.358	.715	.471	.521	.494	.350	.074	.008	.001	.006
UL = 7.16											
	EL	.477	.220	.308	.329	.326	.338	.680	.778	.793	.802
	EG	.246	.050	.201	.246	.225	.217	.166	.222	.207	.198
	ES	.277	.730	.491	.425	.449	.445	.155	.056	.003	-.01
UL = 8.35											
	EL	.478	.301	.395	.399	.400	.405	.440	.736	.790	.803
	EG	.284	.032	.196	.211	.199	.172	.205	.154	.210	.197
	ES	.238	.667	.408	.390	.400	.423	.355	.110	.027	-.01
UL = 9.54											
	EL	.467	.347	.417	.425	.441	.424	.454	.512	.753	.787
	EG	.297	.054	.191	.198	.207	.180	.192	.222	.190	.213
	ES	.236	.600	.392	.377	.352	.396	.354	.267	.057	.012
UL = 10.74											
	EL	.571	.386	.479	.474	.495	.478	.491	.519	.609	.776
	EG	.322	.017	.188	.185	.214	.175	.179	.196	.178	.183
	ES	.107	.597	.333	.341	.292	.346	.329	.285	.212	.041
A24J13 IN	UG = 12.17										
UL = 2.39											
	EL	.274	.224	.203	.189	.395	.765	.731	.779	.768	.765
	EG	.162	.187	.209	.177	.241	.235	.219	.221	.232	.235
	ES	.564	.589	.588	.634	.364	.021	-.01	.033	.016	-.02
UL = 3.58											
	EL	.271	.294	.301	.302	.349	.759	.786	.788	.782	.786
	EG	.171	.191	.188	.159	.192	.160	.214	.212	.218	.214
	ES	.557	.515	.511	.538	.459	.081	.038	.006	-.02	-.01
UL = 4.77											
	EL	.287	.308	.319	.339	.346	.625	.776	.783	.780	.783
	EG	.210	.195	.207	.174	.182	.164	.224	.217	.220	.217
	ES	.503	.497	.474	.487	.472	.210	.050	-.00	.021	-.02
UL = 5.96											
	EL	.335	.360	.373	.374	.382	.428	.723	.785	.796	.792
	EG	.178	.180	.185	.179	.180	.195	.185	.215	.204	.208
	ES	.487	.459	.442	.447	.437	.378	.093	.002	.013	-.02
UL = 7.16											
	EL	.383	.407	.399	.396	.401	.419	.638	.761	.787	.794
	EG	.154	.174	.189	.190	.199	.188	.169	.239	.213	.206
	ES	.463	.419	.412	.413	.400	.393	.193	.058	.006	-.01

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A24J13 IN	UG = 12.17										
UL = 8.35											
	EL	.465	.451	.450	.459	.461	.451	.461	.686	.778	.778
	EG	.128	.191	.169	.187	.186	.177	.171	.190	.222	.222
	ES	.406	.358	.381	.354	.353	.371	.368	.124	.005	.011
UL = 9.54											
	EL	.458	.479	.446	.462	.496	.490	.504	.544	.706	.715
	EG	.170	.205	.171	.185	.207	.164	.161	.211	.180	.285
	ES	.371	.316	.383	.353	.297	.346	.334	.245	.114	.031
A25K13 IN	UG = 13.94										
UL = 2.39											
	EL	.308	.200	.192	.183	.370	.770	.774	.767	.767	.761
	EG	.176	.194	.203	.197	.254	.230	.226	.233	.233	.239
	ES	.516	.606	.605	.620	.377	.058	-.01	-.01	.005	.014
UL = 3.58											
	EL	.297	.288	.301	.308	.342	.752	.774	.781	.776	.772
	EG	.166	.194	.177	.184	.179	.164	.226	.219	.224	.228
	ES	.537	.518	.523	.508	.480	.084	.021	-.00	-.01	-.03
UL = 4.77											
	EL	.294	.313	.334	.342	.357	.625	.749	.778	.776	.778
	EG	.222	.210	.199	.173	.171	.153	.251	.222	.224	.222
	ES	.484	.478	.467	.485	.472	.222	.062	.005	-.01	-.03
UL = 5.96											
	EL	.300	.315	.334	.352	.373	.413	.711	.759	.775	.792
	EG	.211	.197	.193	.218	.196	.185	.236	.241	.225	.208
	ES	.489	.487	.472	.430	.431	.402	.052	.020	.013	-.02
UL = 7.16											
	EL	.316	.372	.382	.400	.414	.431	.615	.748	.775	.792
	EG	.187	.208	.186	.188	.176	.182	.204	.252	.225	.208
	ES	.496	.420	.432	.411	.410	.387	.181	.037	.029	-.02
UL = 8.35											
	EL	.389	.408	.421	.447	.448	.454	.467	.680	.758	.782
	EC	.205	.190	.104	.209	.176	.182	.191	.210	.242	.218
	ES	.406	.402	.396	.344	.376	.364	.342	.110	.049	-.03
UL = 9.54											
	EL	.506	.422	.435	.459	.499	.459	.461	.518	.719	.768
	EG	.193	.194	.176	.203	.234	.185	.171	.213	.190	.232
	ES	.301	.384	.388	.338	.268	.356	.368	.269	.090	.016
A26L13 IN	UG = 15.64										
UL = 2.39											
	EL	.211	.196	.178	.178	.384	.757	.776	.773	.764	.762
	EG	.217	.207	.227	.216	.274	.243	.224	.227	.236	.238
	ES	.572	.597	.595	.606	.341	.064	.003	-.02	.034	-.05
UL = 3.58											
	EL	.303	.258	.253	.250	.290	.702	.749	.751	.756	.726
	EG	.202	.231	.206	.207	.227	.189	.251	.249	.244	.274
	ES	.495	.510	.541	.542	.483	.109	.028	-.01	.022	-.01

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A26L13 IN UG = 15.64											
UL = 4.77											
	EL	.328	.269	.274	.280	.298	.594	.729	.754	.767	.765
	EG	.205	.215	.235	.209	.234	.169	.271	.246	.233	.235
	ES	.467	.516	.491	.511	.468	.237	.026	.001	.027	-.01
UL = 5.96											
	EL	.374	.282	.292	.309	.318	.375	.679	.735	.758	.753
	EG	.251	.231	.231	.250	.235	.233	.218	.265	.242	.247
	ES	.375	.487	.477	.440	.447	.393	.103	.049	-.01	-.01
UL = 7.16											
	EL	.348	.370	.371	.400	.404	.404	.614	.714	.759	.770
	EG	.187	.215	.181	.233	.198	.190	.193	.286	.241	.230
	ES	.465	.416	.448	.367	.398	.407	.193	.054	.009	.003
UL = 8.35											
	EL	.330	.372	.396	.409	.413	.433	.443	.654	.734	.761
	EG	.250	.219	.201	.223	.204	.226	.226	.201	.266	.239
	ES	.420	.409	.402	.368	.383	.341	.330	.145	.022	.043
UL = 9.54											
	EL	.443	.414	.438	.435	.479	.442	.448	.508	.693	.760
	EG	.232	.198	.220	.210	.244	.205	.207	.240	.192	.240
	ES	.325	.388	.343	.355	.277	.353	.345	.252	.115	.002
A27M13 IN UG = 17.31											
UL = 2.39											
	EL	.169	.096	.090	.108	.398	.749	.763	.765	.758	.749
	EG	.377	.251	.276	.234	.273	.251	.237	.235	.242	.251
	ES	.455	.653	.633	.658	.329	.017	.038	.006	-.01	-.02
UL = 3.58											
	EL	.230	.224	.241	.240	.285	.725	.758	.761	.754	.747
	EG	.230	.215	.240	.224	.274	.183	.242	.239	.246	.253
	ES	.539	.561	.519	.536	.441	.092	.035	-.00	.001	-.01
UL = 4.77											
	EL	.287	.286	.303	.316	.331	.630	.729	.756	.758	.747
	EG	.171	.229	.242	.203	.217	.173	.271	.244	.242	.253
	ES	.542	.486	.454	.482	.452	.197	.055	.028	-.04	-.00
UL = 5.96											
	EL	.293	.242	.260	.369	.406	.427	.653	.736	.758	.765
	EG	.199	.251	.269	.215	.191	.212	.225	.264	.242	.235
	ES	.508	.507	.470	.416	.403	.361	.122	-.01	.054	-.01
UL = 7.16											
	EL	.393	.291	.307	.412	.401	.360	.477	.696	.747	.767
	EG	.219	.254	.224	.227	.204	.223	.261	.236	.253	.233
	ES	.389	.455	.469	.361	.394	.417	.262	.069	.004	-.01
UL = 8.35											
	EL	.346	.369	.399	.432	.414	.434	.467	.636	.719	.752
	EG	.219	.226	.211	.234	.193	.214	.249	.198	.246	.248
	ES	.435	.405	.390	.334	.394	.351	.284	.165	.035	-.01
UL = 9.54											
	EL	.354	.430	.431	.422	.482	.433	.467	.501	.677	.731
	EG	.261	.235	.206	.194	.264	.192	.226	.238	.211	.269
	ES	.385	.335	.362	.384	.254	.375	.307	.261	.111	.017

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A14A13 AB UG = 0.00											
UL = 5.96											
	EL	.492	.455	.436	.480	.446	.991	1.01	1.00	1.00	.998
	EG	-.01	.011	.020	-.00	.015	-.02	-.01	-.01	-.00	.002
	ES	.516	.534	.544	.522	.539	.033	.002	-.00	-.00	.001
UL = 7.16											
	EL	.551	.402	.526	.521	.537	.775	1.01	1.01	1.01	1.00
	EG	.001	.037	-.01	.000	-.00	-.04	-.01	-.01	-.01	-.01
	ES	.448	.561	.482	.479	.465	.260	.001	-.01	-.00	-.00
UL = 8.35											
	EL	.552	.559	.581	.564	.557	.539	1.01	1.01	1.00	1.00
	EG	-.03	-.01	.003	-.01	.010	.008	-.03	-.01	-.01	-.00
	ES	.479	.455	.416	.441	.433	.453	.020	-.01	.003	-.01
UL = 9.54											
	EL	.562	.587	.621	.597	.622	.566	.845	1.03	1.01	1.01
	EG	-.01	-.01	.000	-.01	-.01	.006	-.04	-.03	-.01	-.01
	ES	.450	.424	.379	.408	.390	.428	.199	-.01	.006	-.01
UL = 10.74											
	EL	.644	.626	.654	.607	.636	.575	.592	1.03	1.04	1.00
	EG	-.02	-.01	.006	-.00	-.00	.019	.020	-.05	-.04	-.01
	ES	.379	.388	.340	.397	.366	.406	.389	.019	-.01	-.01
UL = 11.93											
	EL	.631	.658	.654	.637	.634	.626	.611	.672	1.01	1.01
	EG	-.00	-.00	.006	.009	.010	.010	.010	.030	-.02	-.01
	ES	.370	.344	.340	.354	.356	.364	.379	.298	.004	.018
A16B13 AB UG = 0.49											
UL = 4.77											
	EL	.418	.488	.435	.441	.633	.979	.984	.982	.979	.975
	EG	-.08	.072	.009	.007	-.03	.021	.016	.018	.021	.025
	ES	.661	.440	.556	.553	.401	-.02	.002	.004	.005	.007
UL = 5.96											
	EL	.434	.448	.442	.445	.448	.966	.993	.991	.993	.989
	EG	.028	.031	.017	.027	.025	-.01	.007	.009	.007	.011
	ES	.538	.521	.541	.528	.527	.040	.009	-.00	-.00	.000
UL = 7.16											
	EL	.516	.495	.506	.500	.487	.717	.975	.982	.980	.973
	EG	.026	.002	.030	.027	.011	-.00	.025	.018	.020	.027
	ES	.458	.503	.464	.473	.502	.284	.018	.003	.005	.002
UL = 8.35											
	EL	.579	.509	.509	.556	.585	.583	.947	.973	.971	.973
	EG	-.02	.039	.039	.010	.001	-.01	-.02	.027	.029	.027
	ES	.442	.452	.452	.434	.413	.425	.073	.002	.014	.007
UL = 9.54											
	EL	.590	.660	.667	.686	.385	.535	.781	.991	1.00	.993
	EG	-.00	-.01	-.03	.029	.268	-.18	-.04	.009	.000	.007
	ES	.413	.354	.367	.285	.347	.648	.259	.005	.000	-.01
UL = 10.74											
	EL	.658	.644	.643	.625	.621	.548	.559	.825	.933	.947
	EG	-.01	-.01	.006	.015	.011	.049	.031	.026	.067	.053
	ES	.349	.362	.351	.360	.368	.403	.400	.149	.028	.027

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A17C13 AB UG = 0.92											
UL = 4.77											
	EL	.410	.428	.459	.370	.626	.961	.959	.952	.947	.942
	EG	-.01	.007	.098	.031	-.02	.031	.041	.048	.053	.058
	ES	.596	.565	.443	.599	.393	.008	-.00	.007	.004	.023
UL = 5.96											
	EL	.468	.445	.428	.416	.416	.837	.936	.936	.934	.929
	EG	.042	.015	.052	.058	.063	.030	.054	.064	.066	.071
	ES	.490	.539	.520	.526	.520	.133	.020	.015	.016	.024
UL = 7.16											
	EL	.521	.517	.502	.483	.481	.703	.952	.948	.945	.945
	EG	.023	.024	.037	.041	.053	-.04	.048	.052	.055	.055
	ES	.455	.459	.461	.476	.466	.336	.006	.009	.011	.010
UL = 8.35											
	EL	.540	.567	.536	.534	.517	.525	.864	.953	.946	.942
	EG	-.00	.021	.032	.044	.041	.044	.022	.047	.054	.058
	ES	.461	.411	.433	.423	.442	.432	.114	.012	.010	.017
UL = 9.54											
	EL	.557	.672	.603	.584	.576	.571	.531	.945	.943	.934
	EG	-.08	.047	.020	.018	.028	.032	.048	.039	.057	.066
	ES	.523	.281	.377	.397	.396	.397	.371	.016	.017	.021
UL = 10.74											
	EL	.634	.623	.618	.596	.604	.580	.584	.799	.959	.952
	EG	.005	.021	.029	.029	.047	.045	.052	.012	.041	.048
	ES	.360	.356	.353	.375	.348	.375	.364	.190	.004	.012
UL = 11.93											
	EL	.721	.647	.645	.627	.603	.613	.606	.621	.839	.957
	EG	.008	.021	.038	.042	.037	.051	.047	.056	.030	.043
	ES	.271	.333	.317	.331	.360	.336	.347	.323	.131	.010
A18D13 AB UG = 1.76											
UL = 3.58											
	EL	.356	.328	.342	.315	.540	.935	.926	.920	.922	.905
	EG	.021	.074	.117	.081	.113	.065	.074	.080	.078	.095
	ES	.623	.598	.541	.605	.347	.010	.002	.012	-.01	.012
UL = 4.77											
	EL	.398	.414	.390	.353	.557	.909	.905	.890	.896	.892
	EG	.023	.048	.065	.084	.021	.063	.095	.110	.104	.108
	ES	.579	.538	.545	.563	.422	.029	.007	.022	.007	.025
UL = 5.96											
	EL	.451	.467	.435	.417	.424	.831	.902	.906	.904	.885
	EG	.027	.038	.054	.069	.093	.010	.098	.094	.096	.115
	ES	.521	.495	.511	.515	.483	.158	.020	.008	.015	.022
UL = 7.16											
	EL	.471	.492	.477	.444	.459	.663	.908	.900	.900	.890
	EG	.041	.059	.055	.072	.109	-.01	.092	.100	.100	.110
	ES	.488	.449	.468	.484	.432	.345	.023	.022	.017	.026
UL = 8.35											
	EL	.540	.537	.508	.497	.490	.472	.772	.909	.905	.888
	EG	.029	.042	.068	.073	.082	.099	.056	.091	.095	.112
	ES	.431	.421	.424	.430	.428	.429	.172	.012	.014	.027

Table 13 (continued)

	INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A18D13 AB UG = 1.76										
UL = 9.54										
EL	.593	.631	.585	.583	.527	.534	.531	.928	.910	.896
EG	-.01	.034	.041	.058	.041	.073	.079	.047	.090	.104
ES	.420	.335	.375	.359	.432	.393	.390	.025	.017	.023
UL = 10.74										
EL	.622	.648	.621	.579	.585	.551	.546	.790	.937	.900
EG	.011	.031	.039	.049	.068	.082	.083	.210	.063	.074
ES	.366	.321	.340	.372	.347	.367	.371	.206	.003	.026
UL = 11.93										
EL	.666	.667	.657	.630	.621	.601	.596	.583	.800	.903
EG	.043	.044	.038	.051	.061	.063	.075	.074	.028	.097
ES	.290	.289	.305	.319	.318	.336	.329	.342	.173	.025
A19E13 AB UG = 3.53										
UL = 3.58										
EL	.337	.313	.305	.289	.461	.866	.870	.868	.860	.862
EG	.092	.104	.113	.110	.141	.134	.130	.132	.140	.138
ES	.571	.583	.582	.601	.398	.016	.025	.005	.014	.004
UL = 4.77										
EL	.431	.386	.363	.338	.328	.837	.852	.858	.852	.847
EG	.061	.095	.118	.130	.130	.093	.148	.142	.148	.153
ES	.508	.519	.519	.532	.542	.070	.017	.021	.019	.006
UL = 5.96										
EL	.446	.441	.418	.399	.395	.586	.586	.841	.839	.832
EG	.061	.090	.107	.105	.119	.116	.414	.159	.161	.168
ES	.493	.469	.475	.495	.487	.298	.150	.007	.014	.025
UL = 7.16										
EL	.492	.542	.481	.461	.438	.415	.824	.810	.814	.808
EG	.022	.079	.070	.097	.114	.116	.140	.190	.186	.192
ES	.485	.380	.449	.442	.448	.469	.036	.045	.015	.020
UL = 8.35										
EL	.544	.543	.537	.485	.477	.436	.627	.795	.787	.787
EG	.012	.039	.136	.112	.144	.117	.112	.205	.213	.213
ES	.444	.418	.326	.402	.379	.447	.262	.052	.034	.036
UL = 9.54										
EL	.613	.595	.547	.495	.512	.492	.483	.681	.779	.781
EG	.039	.074	.087	.119	.121	.123	.126	.143	.221	.219
ES	.348	.331	.366	.386	.367	.385	.391	.176	.044	.039
UL = 10.74										
EL	.613	.625	.587	.550	.536	.512	.510	.507	.705	.773
EG	.070	.076	.089	.114	.120	.130	.147	.152	.159	.227
ES	.317	.299	.324	.337	.344	.358	.343	.341	.137	.055
UL = 11.93										
EL	.659	.673	.637	.600	.595	.574	.596	.579	.592	.799
EG	.085	.074	.087	.088	.108	.093	.121	.116	.126	.124
ES	.255	.253	.276	.312	.297	.333	.283	.305	.282	.077
UL = 3.58										
EL	.302	.302	.343	.261	.451	.844	.855	.859	.857	.853
EG	.010	.093	.306	.152	.158	.129	.135	.141	.143	.147
ES	.689	.606	.351	.587	.392	.027	.004	.004	-.01	.009

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A20F13 AB UG = 5.25											
UL = 4.77											
	EL	.410	.378	.346	.355	.336	.798	.866	.874	.868	.860
	EG	.063	.110	.121	.155	.137	.101	.134	.126	.132	.140
	ES	.526	.512	.533	.490	.527	.101	-.01	.002	-.00	-.01
UL = 5.96											
	EL	.428	.411	.380	.369	.348	.541	.814	.830	.828	.818
	EG	.108	.122	.121	.165	.159	.132	.186	.170	.172	.182
	ES	.463	.468	.500	.466	.493	.326	.024	.007	.019	.003
UL = 7.16											
	EL	.469	.473	.440	.395	.383	.395	.771	.801	.813	.799
	EG	.088	.107	.129	.135	.147	.177	.143	.199	.187	.201
	ES	.443	.420	.430	.470	.470	.428	.086	-.00	.038	.000
UL = 8.35											
	EL	.504	.507	.491	.455	.437	.448	.600	.765	.771	.753
	EG	.078	.096	.126	.139	.137	.156	.102	.229	.229	.247
	ES	.418	.397	.383	.406	.427	.396	.298	.006	.036	.047
UL = 9.54											
	EL	.631	.552	.522	.503	.499	.482	.468	.640	.733	.719
	EG	.053	.107	.122	.126	.156	.162	.157	.113	.267	.281
	ES	.316	.341	.356	.371	.345	.356	.376	.247	.039	.040
UL = 10.74											
	EL	.662	.588	.545	.546	.502	.489	.433	.487	.655	.711
	EG	.099	.094	.127	.160	.148	.159	.177	.189	.145	.289
	ES	.239	.317	.328	.294	.349	.353	.339	.323	.201	.045
UL = 11.93											
	EL	.694	.702	.588	.586	.575	.545	.540	.530	.531	.558
	EG	.106	.099	.105	.134	.140	.142	.149	.162	.179	.209
	ES	.199	.199	.306	.280	.285	.313	.311	.308	.290	.233
A21G13 AB UG = 7.01											
UL = 2.39											
	EL	.272	.166	.174	.145	.508	.755	.772	.765	.765	.753
	EG	.225	.172	.201	.182	.207	.245	.228	.235	.235	.247
	ES	.503	.662	.625	.673	.285	.048	.039	.045	.023	.041
UL = 3.58											
	EL	.360	.284	.277	.271	.379	.762	.782	.777	.775	.771
	EG	.135	.129	.161	.158	.138	.176	.218	.223	.225	.229
	ES	.505	.586	.562	.571	.484	.062	.029	.050	.029	.038
UL = 4.77											
	EL	.370	.366	.361	.363	.372	.732	.816	.818	.818	.807
	EG	.122	.133	.136	.134	.136	.111	.184	.182	.182	.193
	ES	.508	.501	.504	.502	.492	.157	.029	.007	-.00	.020
UL = 5.96											
	EL	.378	.393	.379	.378	.387	.418	.774	.790	.794	.785
	EG	.118	.125	.149	.144	.150	.200	.188	.210	.206	.215
	ES	.504	.482	.472	.479	.463	.382	.038	.033	.025	.019
UL = 7.16											
	EL	.446	.450	.447	.447	.441	.450	.673	.766	.778	.776
	EG	.107	.114	.132	.154	.146	.115	.169	.234	.222	.224
	ES	.447	.437	.422	.399	.413	.435	.158	.022	.017	.012

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A21G13 AB	UG = 7.01										
UL = 8.35											
	EL	.523	.465	.450	.448	.444	.462	.461	.691	.736	.745
	EG	.115	.134	.141	.165	.150	.195	.160	.215	.264	.255
	ES	.362	.401	.409	.388	.407	.343	.379	.093	.032	.021
UL = 9.54											
	EL	.513	.485	.468	.473	.453	.448	.463	.495	.684	.702
	EG	.143	.163	.149	.180	.173	.162	.188	.236	.264	.298
	ES	.344	.352	.383	.347	.374	.390	.349	.269	.053	.037
UL = 10.74											
	EL	.648	.557	.525	.515	.518	.492	.493	.506	.530	.672
	EG	.099	.138	.143	.159	.191	.174	.161	.202	.223	.252
	ES	.253	.305	.332	.326	.291	.334	.346	.292	.246	.076
A22H13 AB	UG = 8.74										
UL = 2.39											
	EL	.279	.238	.218	.219	.391	.772	.790	.787	.776	.776
	EG	.129	.163	.162	.168	.248	.228	.210	.213	.224	.224
	ES	.592	.598	.620	.614	.360	.029	.030	.001	.040	.000
UL = 3.58											
	EL	.304	.293	.287	.309	.300	.793	.802	.813	.808	.804
	EG	.171	.170	.128	.145	.194	.160	.198	.187	.192	.196
	ES	.526	.538	.585	.546	.506	.047	.019	-.00	.035	-.01
UL = 4.77											
	EL	.428	.359	.359	.350	.358	.662	.801	.803	.814	.812
	EG	.101	.148	.159	.158	.154	.129	.199	.197	.186	.188
	ES	.471	.493	.482	.492	.488	.209	.059	-.01	-.01	-.01
UL = 5.96											
	EL	.467	.404	.390	.377	.381	.471	.758	.780	.784	.789
	EG	.112	.130	.182	.167	.148	.122	.184	.220	.216	.211
	ES	.421	.465	.428	.457	.471	.407	.058	.015	.002	.011
UL = 7.16											
	EL	.410	.442	.410	.422	.410	.414	.638	.778	.787	.778
	EG	.133	.140	.167	.150	.178	.162	.187	.222	.213	.222
	ES	.457	.418	.423	.429	.412	.424	.176	.017	.034	-.01
UL = 8.35											
	EL	.539	.456	.416	.433	.410	.414	.423	.739	.781	.788
	EG	.076	.149	.158	.188	.184	.190	.219	.203	.219	.212
	ES	.385	.395	.426	.378	.407	.396	.358	.058	.015	.012
UL = 9.54											
	EL	.457	.469	.453	.449	.453	.462	.460	.584	.712	.736
	EG	.163	.165	.179	.175	.195	.189	.183	.196	.216	.264
	ES	.380	.366	.368	.376	.352	.349	.356	.219	.072	.044
UL = 10.74											
	EL	.592	.503	.480	.482	.470	.480	.456	.482	.613	.719
	EG	.150	.165	.182	.197	.181	.220	.186	.197	.199	.281
	ES	.258	.332	.338	.320	.349	.300	.348	.320	.188	.046
UL = 2.39											
	EL	.298	.234	.219	.212	.374	.806	.811	.804	.797	.788
	EG	.127	.182	.167	.188	.235	.194	.139	.196	.203	.212
	ES	.575	.584	.613	.600	.391	.012	-.00	.003	.007	.006

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A23I13 AB UG = 10.46											
UL = 3.58											
	EL	.285	.296	.306	.323	.348	.753	.784	.786	.784	.777
	EG	.126	.118	.169	.149	.170	.163	.216	.214	.216	.223
	ES	.589	.586	.526	.528	.482	.084	.028	.007	.008	.017
UL = 4.77											
	EL	.348	.341	.343	.348	.362	.651	.775	.790	.786	.786
	EG	.156	.162	.156	.170	.163	.135	.225	.210	.214	.214
	ES	.496	.497	.501	.482	.475	.215	.032	-.01	.018	-.01
UL = 5.96											
	EL	.350	.274	.320	.330	.331	.482	.760	.773	.797	.800
	EG	.240	.051	.184	.196	.190	.162	.178	.227	.203	.200
	ES	.410	.675	.496	.474	.480	.356	.063	.008	.007	.000
UL = 7.16											
	EL	.478	.276	.336	.340	.341	.364	.680	.778	.793	.802
	EG	.207	.056	.187	.207	.190	.204	.133	.222	.207	.198
	ES	.315	.669	.477	.453	.469	.432	.137	.011	.037	-.01
UL = 8.35											
	EL	.471	.348	.412	.414	.419	.431	.469	.736	.790	.803
	EG	.226	.025	.166	.176	.173	.159	.213	.165	.210	.197
	ES	.303	.627	.422	.410	.408	.410	.317	.099	-.01	-.00
UL = 9.54											
	EL	.472	.344	.424	.427	.427	.429	.461	.516	.753	.787
	EG	.302	.044	.199	.197	.180	.183	.200	.225	.190	.213
	ES	.226	.612	.377	.376	.393	.388	.339	.259	.057	-.01
UL = 10.74											
	EL	.567	.427	.489	.488	.491	.502	.505	.524	.631	.776
	EG	.301	.025	.166	.172	.171	.180	.167	.171	.196	.194
	ES	.132	.548	.345	.340	.338	.317	.328	.305	.174	.030
A24J13 AB UG = 12.17											
UL = 2.39											
	EL	.248	.182	.153	.150	.395	.765	.781	.779	.768	.765
	EG	.237	.203	.200	.219	.258	.235	.219	.221	.232	.235
	ES	.515	.616	.646	.632	.347	.038	.023	-.01	.033	-.02
UL = 3.58											
	EL	.272	.294	.301	.302	.349	.759	.786	.788	.782	.786
	EG	.179	.191	.188	.154	.192	.154	.214	.212	.218	.214
	ES	.549	.515	.511	.544	.459	.086	.003	-.02	-.00	-.02
UL = 4.77											
	EL	.287	.304	.309	.331	.342	.625	.776	.783	.780	.783
	EG	.225	.192	.178	.156	.179	.176	.224	.217	.220	.217
	ES	.488	.504	.513	.513	.480	.199	.014	-.01	.021	-.03
UL = 5.96											
	EL	.313	.345	.352	.354	.365	.415	.723	.785	.796	.792
	EG	.181	.199	.185	.183	.189	.212	.213	.215	.204	.208
	ES	.506	.456	.464	.462	.446	.372	.064	.030	.013	-.03
UL = 7.16											
	EL	.387	.400	.389	.389	.396	.411	.638	.761	.787	.794
	EG	.168	.166	.177	.183	.196	.180	.192	.239	.213	.206
	ES	.446	.434	.434	.428	.408	.409	.170	.025	.028	-.04

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A24J13 AB UG = 12.17											
UL = 8.35											
	EL	.443	.429	.427	.422	.432	.436	.465	.686	.778	.778
	EG	.139	.196	.175	.166	.178	.196	.221	.201	.222	.222
	ES	.417	.375	.398	.412	.390	.368	.314	.113	.017	-.01
UL = 9.54											
	EL	.438	.457	.425	.435	.468	.468	.438	.531	.706	.715
	EG	.188	.210	.187	.188	.199	.175	.181	.223	.214	.285
	ES	.374	.333	.388	.377	.333	.357	.331	.246	.080	.037
A25K13 AB UG = 13.94											
UL = 2.39											
	EL	.298	.194	.189	.180	.370	.770	.774	.767	.767	.761
	EG	.150	.202	.227	.220	.254	.230	.226	.233	.233	.239
	ES	.552	.604	.584	.600	.377	.036	-.01	-.01	.005	-.02
UL = 3.58											
	EL	.299	.289	.304	.309	.347	.752	.774	.781	.776	.772
	EG	.158	.177	.186	.162	.215	.152	.226	.219	.224	.228
	ES	.544	.534	.510	.530	.438	.096	.057	-.05	.012	-.05
UL = 4.77											
	EL	.272	.296	.313	.333	.343	.625	.749	.778	.776	.778
	EG	.202	.213	.182	.211	.183	.164	.251	.222	.224	.222
	ES	.526	.492	.505	.456	.474	.210	.039	-.01	.023	-.02
UL = 5.96											
	EL	.300	.316	.327	.335	.368	.424	.711	.759	.775	.792
	EG	.226	.213	.186	.182	.193	.225	.196	.241	.225	.208
	ES	.474	.470	.487	.483	.439	.351	.093	-.00	.013	-.00
UL = 7.16											
	EL	.331	.385	.382	.404	.422	.442	.615	.748	.775	.792
	EG	.196	.218	.158	.170	.172	.188	.198	.252	.225	.208
	ES	.474	.397	.459	.426	.406	.370	.187	.048	-.02	-.03
UL = 8.35											
	EL	.389	.419	.422	.440	.455	.470	.477	.680	.758	.782
	EG	.182	.196	.166	.174	.172	.202	.198	.193	.242	.218
	ES	.429	.386	.412	.386	.373	.328	.325	.127	.015	-.02
UL = 9.54											
	EL	.490	.416	.444	.436	.460	.446	.468	.522	.719	.768
	EG	.186	.208	.211	.187	.192	.186	.203	.233	.202	.232
	ES	.325	.376	.345	.377	.348	.369	.330	.245	.079	-.00
A26L13 AB UG = 15.64											
UL = 2.39											
	EL	.208	.193	.176	.177	.384	.757	.776	.773	.764	.762
	EG	.211	.203	.228	.222	.285	.243	.224	.227	.236	.238
	ES	.582	.604	.596	.601	.330	.042	-.00	.013	-.04	-.04
UL = 3.58											
	EL	.292	.240	.243	.239	.290	.702	.749	.751	.756	.726
	EG	.192	.196	.206	.202	.266	.206	.251	.249	.244	.274
	ES	.516	.564	.552	.559	.444	.092	.039	-.04	.022	.001

Table 13 (continued)

		INC1	INC2	INC3	INC4	INC5	INC6	INC7	INC8	INC9	INC10
A26L13 AB	UG = 15.64										
UL =	4.77										
	EL	.338	.277	.277	.289	.305	.594	.729	.754	.767	.765
	EG	.207	.206	.216	.205	.225	.192	.271	.246	.233	.235
	ES	.455	.518	.506	.506	.470	.215	.061	-.02	-.01	-.02
UL =	5.96										
	EL	.358	.304	.324	.321	.329	.398	.679	.735	.758	.753
	EG	.159	.214	.238	.217	.196	.232	.252	.265	.242	.247
	ES	.483	.482	.439	.462	.475	.369	.058	.010	.021	-.02
UL =	7.16										
	EL	.326	.365	.365	.360	.395	.404	.614	.714	.759	.770
	EG	.175	.234	.200	.175	.207	.218	.216	.286	.241	.230
	ES	.499	.401	.435	.465	.397	.378	.170	.054	.009	-.01
UL =	8.35										
	EL	.311	.388	.403	.407	.430	.427	.460	.654	.734	.761
	EG	.190	.222	.187	.196	.212	.195	.235	.228	.266	.239
	ES	.499	.390	.410	.397	.358	.378	.305	.117	.039	.014
UL =	9.54										
	EL	.404	.393	.405	.405	.413	.416	.462	.478	.693	.760
	EG	.228	.220	.225	.219	.204	.218	.263	.238	.231	.240
	ES	.367	.387	.370	.376	.383	.366	.275	.283	.076	.026
A27M13 AB	UG = 17.31										
UL =	2.39										
	EL	.153	-.04	.002	.021	.398	.749	.763	.765	.758	.749
	EG	.500	.247	.343	.311	.295	.251	.237	.235	.242	.251
	ES	.347	.794	.655	.668	.307	.023	.009	.017	.004	-.05
UL =	3.58										
	EL	.230	.229	.228	.248	.284	.725	.758	.761	.754	.747
	EG	.215	.224	.169	.247	.258	.206	.242	.239	.246	.253
	ES	.555	.547	.604	.504	.459	.069	.017	.025	-.01	-.04
UL =	4.77										
	EL	.278	.258	.271	.302	.319	.630	.729	.756	.758	.747
	EG	.206	.198	.192	.215	.234	.191	.271	.244	.242	.253
	ES	.515	.544	.537	.483	.446	.179	.049	.000	.010	-.02
UL =	5.96										
	EL	.312	.229	.218	.332	.412	.427	.653	.736	.758	.765
	EG	.244	.257	.240	.189	.216	.229	.248	.264	.242	.235
	ES	.445	.514	.542	.479	.372	.344	.099	.043	.010	-.05
UL =	7.16										
	EL	.348	.282	.307	.353	.397	.376	.476	.696	.747	.767
	EG	.187	.264	.246	.178	.218	.261	.273	.247	.253	.233
	ES	.465	.454	.447	.469	.385	.364	.250	.058	.049	-.02
UL =	8.35										
	EL	.313	.334	.350	.380	.393	.401	.446	.636	.719	.752
	EG	.243	.244	.208	.220	.225	.225	.265	.260	.207	.248
	ES	.444	.422	.442	.399	.382	.374	.289	.104	.074	-.02
UL =	9.54										
	EL	.334	.386	.401	.383	.436	.434	.447	.510	.677	.731
	EG	.279	.223	.210	.192	.243	.231	.236	.273	.228	.269
	ES	.387	.391	.389	.426	.321	.334	.317	.218	.095	.023

APPENDIX F

PARAMETERS DERIVED FROM INCREMENTAL HOLDUP DATA

The parameters derived from the incremental holdup data using the error function as described in Chapter 6 are listed in Table 14. The headings can be defined as follows:

1. UL is the liquid velocity in cm/sec,
2. H is the calculated bed height in cm,
3. EGLOW is the gas holdup in the three-phase region of the column,
4. EGUPP is the gas holdup in the two-phase region of the column,
5. IG is the inflection point in the gas holdup curve in cm,
6. GSIG is the standard deviation in the gas holdup curve in cm,
7. ESLOW is the solid holdup in the three-phase region of the column,
8. IS is the inflection point in the solid holdup curve in cm,
9. SSIG is the standard deviation in the solid holdup curve in cm.

The run number and gas velocity (UG in cm/sec) are again given as subheadings in the table.

Table 14. Incremental holdup data and derived parameters

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
G67D13 IN				UG = 1.73				
4.77	43.5	0.030	0.118	34.41	10.88	0.536	42.90	4.00
7.16	50.4	0.020	0.102	45.00	3.01	0.430	50.25	5.89
9.54	58.8	0.000	0.044	50.08	5.26	0.350	58.19	5.00
11.93	71.2	0.000	0.071	60.00	14.85	0.250	73.03	2.55
G68K13 IN				UG = 13.95				
2.39	41.9	0.205	0.270	41.90	1.64	0.560	42.32	4.87
3.58	46.7	0.186	0.280	50.56	5.82	0.476	46.50	2.73
4.77	47.6	0.159	0.287	48.24	3.18	0.459	46.62	6.21
5.96	52.3	0.120	0.286	51.00	5.00	0.426	51.14	6.70
7.16	54.4	0.100	0.295	49.25	11.59	0.414	53.48	15.00
8.35	60.5	0.095	0.289	50.94	9.92	0.400	59.45	15.72
9.54	69.3	0.125	0.272	55.23	13.92	0.331	68.81	13.40
10.74	71.7	0.041	0.228	54.38	15.39	0.220	79.18	9.59
11.93	89.3					0.200		
G72A13 IN				UG = 0.00				
5.96	43.9	0.000	0.000	0.00	0.00	0.490	41.70	2.29
7.16	48.4	0.000	0.000	0.00	0.00	0.410	46.82	4.99
8.35	52.3	0.000	0.000	0.00	0.00	0.410	52.30	5.00
9.54	55.8	0.000	0.000	0.00	0.00	0.327	55.16	2.60
10.74	60.3	0.000	0.000	0.00	0.00	0.306	59.24	2.46
11.93	65.0	0.000	0.000	0.00	0.00	0.242	64.10	2.58
G74G13 IN				UG = 7.11				
3.58	43.6	0.100	0.168	41.03	2.94	0.517	41.03	2.53
4.77	46.2	0.100	0.180	46.15	3.50	0.453	46.15	2.60
5.96	49.5	0.095	0.130	43.50	2.00	0.449	48.38	3.13
G75G13 IN				UG = 7.07				
7.16	51.5	0.030	0.177	47.81	5.00	0.385	51.86	6.19
8.35	57.8	0.015	0.178	51.15	12.91	0.321	59.32	7.06
9.54	65.6	0.081	0.218	65.71	8.17	0.311	65.70	3.16
G76C13 IN				UG = 0.95				
3.58	39.3	0.015	0.035	36.66	2.50	0.558	36.66	5.53
4.77	42.4	0.010	0.047	35.00	4.50	0.470	42.28	3.88
5.96	46.2	0.000	0.065	44.76	5.00	0.448	44.76	3.73
7.16	49.8	0.000	0.101	49.58	15.00	0.450	49.58	7.15
8.35	53.9	0.000	0.059	52.79	17.00	0.400	52.79	4.00
9.54	57.7	0.000	0.055	56.83	9.00	0.362	56.83	3.21
10.74	64.3	0.000	0.030	63.97	19.90	0.319	63.97	2.53
G77J13 IN				UG = 12.47				
2.39	40.2	0.175	0.255	41.22	5.00	0.575	41.22	6.35
3.58	45.6	0.141	0.255	34.91	9.37	0.502	43.92	4.94
4.77	48.3	0.145	0.260	46.97	7.00	0.460	46.97	7.37
5.96	51.1	0.096	0.257	44.39	13.75	0.433	50.84	8.49
7.16	55.9	0.094	0.271	47.44	6.93	0.405	54.77	9.49
8.35	61.8	0.089	0.277	51.92	19.52	0.371	60.32	10.45
9.54	68.0	0.100	0.263	57.32	17.58	0.300	67.42	11.39
10.74	73.4	0.111	0.258	61.55	13.36	0.254	77.63	12.08
11.93	86.3					0.240		

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
G79L13 IN UG = 15.65								
2.39	42.0	0.183	0.307	42.30	10.00	0.550	42.30	5.89
3.58	46.8	0.163	0.317	37.97	14.39	0.492	45.63	6.07
4.77	49.9	0.131	0.312	46.00	15.95	0.470	49.02	8.07
5.96	54.0	0.129	0.315	42.00	30.00	0.420	52.57	10.03
7.16	59.6	0.126	0.321	51.80	12.97	0.413	56.77	11.86
8.35	62.8	0.110	0.334	52.12	11.98	0.359	63.36	19.48
9.54	68.5	0.089	0.305	55.48	18.00	0.314	70.61	11.39
10.74	72.5	0.112	0.255	55.11	10.34	0.273	81.02	20.24
11.93	92.3					0.223		
G80B13 IN UG = 0.44								
4.77	41.1	0.003	0.025	41.75	2.96	0.535	41.75	4.57
5.96	45.0	0.000	0.022	43.15	5.00	0.521	43.15	3.50
7.16	48.4	0.000	0.013	46.94	7.50	0.472	46.94	7.81
8.35	52.6	0.000	0.019	50.19	11.69	0.415	50.19	2.50
9.54	56.7	0.000	0.013	54.92	5.00	0.386	54.92	5.04
10.74	61.8	0.000	0.005	59.11	10.00	0.355	59.11	2.50
11.93	65.7	0.000	0.018	64.12	10.00	0.317	64.12	5.42
G82E13 IN UG = 3.58								
2.39	37.2	0.100	0.170	28.00	10.00	0.589	36.00	5.77
3.58	41.4	0.073	0.129	21.72	9.07	0.547	41.26	4.56
4.77	44.7	0.100	0.143	44.41	10.00	0.506	44.41	3.04
5.96	48.9	0.041	0.162	44.62	7.98	0.468	47.73	3.17
7.16	52.0	0.016	0.171	34.50	25.12	0.420	52.16	5.73
8.35	56.7	0.070	0.182	54.83	25.28	0.370	54.83	7.04
9.54	64.3	0.050	0.201	64.14	20.00	0.330	63.15	4.70
10.74	71.0	0.036	0.175	60.55	28.93	0.317	70.67	5.36
11.93	76.4	0.035	0.146	59.24	62.72	0.273	77.70	7.26
G85F13 IN UG = 5.31								
2.39	38.6	0.122	0.212	37.94	4.99	0.600	37.94	4.46
3.58	42.1	0.125	0.165	42.61	3.03	0.520	42.61	4.79
4.77	46.6	0.083	0.183	47.49	10.00	0.489	46.18	4.00
5.96	49.0	0.063	0.198	41.16	11.46	0.466	48.61	7.63
7.16	54.2	0.038	0.211	41.59	34.94	0.400	52.60	5.72
8.35	58.6	0.100	0.209	58.79	10.00	0.370	58.79	6.96
9.54	65.1	0.100	0.219	64.71	17.27	0.320	64.71	2.80
10.74	74.7	0.090	0.192	73.90	5.00	0.290	73.98	6.16
11.93	83.3	0.100	0.166	82.59	40.00	0.264	82.59	2.76
G86H13 IN UG = 8.81								
2.39	39.0	0.145	0.229	39.17	3.14	0.600	39.17	8.03
3.58	43.6	0.145	0.231	43.38	8.39	0.528	43.38	5.02
4.77	47.4	0.112	0.220	48.66	3.03	0.502	45.47	5.59
5.96	47.9	0.096	0.219	49.80	7.70	0.462	49.80	7.70
7.16	54.6	0.085	0.219	44.66	7.03	0.434	52.83	7.45
8.35	57.0	0.096	0.226	48.64	10.62	0.372	57.22	10.86
9.54	64.4	0.075	0.251	59.36	12.63	0.323	65.16	6.00
10.74	73.4	0.091	0.237	63.08	27.05	0.280	74.30	6.00
11.93	86.3					0.242		

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
G87I13 IN UG = 10.54								
2.39	39.8	0.165	0.247	40.51	3.02	0.600	40.51	6.64
3.58	44.7	0.175	0.240	44.06	5.00	0.503	44.50	3.88
4.77	48.1	0.135	0.239	47.00	3.10	0.488	46.93	5.00
5.96	50.3	0.108	0.250	45.84	9.92	0.466	49.27	10.29
7.16	54.8	0.089	0.246	46.49	15.30	0.411	53.57	6.97
8.35	61.4	0.059	0.250	47.61	20.91	0.376	59.97	8.45
9.54	65.7	0.100	0.271	66.09	15.00	0.329	66.09	11.22
10.74	71.7	0.120	0.239	65.00	15.00	0.255	74.92	10.00
11.93	87.3					0.250		
G88M13 IN UG = 17.26								
1.19	37.6	0.260	0.330	37.76	2.27	0.600	37.76	7.91
2.39	44.7	0.230	0.324	42.98	2.80	0.533	42.98	6.60
3.58	48.2	0.200	0.332	48.25	3.18	0.495	48.25	10.50
4.77	53.8	0.180	0.334	45.37	15.00	0.470	49.46	13.26
5.96	59.2	0.138	0.340	50.00	10.00	0.431	53.82	14.51
7.16	60.6	0.122	0.340	48.11	26.69	0.400	58.05	15.57
8.35	68.9	0.092	0.310	52.28	11.86	0.372	63.09	12.77
9.54	81.3	0.091	0.286	54.70	17.34	0.319	71.81	20.88
10.74	88.3					0.264		
11.93	93.3					0.246		
G67D13 AB UG = 1.78								
4.77	41.6	0.030	0.118	42.16	2.85	0.535	42.16	5.14
7.16	48.0	0.020	0.102	48.75	2.90	0.420	48.75	6.00
9.54	56.5	0.000	0.044	57.22	2.95	0.340	57.22	5.00
11.93	69.8	0.030	0.076	70.00	5.00	0.242	70.77	4.39
G68K13 AB UG = 13.95								
2.39	40.5	0.192	0.279	41.38	2.62	0.570	41.38	6.19
3.58	45.5	0.166	0.280	43.78	6.00	0.495	43.78	7.08
4.77	46.1	0.134	0.287	42.91	9.58	0.487	44.97	7.41
5.96	50.9	0.108	0.286	41.97	12.61	0.458	48.62	8.82
7.16	53.8	0.116	0.295	47.10	4.13	0.410	51.67	11.29
8.35	59.7	0.101	0.289	56.05	10.00	0.390	56.05	13.82
9.54	67.9	0.099	0.280	49.94	19.75	0.359	66.66	13.73
10.74	71.1	0.036	0.243	53.66	13.41	0.205	77.54	8.33
11.93	89.3					0.205		
G72A13 AB UG = 0.00								
5.96	43.1	0.000	0.000	0.00	0.00	0.504	41.25	2.45
7.16	46.7	0.000	0.000	0.00	0.00	0.465	45.32	5.28
8.35	50.3	0.000	0.000	0.00	0.00	0.410	49.35	5.00
9.54	54.1	0.000	0.000	0.00	0.00	0.349	53.83	2.12
10.74	58.4	0.000	0.000	0.00	0.00	0.310	58.21	2.83
11.93	65.2	0.000	0.000	0.00	0.00	0.249	64.31	2.66
G74G13 AB UG = 7.11								
3.58	41.7	0.080	0.168	40.57	2.70	0.523	40.57	2.70
4.77	45.2	0.050	0.180	44.88	8.00	0.480	44.88	3.71
5.96	47.6	0.084	0.126	39.68	3.03	0.472	46.99	6.51

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			G75G13	AB	UG = 7.07			
7.16	50.4	0.024	0.177	44.66	6.94	0.390	50.67	6.69
8.35	56.2	0.030	0.178	56.77	7.50	0.346	56.77	7.72
9.54	62.8	0.075	0.218	60.00	10.00	0.330	63.55	5.33
			G76C13	AB	UG = 0.95			
3.58	37.8	0.035	0.035	37.36	2.68	0.545	37.36	2.68
4.77	41.0	0.000	0.047	41.53	4.80	0.481	41.53	4.83
5.96	44.8	0.000	0.065	43.00	12.00	0.440	43.18	3.31
7.16	47.9	0.010	0.101	45.00	2.92	0.471	47.93	7.03
8.35	53.0	0.000	0.059	46.00	7.50	0.400	51.56	4.48
9.54	56.0	0.000	0.055	55.42	5.50	0.373	55.42	5.25
10.74	62.2	0.000	0.022	60.08	38.41	0.326	60.08	2.15
			G77J13	AB	UG = 12.47			
2.39	39.3	0.155	0.255	40.61	7.00	0.580	40.61	6.90
3.58	45.0	0.131	0.255	37.00	10.00	0.512	43.25	5.47
4.77	46.7	0.120	0.257	42.00	7.50	0.478	45.25	7.83
5.96	48.7	0.098	0.257	40.97	5.83	0.437	49.22	11.19
7.16	53.1	0.090	0.271	44.43	10.02	0.414	52.64	9.18
8.35	59.9	0.082	0.277	50.03	9.86	0.382	58.19	11.21
9.54	66.8	0.057	0.266	49.61	22.87	0.313	64.66	7.94
10.74	70.2	0.094	0.278	60.19	11.20	0.275	73.57	12.07
11.93	86.3					0.250		
			G79L13	AB	UG = 15.65			
2.39	41.0	0.178	0.307	41.98	7.50	0.570	41.98	6.19
3.58	45.9	0.160	0.317	41.00	7.15	0.520	44.60	6.12
4.77	48.4	0.150	0.312	47.00	8.01	0.468	47.57	7.05
5.96	52.9	0.123	0.315	42.59	7.41	0.450	50.82	12.37
7.16	58.3	0.120	0.310	50.00	17.00	0.430	55.41	19.17
8.35	61.7	0.102	0.334	50.60	19.45	0.356	61.99	12.76
9.54	67.1	0.105	0.319	57.00	16.06	0.321	67.69	11.93
10.74	70.5	0.112	0.293	54.06	13.89	0.273	76.09	17.70
11.93	92.3					0.233		
			G80B13	AB	UG = 0.44			
4.77	40.2	0.000	0.025	41.25	2.70	0.534	41.25	5.29
5.96	44.5	0.000	0.022	42.67	3.23	0.500	42.67	3.85
7.16	47.3	0.000	0.013	46.18	3.09	0.475	46.18	6.57
8.35	51.4	0.000	0.019	50.43	2.96	0.410	50.43	3.93
9.54	55.3	0.000	0.013	54.50	19.94	0.380	53.89	4.86
10.74	60.6	0.000	0.005	58.56	2.71	0.351	58.56	2.71
11.93	64.1	0.000	0.018	63.35	5.00	0.319	63.35	4.52
			G82E13	AB	UG = 3.58			
2.39	37.0	0.103	0.170	26.02	8.27	0.601	36.41	4.22
3.58	40.2	0.085	0.129	40.46	5.00	0.549	40.46	4.52
4.77	44.3	0.046	0.143	29.13	23.79	0.512	42.96	4.25
5.96	46.8	0.080	0.162	46.36	2.50	0.460	46.36	5.94
7.16	49.0	0.080	0.171	50.22	6.00	0.430	50.22	6.06
8.35	54.9	0.070	0.182	54.00	6.00	0.380	54.00	5.96
9.54	62.5	0.050	0.201	58.54	16.53	0.359	61.75	4.70
10.74	69.8	0.080	0.175	63.00	8.61	0.310	69.32	6.95

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
G82E13 AB UG = 3.58								
11.93	74.6	0.060	0.166	70.00	20.00	0.275	75.70	8.06
G85F13 AB UG = 5.31								
2.39	37.2	0.116	0.212	30.31	8.70	0.592	37.38	3.85
3.58	41.2	0.106	0.165	41.82	5.00	0.523	41.82	4.87
4.77	44.6	0.085	0.183	38.06	17.31	0.487	44.67	3.52
5.96	47.5	0.075	0.198	47.73	2.84	0.462	47.73	4.00
7.16	53.4	0.080	0.211	41.48	10.43	0.425	51.62	6.61
8.35	55.9	0.075	0.209	57.00	6.50	0.382	57.00	6.41
9.54	62.3	0.080	0.219	62.44	6.00	0.341	62.44	4.79
10.74	72.0	0.100	0.217	73.69	7.50	0.300	73.69	2.79
11.93	83.3	0.120	0.181	80.98	5.00	0.275	80.98	3.81
G86H13 AB UG = 8.81								
2.39	38.5	0.129	0.229	29.55	9.24	0.576	38.87	3.22
3.58	42.0	0.138	0.231	42.13	6.00	0.533	42.13	5.29
4.77	45.5	0.114	0.220	41.27	17.62	0.500	44.87	5.00
5.96	47.9	0.101	0.219	48.33	5.00	0.459	48.33	8.38
7.16	53.7	0.096	0.219	44.86	5.08	0.420	52.57	6.94
8.35	56.2	0.065	0.226	47.41	13.51	0.377	56.86	8.14
9.54	62.9	0.100	0.251	58.00	10.00	0.320	64.90	5.00
10.74	70.9	0.096	0.249	62.47	14.46	0.290	72.77	5.68
11.93	86.3					0.247		
G87I13 AB UG = 10.54								
2.39	39.3	0.170	0.247	39.81	6.00	0.581	39.81	5.58
3.58	42.4	0.140	0.243	42.96	5.50	0.518	42.96	5.29
4.77	46.2	0.129	0.239	41.42	13.51	0.485	45.24	4.99
5.96	47.6	0.115	0.250	42.88	4.64	0.459	47.78	6.11
7.16	53.3	0.083	0.246	42.32	7.66	0.422	52.02	10.00
8.35	59.7	0.095	0.250	53.00	10.00	0.370	58.27	10.00
9.54	62.9	0.100	0.271	58.00	12.00	0.325	64.85	8.39
10.74	70.7	0.079	0.254	60.29	25.82	0.259	73.83	4.74
11.93	87.3					0.260		
G88M13 AB UG = 17.26								
1.19	37.2	0.203	0.343	36.26	8.38	0.644	36.26	8.38
2.39	44.1	0.200	0.324	41.59	7.40	0.549	41.59	7.37
3.58	47.0	0.190	0.332	43.00	13.46	0.509	45.11	7.26
4.77	51.0	0.145	0.334	42.97	8.54	0.458	47.43	7.06
5.96	52.9	0.131	0.340	42.88	10.00	0.435	50.42	11.61
7.16	59.1	0.112	0.340	50.00	15.00	0.425	56.35	20.00
8.35	65.1	0.100	0.332	46.17	28.91	0.368	61.47	15.24
9.54	81.3	0.086	0.306	49.32	21.16	0.323	69.23	18.65
10.74	88.3					0.265		
11.93	93.3					0.257		
G13A16 IN UG = 0.00								
5.14	42.0	0.000	0.000	0.00	0.00	0.543	42.93	2.15
5.87	44.4	0.000	0.000	0.00	0.00	0.499	44.43	2.70
6.60	46.6	0.000	0.000	0.00	0.00	0.468	46.95	3.00
7.34	48.8	0.000	0.000	0.00	0.00	0.431	49.00	1.45

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			G14D16 IN		UG = 0.44			
4.40	40.6	0.004	0.004	40.34	1.70	0.561	40.34	1.69
5.14	42.0	0.005	0.025	42.00	2.20	0.525	42.99	2.18
5.87	44.5	0.000	0.026	44.34	2.70	0.497	44.34	2.67
6.60	46.5	0.000	0.025	47.00	4.20	0.464	47.72	4.16
7.34	49.2	0.000	0.022	50.00	2.00	0.429	50.36	1.95
			G15E16 IN		UG = 0.88			
4.40	40.9	0.010	0.037	41.00	3.00	0.547	41.58	1.67
5.14	42.9	0.000	0.043	42.16	4.00	0.520	42.16	4.00
5.87	45.1	0.007	0.044	45.00	2.83	0.490	44.90	2.87
6.60	47.7	0.015	0.059	51.73	15.74	0.451	48.28	3.46
7.34	49.9	0.000	0.084	50.00	2.20	0.435	51.00	2.18
			G16F16 IN		UG = 1.32			
4.40	40.8	0.020	0.067	41.00	2.70	0.558	41.33	2.69
5.14	43.5	0.010	0.079	43.66	2.50	0.510	43.66	2.42
5.87	46.1	0.012	0.093	46.00	5.00	0.480	47.34	4.54
6.60	48.6	0.015	0.117	53.00	4.00	0.450	50.61	2.04
7.34	51.1	0.000	0.117	51.61	2.40	0.420	51.61	2.40
			G17G16 IN		UG = 1.74			
4.40	42.0	0.034	0.094	43.00	2.33	0.538	43.03	2.19
5.14	44.2	0.028	0.109	44.09	2.47	0.495	44.09	2.58
5.87	47.1	0.031	0.122	47.00	3.70	0.470	48.38	3.72
6.60	50.1	0.037	0.146	58.80	11.56	0.450	51.13	4.50
7.34	52.9	0.052	0.153	52.70	3.00	0.430	52.69	2.80
			G18H16 IN		UG = 2.18			
3.67	39.7	0.046	0.086	40.00	3.40	0.564	40.40	3.36
4.40	42.2	0.043	0.088	43.00	2.16	0.532	43.03	2.19
5.14	44.3	0.036	0.120	44.20	2.43	0.503	44.20	2.62
5.87	47.3	0.054	0.136	45.00	3.70	0.466	45.00	3.70
6.60	50.2	0.060	0.173	53.00	7.60	0.450	51.34	2.31
7.34	53.5	0.044	0.188	55.00	8.00	0.410	53.74	8.00
			G19I16 IN		UG = 2.61			
3.67	39.9	0.059	0.100	40.64	3.55	0.565	40.64	3.55
4.40	42.3	0.047	0.111	43.08	2.49	0.535	43.08	2.21
5.14	44.4	0.051	0.116	44.17	3.00	0.506	44.17	2.61
5.87	47.6	0.041	0.148	43.04	6.20	0.465	48.80	3.78
6.60	50.9	0.060	0.181	52.00	6.23	0.430	51.64	2.41
7.34	53.6	0.041	0.199	51.38	16.27	0.413	55.62	6.78
			G20J16 IN		UG = 3.03			
3.67	39.6	0.064	0.101	40.37	3.90	0.564	40.37	3.89
4.40	42.7	0.056	0.118	42.84	2.49	0.533	42.84	2.85
5.14	45.3	0.054	0.138	45.00	3.00	0.495	44.70	2.80
5.87	47.8	0.050	0.155	42.39	5.83	0.458	49.20	4.29
6.60	51.9	0.070	0.178	52.10	2.35	0.420	52.10	2.58
7.34	54.0	0.060	0.223	52.10	10.62	0.403	56.14	6.94
			G21K16 IN		UG = 3.45			
3.67	41.4	0.058	0.084	42.43	2.18	0.545	42.43	1.97
4.40	43.6	0.061	0.086	43.51	2.52	0.533	43.51	2.37
5.14	45.0	0.051	0.101	49.20	3.07	0.498	44.52	2.73

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			G21K16	IN	UG = 3.45			
5.87	48.5	0.063	0.135	41.86	6.13	0.459	49.72	3.66
6.60	52.3	0.075	0.186	54.11	4.70	0.433	51.90	4.73
7.34	55.3	0.097	0.232	56.06	5.18	0.406	57.04	5.93
			G22L16	IN	UG = 3.86			
3.67	41.0	0.086	0.114	41.45	3.30	0.563	41.45	3.32
4.40	42.8	0.080	0.127	43.41	2.32	0.538	43.41	2.33
5.14	45.2	0.080	0.129	45.00	3.00	0.508	44.95	2.89
5.87	49.2	0.101	0.159	56.70	4.46	0.465	50.29	3.58
6.60	52.6	0.095	0.192	54.86	2.23	0.433	52.64	2.78
7.34	55.3	0.063	0.239	52.34	15.54	0.409	56.89	6.24
			G23M16	IN	UG = 4.26			
3.67	40.4	0.088	0.117	35.92	2.52	0.548	40.82	3.12
4.40	42.9	0.084	0.122	43.40	2.30	0.525	43.40	2.33
5.14	45.1	0.074	0.133	45.00	3.00	0.497	44.80	2.84
5.87	48.8	0.099	0.155	56.45	4.60	0.464	49.93	3.68
6.60	53.0	0.110	0.181	53.00	3.00	0.440	52.91	2.88
7.34	55.4	0.096	0.232	53.00	13.48	0.390	58.01	4.97
			G13A16	AB	UG = 0.00			
5.14	41.7	0.000	0.000	0.00	0.00	0.541	42.77	2.10
5.87	43.9	0.000	0.000	0.00	0.00	0.499	44.23	2.63
6.60	45.9	0.000	0.000	0.00	0.00	0.470	46.64	3.15
7.34	48.1	0.000	0.000	0.00	0.00	0.437	48.69	2.58
			G14D16	AB	UG = 0.44			
4.40	40.0	0.000	0.004	39.31	2.00	0.558	39.31	2.07
5.14	41.7	0.000	0.030	42.65	2.10	0.525	42.65	2.06
5.87	44.2	0.000	0.026	44.24	2.63	0.497	44.24	2.63
6.60	46.4	0.000	0.025	47.00	4.10	0.463	47.31	4.06
7.34	48.5	0.000	0.022	48.70	2.91	0.433	48.70	2.84
			G15E16	AB	UG = 0.88			
4.40	40.0	0.010	0.037	40.00	3.00	0.552	40.25	3.01
5.14	42.3	0.000	0.043	50.00	7.50	0.513	42.52	2.52
5.87	44.6	0.007	0.044	44.68	2.80	0.490	44.68	2.79
6.60	47.2	0.010	0.059	43.59	2.39	0.456	47.79	3.80
7.34	49.2	0.000	0.084	53.00	6.00	0.433	50.56	2.02
			G16F16	AB	UG = 1.32			
4.40	40.4	0.035	0.067	49.78	5.13	0.556	41.00	3.14
5.14	42.6	0.000	0.079	43.38	2.32	0.520	43.38	2.32
5.87	45.5	0.015	0.093	45.50	7.00	0.480	47.02	4.80
6.60	48.1	0.010	0.117	49.63	8.50	0.455	49.00	4.50
7.34	50.5	0.000	0.117	51.40	2.32	0.425	51.40	2.32
			G17G16	AB	UG = 1.74			
4.40	41.6	0.033	0.094	48.12	7.04	0.538	42.82	2.12
5.14	43.6	0.027	0.109	43.89	2.46	0.505	43.89	2.50
5.87	46.0	0.028	0.122	46.00	5.00	0.456	48.10	4.28
6.60	49.4	0.031	0.146	55.99	22.22	0.460	50.87	2.13
7.34	52.2	0.041	0.153	57.30	6.13	0.430	52.45	2.71

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			G18H16	AB	UG =	2.13		
3.67	38.8	0.040	0.086	39.00	4.00	0.561	39.78	3.51
4.40	41.4	0.042	0.088	45.67	7.65	0.532	42.49	2.00
5.14	43.7	0.037	0.120	44.00	3.00	0.510	43.95	2.53
5.87	46.5	0.045	0.136	44.85	2.85	0.485	44.85	2.85
6.60	49.5	0.046	0.173	53.77	10.49	0.460	51.05	2.20
7.34	52.7	0.039	0.188	56.37	7.10	0.408	52.83	2.84
			G19I16	AB	UG =	2.61		
3.67	39.1	0.058	0.100	40.00	3.80	0.575	40.09	3.75
4.40	41.7	0.050	0.111	49.99	6.97	0.532	42.80	2.11
5.14	43.9	0.049	0.116	43.97	2.26	0.507	43.97	2.53
5.87	46.8	0.043	0.148	41.12	3.84	0.459	48.50	4.35
6.60	50.0	0.050	0.181	52.46	8.00	0.430	51.29	2.29
7.34	52.7	0.043	0.199	49.87	3.90	0.410	54.41	8.76
			G20J16	AB	UG =	3.03		
3.67	39.0	0.066	0.101	40.00	4.20	0.561	40.03	4.18
4.40	41.7	0.051	0.118	48.25	9.46	0.539	41.81	3.03
5.14	44.1	0.049	0.138	49.95	5.10	0.500	44.37	2.68
5.87	47.2	0.057	0.155	43.42	2.33	0.470	48.75	4.09
6.60	51.2	0.075	0.178	52.00	2.73	0.440	51.83	2.48
7.34	53.4	0.064	0.223	51.71	4.05	0.410	55.89	7.47
			G21K16	AB	UG =	3.45		
3.67	39.8	0.061	0.084	40.51	3.50	0.560	40.51	3.46
4.40	42.4	0.055	0.086	43.00	2.20	0.535	42.96	2.17
5.14	44.6	0.049	0.101	44.60	3.00	0.498	44.37	2.68
5.87	47.7	0.070	0.135	48.00	4.20	0.465	49.23	4.22
6.60	51.9	0.070	0.186	52.50	2.48	0.430	52.26	2.64
7.34	54.5	0.105	0.232	56.12	5.24	0.397	57.00	5.72
			G22L16	AB	UG =	3.86		
3.67	40.3	0.087	0.114	40.50	3.50	0.562	40.54	3.50
4.40	42.4	0.077	0.127	43.30	2.26	0.540	43.30	2.29
5.14	44.7	0.072	0.129	45.73	2.64	0.511	44.78	2.83
5.87	48.1	0.090	0.159	43.98	5.21	0.477	49.22	4.46
6.60	51.7	0.090	0.192	53.29	2.80	0.440	52.31	2.66
7.34	54.9	0.100	0.239	54.00	4.37	0.415	57.01	5.57
			G23M16	AB	UG =	4.26		
3.67	40.4	0.089	0.117	40.66	3.50	0.546	40.66	3.47
4.40	42.4	0.079	0.122	42.00	3.82	0.531	42.00	3.82
5.14	44.3	0.069	0.133	46.91	6.07	0.499	44.53	2.74
5.87	48.0	0.091	0.155	43.26	7.33	0.472	48.99	4.05
6.60	52.0	0.101	0.181	53.96	2.56	0.435	52.46	4.64
7.34	54.4	0.098	0.232	50.40	12.33	0.387	57.47	5.24
			P12A13	IN	UG =	0.00		
2.39	33.4	0.000	0.000	0.00	0.00	0.453	32.57	2.34
3.58	43.4	0.000	0.000	0.00	0.00	0.320	41.66	3.77
4.77	49.1	0.000	0.000	0.00	0.00	0.231	50.11	2.50
5.96	63.4	0.000	0.000	0.00	0.00	0.160	61.50	1.64
7.16	82.3	0.000	0.000	0.00	0.00	0.080	79.50	1.64
8.35	106.3					0.049		

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
P13B13 IN				UG = 0.44				
2.39	33.6	0.021	0.021	33.66	4.52	0.445	33.66	4.52
3.58	43.9	0.003	0.003	41.44	2.38	0.268	41.44	2.38
4.77	59.4	0.000	0.003	52.50	3.16	0.201	54.38	2.32
5.96	75.6	0.000	0.007	72.55	3.04	0.125	72.55	2.38
P14C13 IN				UG = 0.93				
1.19	31.4	0.051	0.040	27.65	2.65	0.520	27.65	4.08
2.39	39.2	0.019	0.045	34.60	2.25	0.431	34.60	5.05
3.58	46.2	0.000	0.035	42.82	2.96	0.295	42.82	6.65
4.77	55.3	0.003	0.027	55.00	15.50	0.200	59.83	15.52
5.96	98.3					0.123		
P15D13 IN				UG = 1.77				
1.19	35.5	0.082	0.055	29.51	1.64	0.482	29.51	3.09
2.39	48.6	0.040	0.065	55.17	2.60	0.400	35.84	15.00
2.98	53.5	0.011	0.060	30.31	12.83	0.384	36.20	21.68
3.58	69.3	0.010	0.051	35.00	30.00	0.300	48.39	21.27
4.77	101.3					0.165		
P16E13 IN				UG = 3.51				
1.19	43.4	0.090	0.103	33.00	3.16	0.470	31.06	19.35
2.39	58.8	0.000	0.098	17.09	7.38	0.437	35.00	30.00
2.98	70.7	0.093	0.093	40.00	40.00	0.378	40.00	40.00
3.58	91.3					0.330		
4.77	116.3					0.140		
P17F13 IN				UG = 5.27				
1.19	60.2	0.089	0.151	29.07	6.19	0.475	29.07	22.00
2.39	66.8	0.100	0.144	42.00	10.15	0.341	42.00	24.00
2.98	91.3					0.280		
3.58	101.3					0.200		
4.77	134.3					0.115		
P22G13 IN				UG = 7.09				
1.19	53.8	0.113	0.177	45.00	5.90	0.460	35.00	17.45
1.79	69.6	0.083	0.190	35.00	14.97	0.437	35.00	25.00
2.39	81.3	0.076	0.150	27.57	9.48	0.420	34.45	41.98
2.98	89.3					0.299		
3.58	91.3					0.212		
P23H13 IN				UG = 8.86				
1.19	62.6	0.121	0.200	40.00	10.00	0.450	40.00	30.00
1.79	82.3	0.103	0.213	45.00	30.00	0.386	45.00	30.00
2.39	86.3					0.334		
2.98	101.3					0.275		
3.58	105.3					0.181		
P24I13 IN				UG = 10.88				
1.19	81.3	0.190	0.241	50.06	20.00	0.445	40.00	50.00
1.79	86.3					0.385		
2.39	111.3					0.352		
2.98	121.3					0.231		
3.58	134.3					0.198		

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			P25J13 IN		UG = 12.38			
1.19	84.3					0.382		
1.79	97.3					0.386		
2.39	104.3					0.335		
			P12A13 AB		UG = 0.00			
2.39	33.5	0.000	0.000	0.00	0.00	0.458	32.48	2.37
3.58	43.2	0.000	0.000	0.00	0.00	0.344	40.84	2.60
4.77	48.5	0.000	0.000	0.00	0.00	0.238	49.95	2.56
5.96	63.4	0.000	0.000	0.00	0.00	0.155	61.50	1.64
7.16	82.3	0.000	0.000	0.00	0.00	0.090	79.50	1.64
8.35	106.3					0.049		
			P13B13 AB		UG = 0.44			
2.39	32.4	0.021	0.021	33.30	4.21	0.442	33.30	4.21
3.58	41.5	0.000	0.009	31.38	10.00	0.270	41.21	2.47
4.77	61.1	0.000	0.002	54.80	2.47	0.201	54.80	2.47
5.96	74.1	0.000	0.012	72.55	0.72	0.123	72.55	2.38
7.16	95.3					0.066		
			P14C13 AB		UG = 0.93			
1.19	28.6	0.060	0.040	27.46	10.00	0.521	27.46	4.09
2.39	35.6	0.008	0.041	16.34	4.62	0.442	35.00	7.00
3.58	44.4	0.000	0.040	42.22	7.00	0.300	42.22	7.40
4.77	62.7	0.035	0.035	61.04	9.75	0.200	61.04	9.75
5.96	98.3					0.128		
			P15D13 AB		UG = 1.77			
1.19	32.7	0.071	0.050	32.70	2.00	0.493	32.70	6.00
2.39	39.2	0.027	0.061	25.50	1.64	0.413	33.73	11.26
2.98	52.3	0.029	0.062	37.97	2.90	0.365	37.38	18.26
3.58	72.2	0.010	0.069	33.95	17.21	0.300	49.40	20.41
4.77	101.3					0.170		
			P16E13 AB		UG = 3.51			
1.19	48.9	0.088	0.127	48.90	30.00	0.464	29.00	20.00
2.39	59.0	0.000	0.111	25.55	10.00	0.435	28.91	20.00
2.98	40.4	0.098	0.098	40.40	40.00	0.368	40.40	40.00
3.58	91.3					0.250		
4.77	116.3					0.130		
			P17F13 AB		UG = 5.27			
1.19	62.2	0.100	0.140	34.50	4.00	0.437	35.00	25.00
2.39	73.6	0.065	0.130	42.14	9.00	0.341	42.14	27.57
2.98	91.3					0.314		
3.58	101.3					0.200		
4.18	121.3					0.170		
4.77	134.3					0.098		
			P22G13 AB		UG = 7.09			
1.19	54.7	0.096	0.150	34.50	3.00	0.441	34.50	30.00
1.79	64.5	0.079	0.180	40.34	13.72	0.439	27.91	22.92
2.39	81.3	0.100	0.169	55.00	20.00	0.374	36.77	34.13
2.98	89.3					0.230		
3.58	91.3					0.190		
4.77	134.3					0.107		

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			P23H13 AB		UG = 8.86			
1.19	61.3	0.128	0.215	46.37	2.68	0.443	40.24	13.10
1.79	82.3	0.122	0.217	50.00	10.00	0.382	39.31	22.28
2.39	86.3					0.270		
2.98	101.3					0.200		
3.58	105.3					0.150		
4.77	134.3					0.110		
			P24I13 AB		UG = 10.88			
1.19	81.3	0.150	0.260	55.00	20.00	0.444	50.00	30.00
1.79	86.3					0.300		
2.39	111.3					0.250		
2.98	121.3					0.200		
3.58	134.3					0.170		
4.77	134.3					0.100		
			P25J13 AB		UG = 12.38			
1.19	84.3					0.250		
1.79	97.3					0.200		
2.39	104.3					0.150		
3.58	134.3					0.130		
4.77	134.3					0.107		
			P13A16 IN		UG = 0.00			
2.20	24.9	0.000	0.000	0.00	0.00	0.477	25.00	1.45
2.94	31.0	0.000	0.000	0.00	0.00	0.384	28.37	2.68
3.67	33.5	0.000	0.000	0.00	0.00	0.301	33.00	1.45
4.40	37.3	0.000	0.000	0.00	0.00	0.247	36.57	2.75
5.14	46.9	0.000	0.000	0.00	0.00	0.226	42.38	4.47
5.87	51.8	0.000	0.000	0.00	0.00	0.200	49.00	3.00
			P14B16 IN		UG - 0.11			
2.20	25.2	0.001	0.009	25.57	2.64	0.490	25.57	2.64
2.94	30.3	0.000	0.007	27.66	2.59	0.380	27.66	2.42
3.67	35.6	0.008	0.005	33.00	1.45	0.287	33.00	1.45
4.40	38.8	0.000	0.010	38.51	2.40	0.240	38.51	2.36
5.14	43.5	0.000	0.004	43.27	2.30	0.200	43.27	2.28
5.87	51.2	0.000	0.005	49.00	1.50	0.165	49.00	1.45
6.60	59.5	0.000	0.005	57.00	2.50	0.145	57.00	2.50
7.34	68.1	0.000	0.005	65.00	2.50	0.110	65.00	2.50
			P15C16 IN		UG = 0.24			
2.20	23.7	0.010	0.016	23.16	2.12	0.488	23.16	2.12
2.94	26.8	0.000	0.010	26.40	4.20	0.385	26.40	4.18
3.67	34.4	0.000	0.012	32.46	3.40	0.260	32.46	3.43
4.40	39.1	0.000	0.013	40.98	4.20	0.266	40.98	5.00
5.14	47.6	0.000	0.012	46.79	5.00	0.185	46.79	5.00
5.87	53.0	0.000	0.013	51.79	5.00	0.170	51.79	5.00
6.60	61.9	0.000	0.011	58.67	3.00	0.145	58.67	3.00
7.34	65.0	0.000	0.010	67.89	3.00	0.115	67.89	3.00
			P16D16 IN		UG = 0.44			
2.20	23.1	0.004	0.013	17.00	1.45	0.508	23.53	3.68
2.94	27.4	0.013	0.013	26.33	5.30	0.413	26.33	5.27
3.67	30.6	0.010	0.013	33.00	4.50	0.341	33.32	4.54

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			P16D16	IN	UG =	0.44		
4.40	44.2	0.010	0.012	49.24	9.00	0.262	49.24	9.08
5.14	47.6	0.010	0.010	49.91	6.70	0.180	49.91	6.66
5.87	56.0	0.010	0.015	56.02	4.90	0.150	56.02	4.90
6.60	66.7	0.010	0.016	67.60	9.00	0.150	67.60	9.00
7.34	76.6	0.010	0.010	75.86	8.00	0.125	75.86	8.00
			P17E16	IN	UG =	0.88		
2.20	28.5	0.019	0.025	19.90	9.00	0.500	19.90	10.00
2.94	39.6	0.013	0.023	39.60	1.45	0.347	23.28	16.72
3.67	48.2	0.022	0.028	46.51	2.36	0.328	37.20	37.43
4.40	54.7	0.024	0.026	49.00	1.45	0.193	52.74	18.76
5.14	63.7	0.020	0.023	63.70	9.07	0.144	68.78	24.10
5.87	64.5	0.030	0.035	67.75	11.00	0.135	67.75	14.00
6.60	73.0	0.020	0.021	73.00	10.00	0.125	73.00	10.00
			P18F16	IN	UG =	1.33		
1.47	26.2	0.047	0.047	19.35	4.50	0.492	19.35	4.51
2.20	36.0	0.026	0.056	19.20	9.90	0.422	19.20	9.87
2.94	51.9	0.013	0.046	52.00	10.00	0.130	52.00	10.00
3.67	61.4	0.019	0.051	65.00	7.00	0.140	62.43	17.70
4.40	50.4	0.020	0.049	50.00	6.00	0.157	50.00	15.00
5.14	77.0	0.054	0.057	62.79	2.26	0.122	77.00	14.59
			P19G16	IN	UG =	1.77		
1.47	36.4	0.058	0.061	18.94	12.00	0.500	18.94	12.00
2.20	40.2	0.031	0.061	38.59	15.00	0.312	38.59	15.00
2.94	56.8	0.033	0.060	59.08	4.11	0.214	54.25	35.32
3.67	62.0	0.029	0.066	49.86	8.17	0.192	54.84	66.51
4.40	73.0	0.044	0.077	58.26	5.96	0.139	73.00	15.00
5.14	82.0					0.100		
			P20H16	IN	UG =	2.21		
0.73	39.6	0.060	0.073	18.52	5.30	0.469	18.52	5.30
1.47	43.0	0.040	0.071	25.00	12.00	0.391	25.00	15.00
2.20	57.0	0.042	0.075	41.87	7.39	0.345	42.00	17.26
2.94	62.8	0.025	0.078	55.10	11.97	0.200	55.00	20.00
3.67	73.0	0.030	0.077	45.53	9.29	0.165	73.00	25.00
4.40	81.0					0.112		
			P21I16	IN	UG =	2.65		
0.73	40.2	0.040	0.088	19.18	6.00	0.462	19.18	5.97
1.47	48.6	0.051	0.092	44.41	10.00	0.330	44.41	15.00
2.20	42.2	0.036	0.079	23.54	5.56	0.300	27.02	25.67
2.94	44.5	0.040	0.080	25.21	5.17	0.222	52.33	40.00
3.67	80.0					0.147		
			P22J16	IN	UG =	3.09		
0.73	40.8	0.080	0.083	30.00	10.00	0.397	30.00	20.00
1.47	45.5	0.054	0.099	43.90	20.00	0.332	20.44	35.19
2.20	66.3	0.055	0.097	55.99	29.12	0.200	56.00	28.07
2.94	74.0	0.050	0.100	61.62	50.00	0.185	61.62	52.01
			P23K16	IN	UG =	3.51		
0.73	51.8	0.084	0.101	20.02	9.60	0.427	20.02	9.58
1.47	57.5	0.065	0.104	42.13	9.19	0.338	42.13	30.00

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
P23K16 IN UG = 3.51								
2.20	65.0	0.047	0.094	52.27	26.19	0.220	65.00	40.00
P24L16 IN UG = 3.93								
0.73	52.9	0.060	0.102	41.00	10.00	0.300	41.00	19.27
1.47	51.7	0.062	0.098	51.00	19.00	0.210	51.00	19.47
2.20	62.5	0.058	0.093	62.00	19.00	0.190	62.00	30.00
P25M16 IN UG = 4.34								
0.73	31.2	0.055	0.092	31.00	13.00	0.260	31.00	15.00
1.47	63.9	0.051	0.090	64.00	30.00	0.200	64.00	30.00
P13A16 AB UG = 0.00								
2.20	24.9	0.000	0.000	0.00	0.00	0.472	25.00	1.45
2.94	29.9	0.000	0.000	0.00	0.00	0.384	28.37	2.68
3.67	33.2	0.000	0.000	0.00	0.00	0.301	33.00	1.45
4.40	36.7	0.000	0.000	0.00	0.00	0.247	36.38	2.68
5.14	44.0	0.000	0.000	0.00	0.00	0.231	41.41	4.11
5.87	55.6	0.000	0.000	0.00	0.00	0.200	50.70	2.07
P14B16 AB UG = 0.11								
2.20	25.1	0.000	0.009	25.00	3.20	0.495	24.89	3.15
2.94	27.5	0.000	0.002	27.35	2.79	0.380	27.35	2.31
3.67	33.2	0.002	0.005	31.50	2.00	0.291	31.50	2.00
4.40	38.8	0.000	0.005	38.51	2.40	0.250	38.51	3.00
5.14	43.3	0.000	0.001	43.24	3.00	0.195	43.24	3.00
5.87	50.6	0.000	0.005	49.00	2.00	0.150	49.00	2.00
6.60	55.0	0.000	0.000	57.00	3.00	0.130	57.00	3.00
7.34	67.0	0.000	0.005	65.00	3.00	0.110	65.00	3.00
P15C16 AB UG = 0.24								
2.20	24.5	0.006	0.011	23.24	2.00	0.483	23.24	2.09
2.94	27.8	0.005	0.016	27.02	3.60	0.375	27.02	3.62
3.67	33.9	0.010	0.012	32.13	3.70	0.260	32.13	3.69
4.40	34.5	0.000	0.013	34.50	10.00	0.280	39.35	4.40
5.14	45.3	0.000	0.004	45.82	3.00	0.190	45.82	4.00
5.87	51.2	0.000	0.013	51.49	6.00	0.175	51.49	6.00
6.60	59.4	0.000	0.009	59.75	3.00	0.140	59.75	3.00
7.34	66.0	0.000	0.021	67.37	3.00	0.120	67.37	2.32
P16D16 AB UG = 0.44								
2.20	22.6	0.000	0.018	23.33	2.31	0.513	23.33	3.81
2.94	26.9	0.007	0.014	25.77	5.60	0.419	25.77	5.61
3.67	33.5	0.015	0.019	33.59	5.50	0.341	33.59	5.50
4.40	42.2	0.005	0.012	41.00	10.00	0.267	48.60	10.32
5.14	47.9	0.010	0.015	49.07	7.60	0.197	49.07	7.62
5.87	54.7	0.010	0.021	57.28	5.40	0.155	57.28	5.35
6.60	65.7	0.005	0.021	66.72	3.00	0.140	66.72	4.00
7.34	69.1	0.005	0.007	69.00	7.50	0.130	71.00	7.50
P17E16 AB UG = 0.88								
2.20	27.7	0.019	0.022	20.25	9.00	0.447	20.25	9.18
2.94	44.9	0.012	0.029	40.00	10.00	0.300	40.00	19.21
3.67	48.6	0.016	0.029	45.00	10.00	0.334	45.00	20.70
4.40	53.7	0.022	0.035	60.06	15.00	0.160	62.61	16.66
5.14	43.6	0.029	0.034	63.39	10.00	0.159	63.39	11.89

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
P17E16 AB				UG = 0.88				
5.87	68.2	0.025	0.029	68.74	12.00	0.145	68.74	11.91
6.60	73.0	0.030	0.032	73.00	8.00	0.130	73.00	7.94
P18F16 AB				UG = 1.33				
1.47	25.4	0.048	0.048	19.04	4.70	0.498	19.04	4.69
2.20	40.8	0.026	0.056	30.00	10.00	0.360	30.00	10.00
2.94	50.5	0.034	0.046	50.50	20.00	0.150	50.50	20.00
3.67	52.9	0.012	0.039	52.90	24.00	0.170	52.90	35.00
4.40	62.1	0.040	0.061	65.00	10.00	0.141	68.36	11.25
5.14	77.0	0.075	0.054	2.53	0.90	0.110	77.00	1.49
P19G16 AB				UG = 1.77				
1.47	35.4	0.073	0.077	35.40	6.60	0.440	19.13	6.76
2.20	46.2	0.031	0.073	52.92	30.00	0.200	46.20	30.44
2.94	54.6	0.006	0.060	50.00	35.00	0.200	50.00	38.54
3.67	58.4	0.029	0.066	40.88	8.26	0.192	53.99	35.70
4.40	73.0	0.044	0.076	54.51	13.60	0.139	73.00	12.50
5.14	82.0					0.120		
P20H16 AB				UG = 2.21				
0.73	33.9	0.080	0.084	19.00	5.00	0.474	18.60	5.06
1.47	43.9	0.054	0.083	30.00	9.00	0.350	30.00	15.00
2.20	57.5	0.042	0.089	59.07	20.00	0.200	57.50	23.13
2.94	62.6	0.030	0.077	53.99	15.00	0.200	53.70	20.00
3.67	73.0	0.030	0.077	55.00	30.00	0.167	73.00	30.00
4.40	81.0					0.123		
P21I16 AB				UG = 2.65				
0.73	35.6	0.090	0.101	20.00	6.00	0.462	19.97	5.95
1.47	50.6	0.044	0.099	50.00	15.00	0.230	40.00	15.00
2.20	64.9	0.036	0.103	53.93	14.08	0.210	54.00	20.97
2.94	64.3	0.070	0.105	62.44	20.00	0.180	62.00	33.51
3.67	80.0					0.161		
P22J16 AB				UG = 3.09				
0.73	42.6	0.050	0.091	19.35	6.00	0.407	19.35	6.00
1.47	53.0	0.059	0.101	53.00	20.00	0.230	45.00	27.06
2.20	60.5	0.050	0.107	55.00	20.00	0.195	55.00	36.96
2.94	74.0	0.050	0.096	42.59	14.46	0.190	60.00	42.92
P23K16 AB				UG = 3.51				
0.73	44.7	0.060	0.101	20.00	10.00	0.433	20.31	10.42
1.47	59.7	0.050	0.121	37.41	11.41	0.200	37.41	20.00
2.20	52.2	0.057	0.115	43.44	15.00	0.205	45.00	19.45
P24L16 AB				UG = 3.93				
0.73	54.1	0.069	0.121	54.00	10.00	0.310	40.00	12.93
1.47	55.1	0.070	0.119	54.81	10.64	0.225	40.00	40.00
2.20	55.3	0.053	0.115	36.51	34.47	0.256	33.81	38.36
P25M16 AB				UG = 4.34				
0.73	55.7	0.064	0.132	47.91	9.27	0.350	20.07	15.33
1.47	61.2	0.057	0.125	53.95	20.00	0.180	50.00	30.94
A14A13 IN				UG = 0.00				
5.96	44.7	0.000	0.000	0.00	0.00	0.531	43.34	4.55
7.16	51.2	0.000	0.000	0.00	0.00	0.475	48.47	4.19

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
A14A13 IN			UG = 0.00					
8.35	55.7	0.000	0.000	0.00	0.00	0.450	53.23	4.23
9.54	60.3	0.000	0.000	0.00	0.00	0.421	57.24	3.19
10.74	66.0	0.000	0.000	0.00	0.00	0.365	64.26	2.64
11.93	71.5	0.000	0.000	0.00	0.00	0.344	72.25	2.27
A16B13 IN			UG = 0.49					
4.77	41.8	0.020	0.023	40.44	5.10	0.580	40.44	5.09
5.96	46.3	0.021	0.009	34.50	1.64	0.535	43.74	5.54
7.16	51.7	0.001	0.024	52.50	1.64	0.478	49.61	5.34
8.35	56.4	0.020	0.028	53.73	5.50	0.445	53.73	5.55
9.54	61.9	0.000	0.005	59.00	4.40	0.391	58.99	4.44
10.74	67.4	0.010	0.060	66.28	8.80	0.351	66.28	8.76
A17C13 IN			UG = 0.92					
4.77	44.4	0.020	0.056	41.41	8.07	0.573	41.41	4.73
5.96	48.2	0.020	0.069	46.38	5.70	0.505	46.38	5.67
7.16	53.8	0.020	0.055	55.13	2.59	0.455	50.74	4.57
8.35	57.7	0.020	0.056	55.90	4.20	0.426	55.86	4.13
9.54	63.9	0.010	0.061	51.11	8.00	0.388	62.25	4.69
10.74	69.9	0.035	0.045	67.50	4.70	0.346	67.51	4.66
11.93	76.7	0.030	0.029	75.60	6.50	0.320	75.60	6.49
A18D13 IN			UG = 1.76					
3.58	40.9	0.087	0.087	40.50	5.90	0.577	40.49	5.92
4.77	45.4	0.039	0.106	20.95	7.81	0.540	42.57	4.77
5.96	49.5	0.070	0.106	47.28	3.00	0.492	47.28	3.01
7.16	53.1	0.038	0.105	55.36	2.68	0.459	50.78	5.76
8.35	58.3	0.050	0.104	58.00	3.30	0.417	56.97	3.26
9.54	65.0	0.030	0.097	45.00	10.00	0.371	64.24	2.63
11.93	79.3	0.036	0.115	70.00	8.00	0.291	77.59	6.00
A19E13 IN			UG = 3.53					
3.58	42.4	0.104	0.139	40.30	10.20	0.562	41.33	4.95
4.77	47.6	0.080	0.151	46.30	2.70	0.509	46.30	2.65
5.96	50.9	0.100	0.165	51.80	13.80	0.484	51.80	13.85
7.16	56.8	0.100	0.189	55.50	2.73	0.428	55.51	2.73
8.35	61.3	0.110	0.213	59.35	7.10	0.400	59.35	5.00
9.54	68.8	0.100	0.220	68.43	8.60	0.347	68.43	8.64
10.74	75.4	0.059	0.179	37.73	20.25	0.305	75.80	11.70
11.93	84.3					0.290		
A20F13 IN			UG = 5.25					
3.58	45.1	0.130	0.145	40.50	4.00	0.595	40.50	4.00
4.77	49.0	0.100	0.136	46.90	2.90	0.497	46.91	2.88
5.96	52.7	0.089	0.177	50.21	2.47	0.470	50.92	5.64
7.16	56.4	0.130	0.196	55.55	2.70	0.432	55.55	2.74
8.35	62.0	0.120	0.238	60.80	6.70	0.398	60.86	6.75
9.54	69.4	0.120	0.274	69.67	8.00	0.340	70.70	8.62
10.74	78.8	0.140	0.200	76.72	9.00	0.300	79.69	6.25
11.93	89.3					0.270		
A21G13 IN			UG = 7.01					
2.39	40.0	0.186	0.241	39.40	8.00	0.600	39.40	8.00
3.58	43.9	0.127	0.227	50.29	7.06	0.580	43.91	5.50

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
			A21G13	IN	UG = 7.01			
4.77	48.8	0.126	0.188	46.00	7.60	0.510	46.11	7.60
5.96	54.2	0.112	0.211	44.03	7.22	0.476	51.90	7.06
7.16	56.5	0.124	0.223	57.58	3.06	0.442	55.54	6.16
8.35	64.5	0.130	0.260	63.80	6.30	0.389	63.82	6.26
9.54	72.2	0.150	0.267	71.70	7.00	0.358	71.66	6.22
10.74	80.3	0.116	0.237	35.20	26.55	0.293	80.77	7.09
			A22H13	IN	UG = 8.74			
2.39	40.2	0.159	0.224	40.00	6.30	0.600	40.62	6.32
3.58	46.9	0.190	0.193	46.90	6.00	0.590	44.00	6.00
4.77	50.6	0.187	0.187	51.60	5.60	0.510	48.50	5.61
5.96	53.8	0.139	0.214	55.13	2.59	0.447	52.67	4.61
7.16	57.5	0.200	0.219	60.00	6.60	0.450	57.00	6.56
8.35	63.2	0.103	0.216	23.52	25.55	0.382	62.82	4.92
9.54	68.2	0.145	0.243	68.04	12.43	0.367	68.36	10.26
10.74	75.5	0.200	0.231	76.78	9.00	0.320	78.80	9.50
			A23I13	IN	UG = 10.46			
2.39	41.0	0.170	0.207	40.76	6.20	0.596	40.76	6.18
3.58	46.5	0.177	0.219	44.20	6.13	0.553	44.22	6.13
4.77	50.7	0.188	0.214	48.00	3.30	0.469	47.97	3.26
5.96	50.2	0.193	0.202	50.75	8.30	0.515	50.75	8.31
7.16	55.4	0.200	0.203	55.00	6.70	0.481	54.82	6.68
8.35	63.5	0.200	0.204	62.40	7.90	0.426	62.39	7.87
9.54	69.2	0.175	0.202	54.59	9.90	0.418	68.20	8.77
10.74	81.3	0.180	0.181	76.60	8.80	0.340	76.61	8.77
			A24J13	IN	UG = 12.17			
2.39	40.9	0.175	0.234	40.00	6.00	0.600	40.42	5.98
3.58	47.3	0.181	0.216	54.40	2.33	0.536	43.57	6.07
4.77	49.9	0.204	0.218	52.50	1.64	0.500	46.99	7.11
5.96	55.0	0.179	0.206	46.96	6.30	0.450	52.46	7.52
7.16	58.3	0.164	0.209	59.16	2.49	0.441	55.98	9.16
8.35	65.6	0.170	0.222	64.20	5.70	0.382	64.18	5.67
9.54	73.5	0.182	0.232	65.59	3.12	0.356	70.62	13.28
			A25K13	IN	UG = 13.94			
2.39	41.4	0.185	0.236	35.00	7.00	0.600	41.35	7.00
3.58	47.4	0.180	0.226	48.00	5.60	0.528	44.16	5.44
4.77	50.9	0.200	0.223	50.00	5.80	0.481	47.60	5.85
5.96	53.8	0.204	0.217	52.50	1.64	0.488	51.85	5.85
7.16	57.1	0.194	0.217	57.27	9.00	0.420	55.13	9.00
8.35	64.7	0.197	0.230	66.63	3.04	0.404	62.65	7.82
9.54	72.8	0.194	0.211	61.50	1.64	0.343	70.99	8.93
			A26L13	IN	UG = 15.64			
2.39	41.0	0.212	0.237	31.83	2.60	0.584	40.32	8.84
3.58	47.2	0.213	0.259	47.00	5.00	0.530	45.24	5.00
4.77	49.5	0.210	0.234	52.50	1.64	0.492	47.76	7.44
5.96	55.7	0.230	0.245	54.00	6.20	0.440	53.90	6.17
7.16	58.3	0.194	0.236	58.30	8.00	0.441	56.12	8.02
8.35	64.1	0.210	0.253	63.14	9.50	0.400	63.14	9.50
9.54	73.7	0.215	0.224	61.50	1.64	0.352	71.04	12.48

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
A27M13 IN				UG = 17.31				
2.39	40.5	0.247	0.247	40.00	4.00	0.650	40.01	4.00
3.58	46.8	0.223	0.249	43.00	7.00	0.550	43.21	7.02
4.77	50.4	0.200	0.248	50.00	8.70	0.514	46.18	8.67
5.96	54.7	0.210	0.239	52.00	10.00	0.508	51.97	10.08
7.16	61.9	0.232	0.241	52.50	1.64	0.422	59.15	9.88
8.35	65.6	0.223	0.247	52.50	15.00	0.420	62.64	17.46
9.54	73.0	0.200	0.240	70.90	12.00	0.360	70.90	11.59
A14A13 AB				UG = 0.00				
5.96	45.8	0.000	0.000	0.00	0.00	0.525	45.46	2.35
7.16	49.9	0.000	0.000	0.00	0.00	0.480	48.21	4.32
8.35	54.5	0.000	0.000	0.00	0.00	0.467	52.70	3.54
9.54	58.8	0.000	0.000	0.00	0.00	0.437	56.53	5.91
10.74	63.9	0.000	0.000	0.00	0.00	0.384	63.32	2.30
11.93	69.4	0.000	0.000	0.00	0.00	0.357	68.69	3.91
A16B13 AB				UG = 0.49				
4.77	44.0	0.004	0.023	45.57	2.39	0.550	40.22	2.83
5.96	45.8	0.029	0.009	44.50	3.40	0.533	44.50	3.44
7.16	50.6	0.019	0.024	52.50	1.64	0.475	49.11	6.29
8.35	55.7	0.015	0.028	53.65	4.83	0.447	53.65	4.83
9.54	66.3	0.000	0.005	58.50	4.75	0.360	58.53	4.75
10.74	65.6	0.005	0.060	65.50	3.11	0.354	65.56	3.11
A17C13 AB				UG = 0.92				
4.77	44.1	0.005	0.056	44.00	5.00	0.580	40.55	4.78
5.96	46.8	0.040	0.069	46.70	3.00	0.514	46.72	2.80
7.16	52.5	0.024	0.055	55.52	2.73	0.457	49.99	4.46
8.35	56.0	0.028	0.056	55.00	4.30	0.436	55.08	4.25
9.54	62.3	0.030	0.061	61.00	4.00	0.402	61.03	4.00
10.74	67.2	0.030	0.045	66.30	5.40	0.358	66.29	5.39
11.93	74.3	0.036	0.036	74.60	2.87	0.320	74.63	3.14
A18D13 AB				UG = 1.76				
3.58	41.1	0.080	0.087	39.70	5.52	0.611	39.67	5.52
4.77	43.7	0.050	0.106	41.70	5.50	0.559	41.69	5.49
5.96	48.1	0.040	0.106	46.00	6.00	0.511	45.88	6.04
7.16	52.3	0.050	0.105	55.60	2.76	0.472	50.43	5.60
8.35	56.9	0.060	0.104	56.50	6.00	0.427	56.47	3.08
9.54	63.0	0.040	0.097	50.00	7.00	0.378	63.49	2.36
10.74	68.5	0.021	0.069	26.19	23.82	0.343	75.86	4.84
11.93	76.9	0.044	0.069	76.40	7.90	0.310	76.38	7.90
A19E13 AB				UG = 3.53				
3.58	41.6	0.098	0.139	31.11	5.30	0.577	40.85	5.28
4.77	46.4	0.078	0.151	19.63	14.90	0.514	46.02	2.55
5.96	50.2	0.110	0.165	51.50	10.00	0.481	51.45	16.01
7.16	54.5	0.100	0.189	54.50	3.00	0.438	54.63	2.41
8.35	60.3	0.100	0.213	60.00	7.00	0.431	58.70	8.80
9.54	66.1	0.110	0.220	66.30	11.00	0.340	66.35	10.84
10.74	73.0	0.100	0.193	73.00	10.00	0.308	74.69	3.16
11.93	84.3					0.270		

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
A20F13 AB				UG = 5.25				
3.58	44.3	0.100	0.145	40.20	5.00	0.600	40.20	5.00
4.77	46.9	0.087	0.136	12.98	21.98	0.519	46.37	2.68
5.96	50.8	0.115	0.177	49.20	2.83	0.466	50.19	5.91
7.16	54.8	0.120	0.196	55.00	12.00	0.432	54.66	3.92
8.35	60.1	0.087	0.238	61.07	4.48	0.408	58.99	4.56
9.54	69.1	0.120	0.274	69.12	6.00	0.350	69.29	6.00
10.74	76.5	0.130	0.217	78.40	7.00	0.330	78.37	7.00
11.93	89.3					0.290		
A21G13 AB				UG = 7.01				
2.39	39.5	0.198	0.241	40.60	2.69	0.583	38.94	3.25
3.58	43.7	0.132	0.227	48.59	9.06	0.570	43.51	5.26
4.77	48.5	0.127	0.188	54.41	2.33	0.505	46.20	5.18
5.96	52.4	0.135	0.211	41.54	7.70	0.480	51.12	5.84
7.16	57.1	0.111	0.223	56.75	7.07	0.442	55.69	5.06
8.35	63.3	0.124	0.260	62.31	11.84	0.382	64.03	4.01
9.54	69.2	0.152	0.281	62.38	13.11	0.348	69.80	7.17
10.74	80.3	0.140	0.238	70.00	7.10	0.300	80.95	7.11
A22H13 AB				UG = 8.74				
2.39	40.1	0.160	0.224	40.00	6.60	0.595	40.25	6.62
3.58	45.0	0.171	0.193	44.00	4.20	0.532	43.96	4.23
4.77	50.1	0.124	0.187	50.46	2.38	0.482	47.63	3.14
5.96	54.2	0.121	0.214	55.47	4.60	0.438	53.12	4.92
7.16	56.9	0.137	0.219	53.73	16.25	0.438	55.95	6.02
8.35	62.0	0.170	0.216	62.00	8.00	0.390	62.15	5.23
9.54	66.8	0.164	0.240	68.64	18.75	0.373	67.82	11.71
10.74	75.8	0.190	0.240	77.30	10.00	0.320	77.32	9.34
A23I13 AB				UG = 10.46				
2.39	41.0	0.155	0.207	27.13	12.04	0.580	40.64	5.11
3.58	46.0	0.122	0.219	48.90	6.36	0.588	43.16	6.42
4.77	49.6	0.158	0.214	48.00	6.80	0.497	47.19	6.76
5.96	50.2	0.168	0.202	50.00	7.70	0.490	50.72	7.64
7.16	54.3	0.200	0.203	54.00	7.30	0.480	53.98	7.26
8.35	62.4	0.165	0.196	55.00	9.50	0.440	60.91	9.51
9.54	69.7	0.190	0.207	68.00	9.34	0.390	67.93	9.10
10.74	81.3	0.163	0.195	67.33	2.79	0.340	75.19	9.22
A24J13 AB				UG = 12.17				
2.39	40.4	0.210	0.234	40.40	6.50	0.600	40.45	6.50
3.58	47.2	0.185	0.216	44.00	6.00	0.530	43.77	6.08
4.77	48.6	0.190	0.218	47.00	6.10	0.496	46.93	6.06
5.96	53.9	0.188	0.206	51.60	6.50	0.460	51.63	6.50
7.16	57.0	0.167	0.209	54.25	17.42	0.440	55.52	7.23
8.35	63.6	0.168	0.222	47.44	13.75	0.400	62.19	9.34
9.54	71.0	0.195	0.250	69.70	10.00	0.354	69.65	10.07
A25K13 AB				UG = 13.94				
2.39	41.5	0.220	0.236	40.80	6.60	0.600	40.83	6.60
3.58	47.9	0.168	0.226	37.33	2.66	0.539	43.41	7.03
4.77	49.5	0.202	0.223	52.50	1.64	0.509	46.83	7.46
5.96	53.9	0.200	0.217	51.90	8.50	0.472	51.91	8.45

Table 14 (continued)

UL	H	EGLOW	EGUPP	IG	GSIG	ESLOW	IS	SSIG
A25K13 AB				UG = 13.94				
7.16	57.6	0.170	0.221	55.50	10.90	0.443	55.48	10.88
8.35	64.5	0.189	0.230	68.25	9.00	0.380	62.66	9.61
9.54	71.7	0.198	0.222	69.70	10.00	0.350	69.68	9.98
A26L13 AB				UG = 15.64				
2.39	40.8	0.207	0.237	30.00	4.33	0.593	39.79	7.90
3.58	46.1	0.194	0.259	40.00	6.80	0.555	43.43	6.78
4.77	49.5	0.207	0.234	52.50	1.64	0.486	47.33	6.45
5.96	53.8	0.186	0.245	43.99	7.21	0.483	51.61	7.08
7.16	56.6	0.200	0.243	54.90	9.75	0.450	54.85	9.75
8.35	62.9	0.200	0.253	60.00	10.50	0.400	60.90	10.50
9.54	69.3	0.224	0.236	70.00	8.40	0.375	70.09	8.36
A27M13 AB				UG = 17.31				
2.39	39.3	0.240	0.247	39.50	6.90	0.600	39.47	6.91
3.58	45.9	0.219	0.249	43.00	6.00	0.551	43.11	6.02
4.77	48.1	0.202	0.248	45.50	9.00	0.530	45.36	8.95
5.96	54.1	0.210	0.239	51.70	9.20	0.479	51.71	9.13
7.16	59.7	0.226	0.243	58.00	10.00	0.459	57.79	10.14
8.35	61.9	0.220	0.245	60.30	11.25	0.436	60.34	11.25
9.54	69.6	0.220	0.257	67.00	15.00	0.389	67.62	15.07

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