

MultiVolume Pycnometer 1305 and Accessories



For rapid volume measurement of dry powders and solids. Uses sample sizes from 150 to 0.5 cm³ with ± 0.1 to 0.2% volume accuracy over the entire measurement range.

130-50000-00 Universal electrical input

VACUUM GREASE



008-16045-00 Silicone, high vacuum, 150 g

FUSE



003-51135-00 Slow-Blow, 3 AG, 0.5 A, for 100/120 V mains
003-51141-01 Slow-Blow, 5 x 20 mm, for 200/240 V mains

REDUCER



004-25549-00 1/8-in. (0.32-cm) compression fitting to 1/4-in. (0.64-cm) tube

VOLUME DISPLACEMENT INSERT



135-25803-00 For a 5-cm³ sample cup
135-25802-00 For a 35-cm³ sample cup

FILTER GASKET



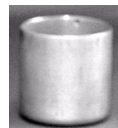
004-27039-00 Cajon (Swagelok) filter gasket for plumbing assembly

CALIBRATION STANDARD



135-25813-00 2.43 cm³
130-25658-00 16.76 cm³
135-25815-00 25.49 cm³

SAMPLE CUP



135-25805-00 5-cm³ sample capacity
135-25804-00 35-cm³ sample capacity
135-25812-00 150-cm³ sample capacity

FERRULE



004-25103-00 Front, Teflon, for 1/4-in. (0.64-cm) OD tubing
004-25198-00 Front, Brass, for 1/8-in. (0.32-cm) OD tubing
004-25104-00 Rear, Nylon, for 1/4-in. (0.64-cm) OD tubing
004-25199-00 Rear, Brass, for 1/8-in. (0.32-cm) OD tubing

O-RING



004-25078-00 Buna-N, Size 032, for sample chamber cap

GAS REGULATOR



004-62230-58 CGA 580 fitting, 30 psig
004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.

GAS INLET ASSEMBLY



230-02001-00
Copper, 1/8-in. with 1/8-in. Swagelok nut and ferrules (6-foot length)

MANUAL



135-42801-00 Operator's

KIT

135-33603-00 Extended Operation Supplies; includes fuses, O-rings, filters, and sample cups.

AccuPyc 1340 Pycnometer and Accessories; AccuPyc 1330 Accessories



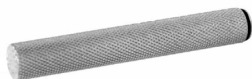
Analysis Module

Control Module

The AccuPyc accurately and precisely measures the density of solids having volumes from 0.1 to 350 cm³.

- | | |
|--------------|---|
| 134-00000-00 | 10-cm ³ sample capacity control module |
| 134-00001-00 | 1-cm ³ sample capacity control module |
| 134-00002-00 | 100-cm ³ sample capacity control module |
| 134-00010-00 | 10-cm ³ sample capacity control module, with temperature control capability |
| 134-00020-00 | 100-cm ³ sample capacity control module, with temperature control capability |
| 134-00030-00 | 10-cm ³ sample capacity analysis module, with glove box module |
| 134-00031-00 | 1-cm ³ sample capacity analysis module, with glove box module |
| 134-00032-00 | 100-cm ³ sample capacity analysis module, with glove box module |
| 134-00033-00 | 350-cm ³ sample capacity analysis module, with glove box module |
| 134-00040-00 | 10-cm ³ sample capacity analysis module |
| 134-00041-00 | 1-cm ³ sample capacity analysis module |
| 134-00042-00 | 100-cm ³ sample capacity analysis module |
| 134-00043-00 | 350-cm ³ sample capacity analysis module |

HANDLING TOOL



133-09810-00 For handling 1-cm³ sample cups

SAMPLE CUP



- | | |
|--------------|-------------------------------------|
| 133-25855-00 | 1-cm ³ sample capacity |
| 133-25805-00 | 10-cm ³ sample capacity |
| 133-25845-00 | 100-cm ³ sample capacity |
| 133-25845-02 | 350-cm ³ sample capacity |

Filtered Cup Assembly

Used to constrain powdered samples



- | | |
|--------------|--|
| 133-25862-00 | 10-cm ³ |
| 133-25863-00 | 100-cm ³ |
| 004-27055-00 | Filter paper for 100-cm ³ cup, package of 100 |

GREASING DISK



133-25825-00 Used to grease the O-ring in the chamber cap

SAMPLE CUP INSERT



Allows measurement of smaller samples with the 1-cm³ AccuPyc

133-25855-01 0.1-cm³ sample capacity

Retaining Pliers



133-09601-00 For handling 0.1-cm³ sample cup insert

KEYPAD TEMPLATE



- | | |
|--------------|---------|
| 133-42701-01 | French |
| 133-42701-02 | German |
| 133-42701-03 | Spanish |
| 133-42701-04 | Italian |

VACUUM GREASE



008-16045-00 Silicone, high vacuum, 150 g

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig
- 004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
- 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

GAS INLET ASSEMBLY



- Copper, 1/8-in. with 1/8-in. Swagelok nut and ferrules (6-foot length)
- 290-25846-00 For AccuPyc 1340; uses Valco ferrules
- 230-02001-00 For AccuPyc 1330

O-RING



- 004-25637-00 Chamber cap, 1-cm³ sample module
- 004-25575-00 Chamber cap, 10-cm³ sample module
- 004-25577-00 Chamber cap, 100-cm³ sample module
- 004-25689-00 Chamber cap, 350-cm³ sample module
- 004-25469-00 For inlet filter

TUBING



- 008-32131-00 4 ft. flexible; for connecting a circulating bath unit to the AccuPyc 1330TC



- Tube Fitting**
- 004-25549-00 1/8-in. (0.32-cm) compression fitting to 1/4-in. (0.64-cm) tube
- 004-25681-01 1/4 in. (0.64), set of 2; for bath circulator connectors on temperature-controlled units.

CALIBRATION STANDARD



- 133-34901-00 For 1-cm³ AccuPyc
- 133-34900-00 For 10-cm³ AccuPyc
- 133-34902-00 For 100-cm³ AccuPyc
- 133-34903-00 For 350-cm³ AccuPyc

SOFTWARE AND MANUAL



AccuPyc II 1340

Stand Alone

- 134-33003-00 FoamPyc Option, for analysis of rigid foam materials; includes software and operator's manual
- 134-42801-00 Operator's manual
- 134-42803-00 Operator's manual, FoamPyc Option

Windows®

- 134-33005-00 FoamPyc Option, for analysis of rigid foam materials; includes software and operator's manual
- 134-42802-00 Operator's manual
- 134-42804-00 Operator's manual, FoamPyc Option

AccuPyc 1330

- 133-33006-00 FoamPyc Option, for analysis of rigid foam materials; includes software and operator's manual
- 133-42808-00 Operator's manual, 10- and 100-cm³
- 133-42807-00 Operator's manual, 1-cm³
- 133-42810-00 Operator's manual, temperature-controlled unit

KIT

- 134-33020-00 Multigas manifold option
- 133-33009-00 FoamPyc Sample Preparation Kit
- 133-33601-00 Extended Operation Supplies for AccuPyc 1330; includes O-rings, fuse, frit, and grease

MultiVolume Kit; allows analysis of smaller samples without sacrificing accuracy or reproducibility.

AccuPyc 1340

- 133-33604-00 100-cm³, contains 10 cm³ & 35 cm³ inserts
- 133-33605-00 10-cm³, contains 1 cm³ & 3.5 cm³ inserts
- 134-33006-00 1-cm³, contains 0.1 cm³ insert

AccuPyc 1330

- 133-33002-00 100-cm³
- 133-33003-00 10-cm³

GeoPyc 1360 Pycnometer



Determines envelope or T.A.P. densities and/or volumes using a unique displacement method. When absolute density is provided (AccuPyc 1340), the GeoPyc® also calculates pore volume and percent porosity. Universal electrical input.

136-00000-00	GeoPyc 1360 Envelope Density Analyzer
136-00001-00	GeoPyc 1360 T.A.P.™ Density Analyzer
136-33005-00	T.A.P. Density Upgrade
136-33006-00	Envelope Density Upgrade

SAMPLE CHAMBER ASSEMBLY



Includes plunger, cup seal, and quad ring. One sample chamber of choice included with purchase of instrument.

136-25801-00	12.7-mm ID
136-25802-00	19.1-mm ID
136-25803-00	25.4-mm ID
136-25804-00	38.1-mm ID
136-25805-00	50.8-mm ID

Sample Chamber

136-25801-10	12.7-mm ID
136-25802-10	19.1-mm ID
136-25803-10	25.4-mm ID
136-25804-10	38.1-mm ID
136-25805-10	50.8-mm ID

Plunger Assembly

Consists of piston and piston rod.

136-25801-11	For 12.7-mm ID chamber
136-25802-11	For 19.1-mm ID chamber
136-25803-11	For 25.4-mm ID chamber
136-25804-11	For 38.1-mm ID chamber
136-25805-11	For 50.8-mm ID chamber

PLUNGER ACCESSORIES

Piston



136-25801-07	For 12.7-mm ID chamber
136-25802-07	For 19.1-mm ID chamber
136-25803-07	For 25.4-mm ID chamber
136-25804-07	For 38.1-mm ID chamber
136-25805-07	For 50.8-mm ID chamber



Piston Rod

136-25801-03	Small, for 12.7-, 19.1-, and 25.4-mm chambers
136-25804-03	Large, for 38.1- and 50.8-mm chambers



Piston Coupling Extender

136-25852-01	For T.A.P. density measurements using the 38.1- and 50.8-mm ID chambers
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DRYFLO®



004-16831-00	3 Liters
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SIEVE



004-27059-00 No. 35, 500 mm
004-27065-00 Pan; used to catch DryFlo

FUNNEL



004-32177-00 Plastic, for adding DryFlo to the sample chamber

BRUSH



004-54613-00 3/8-in. wide x 3/4-in. long

MAT



136-25815-00 Black, for sample compartment

KEYPAD TEMPLATE



136-42001-00 English
136-42002-00 Spanish
136-42003-00 French
136-42004-00 German
136-42005-00 Italian

SOFTWARE AND MANUALS



136-42801-00 Operator's, Envelope Density
136-42805-00 Operator's, T.A.P. Density

ASAP 2020 Physisorption and Accessories; ASAP 2010 Accessories



Measures surface area and pore size by physisorption. The one-port analysis manifold/vacuum system and two-port degas manifold/vacuum system are independent and operate concurrently. Powerful Windows-based operating program. Includes DFT Plus® software.

202-00000-11	Nitrogen System, 110 V
202-00000-22	Nitrogen System, 220 V
202-00103-00	HiVac System
202-00123-00	HiVac System, Kalrez
202-00117-00	Micropore System
202-00127-00	Micropore System, Kalrez

REFERENCE MATERIAL



004-16816-00	Alumina, 0.49 m ² /g (Krypton), 10 g
004-16818-00	Glass, 5.8 m ² /g, 10 g
004-16821-00	Silica-alumina pellets, surface area 198 m ² /g, 10 g
004-16843-00	Micropore, 13X, 10 g, ASAP 2020
004-16844-00	Micropore, Y-zeolite, 2.5 g, ASAP 2020
004-16826-00	Micropore, 10 g, ASAP 2010
004-16833-00	Carbon Black, 24.1 m ² /g, 10 g

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00 Model 021

FILTER DISK



004-27041-00 For port fittings, 20-micron, 1/4-in. diameter x 1/16-in. thick

DEWAR AND ACCESSORIES



ASAP 2020

202-25850-00	3 Liter, analysis
202-25849-00	3 Liter, cold trap

ASAP 2010

004-25871-00	1.9 Liter, standard
004-25872-00	1.9 Liter with hanging clip, for cold traps
200-25928-00	1 Liter, wide mouth, for monolith sample tube
201-33027-00	Dewar Kit, extended life; includes 1 each 2.5 Liter analysis Dewar and cold trap Dewar, and required hardware

Dewar Cover



ASAP 2020

200-31707-00	Analysis
202-31708-00	Cold Trap

ASAP 2010

200-25846-00	Cold trap, steel
200-25846-01	Cold trap, glass
240-25814-00	For 1.9-Liter Dewar
200-25929-00	For 1-Liter Dewar

Dewar Depth Gauge



240-25901-00	For checking liquid nitrogen level
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SAMPLE TUBE AND ACCESSORIES



- 240-61001-00 10-cm³ bulb, 1/4-in. (0.64-cm) OD stem
- 240-61002-00 10-cm³ bulb, 3/8-in. (0.96-cm) OD stem
- 240-61003-00 10-cm³ bulb, 1/2-in. (1.27-cm) OD stem
- 240-61007-00 Monolith, 1/4-in. (0.64-cm) OD stem, with springs, 1/2-in. (1.27-cm) ID x 1-in. (2.5-cm) capacity
- 240-61020-00 Monolith, 1/2-in. (1.27-cm) OD stem, with springs, 1-in. (2.5-cm) ID x 1-in. (2.5-cm) capacity
- 004-61066-00 Straight-wall, 1/2-in. OD (1.27-cm) stem, 10-1/2 in. (26.67 cm) long
- 004-61063-00 Glass, 1/2-in. (1.27-cm) OD stem, 11 in. long, for cold trap

Filler Rod



- 240-61014-00 For 1/4-in. (0.64-cm) OD sample tube stem
- 240-61015-00 For 3/8-in. (0.96-cm) OD sample tube stem
- 240-61016-00 For 1/2-in. (1.27-cm) OD sample tube stem

Rubber Stopper



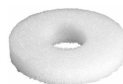
- 240-32000-00 For 1/2-in (1.27-cm) sample tube stems
- 004-32004-00 For 1/4-in. (0.64-cm) & 3/8-in (0.96 cm) sample tube stems

Funnel



- 240-25853-00 For filling sample tubes

Weighing Support



- For supporting sample tubes while weighing
- 240-32805-00 For bulb sample tube
- 280-32800-00 For straight-wall sample tube



Brush

- 004-54609-00 For cleaning sample tubes

Sample Tube Rack



- 240-14855-00 For holding sample tubes

SAMPLE TUBE AND ACCESSORIES (continued)



Transeal

Allows transfer of the sample while still under vacuum from the preparation station to the analysis station. Fits only 1/2-in (1.27-cm) sample tubes.

- 201-33026-00 Starter kit; includes three Transeals, hardware, and instructions
- 300-25862-00 Transeal assembly

ISOTHERMAL JACKET



ASAP 2020

- 202-25901-00 For 1/4-in. (0.64-cm) OD sample tube stem
- 202-25902-00 For 3/8-in. (0.96-cm) OD sample tube stem
- 202-25903-00 For 1/2-in. (1.27-cm) OD sample tube stem

ASAP 2010

- 240-32803-03 For 1/4-in. (0.64-cm) OD sample tube stem
- 240-32803-02 For 3/8-in. (0.96-cm) OD sample tube stem
- 240-25867-00 For 1/2-in. (1.27-cm) OD sample tube stem

HEATING MANTLE WITH THERMOCOUPLE



Clip

ASAP 2020

- 003-26043-00 450 °C, 24 VDC
- 230-25808-00 Heating Mantle Clip

ASAP 2010

- 003-26042-00 450 °C, 24 VDC (CE units)
- 200-26001-00 350 °C, Glass, 115 VAC, with K thermocouple
- 200-26002-00 450 °C, Quartz, 115 VAC, with K thermocouple
- 200-26003-00 350 °C, Glass, 115 VAC, with K thermocouple, for monolith sample tube

SEAL FRIT



Tool

- 260-25890-00 For 1/2-in sample tube
- 004-54130-00 Tool for seal frit; also used to remove and install openers in the sample ports

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
- 004-62230-35 CGA 350 fitting (CO, H₂), 30 psig
- 004-62230-54 CGA 540 fitting (O₂), 30 psig
- 004-62230-32 CGA 320 (CO₂), 30 psig
- 004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
- 004-33601-01 Expansion Kit; three outlets, includes fittings and instructions.
- 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

GAS INLET ASSEMBLY



Copper, 1/8-in. with 1/8-in. Swagelok nut and ferrules (6-foot length)

- 290-25846-00 For ASAP 2020
- 230-02001-00 For ASAP 2010

CALIBRATION BALL



135-25815-00 25.487 cm³, ASAP 2010; includes traceable certificate for ISO 9000 requirements

FERRULE



Plumbing

- 004-25103-00 Front, Teflon, for 1/4-in. (0.64-cm) OD tubing
- 004-25104-00 Rear Ferrule, Nylon, for 1/4-in. (0.64-cm) OD tubing

Sample Tube

- 240-25803-00 For 1/4-in. (0.64-cm) OD sample tube stem
- 240-25802-00 For 3/8-in. (0.96-cm) OD sample tube stem
- 260-25843-00 For 1/2-in. (1.27-cm) OD sample tube stem

SATURATION PRESSURE TUBE



200-25840-00 Includes isothermal jacket

O-RING



Buna-N

- 004-25466-00 Size 010, for sealing 1/4-in. (0.64-cm) OD sample tube stem and for degas manifold fittings
- 004-25022-00 Size 012, for sealing 3/8-in. (0.96-cm) OD sample tube stem
- 004-25044-00 Size 013, for sealing 1/2-in. (1.27-cm) OD sample tube stem
- 004-25006-00 Size 006, for Po tube
- 004-25652-00 Size 217, for oil vapor trap
- 004-25471-00 Size 018, for degas manifold; ASAP 2010
- 004-25030-00 Size 030, for calibration chamber cap; ASAP 2010

Kalrez®

- 004-25674-00 Size 006, for Po tube
- 004-25465-00 Size 010, for analysis manifold internal fittings
- 004-25474-00 Size 013, for sealing 1/2-in. (1.27-cm) OD sample tube stems
- 004-25675-00 Size 015, for sealing 1000-mmHg transducer; ASAP 2010

CONNECTOR NUT, KNURLED



- 300-25824-00 For sample tube, ASAP 2020
- 260-28804-00 For sample tube, ASAP 2010
- 202-25825-00 For cold trap, ASAP 2020
- 200-25979-00 For cold trap, ASAP 2010
- 260-25873-00 Plug, for sample port

VALVE ACCESSORIES



Plunger

- 250-25627-00 Buna-N seal
- 004-25459-00 Kalrez seal



Wrench

- 004-25157-00 Spanner, for servicing degas valves



Gasket

- 250-25608-00 Kel-F; for analysis manifold valves



Spring

- 201-22600-00 For Buna-N seal plunger
- 004-25936-00 For Kalrez seal plunger

RUBBER MAT, BLACK



- 202-25821-00 Front shelf, ASAP 2020
- 200-25882-02 Elevator area, ASAP 2010
- 200-25882-04 Degas area, CE units, ASAP 2010

VAPOR OPTIONS

ASAP 2020



- 202-33050-00 Allows water vapor adsorption studies; includes reservoir containing pre-purified water and installation instructions.

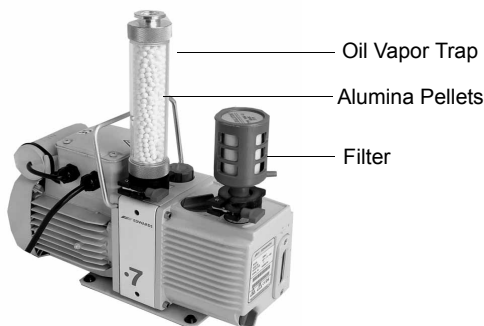


- 202-33051-00 Vapor supply option for vapor studies

ASAP 2010

- 201-33621-00 Vapor supply option for ASAP 2010

VACUUM PUMP AND ACCESSORIES



Includes vacuum hose, fittings, oil, and manual.

- 062-00001-11 115 V, pump for 2020
- 062-00001-23 230 V, pump for 2020
- 004-27040-00 Filter, for vacuum pump exhaust
- 200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina (for vacuum pumps)
- 004-16830-00 Activated alumina pellets, 500 grams
- 200-25879-00 Funnel, for filling vacuum pump with oil
- 004-16003-01 Oil, 1 Liter

VACUUM PUMP AND ACCESSORIES (continued)

Dry System



Includes vacuum hose, fittings, and manual.

- 062-00100-00 Oil-less vacuum pump

SOFTWARE AND MANUALS



- 202-33001-00 Current version software and operator's manual, ASAP 2020
- 202-33011-00 CFR Part 11 Confirm software and operator's manual
- 202-33021-00 Rate of Adsorption (ROA) Program; includes software, and operator's manual
- 202-33024-00 DataMaster Program; includes software, and operator's manual
- 202-33025-00 Isotherm Cycling option; includes operating instructions
- 202-42801-00 Operator's manual, ASAP 2020
- 201-42821-00 Operator's manual, ASAP 2010, CE units

KIT

- 202-33600-00 Extended Operation Supplies, Nitrogen system, ASAP 2020
- 202-33601-11 Standard degas option, 110 V; enables automatic degassing
- 202-33601-22 Same as 202-33601-11, 220 V
- 202-33602-00 Dry HiVac degas option; recommended when using Mass spec
- 202-33603-00 HiVac option, adds 10-mmHg transducer and high vacuum pump
- 202-33607-00 Micropore option, adds 1-mmHg transducer
- 202-33618-00 Chemi option, upgrades HiVac system to chemisorption system
- 201-33022-00 Hydrocarbon Manifold Upgrade Kit, ASAP 2010
- 004-62109-01 Service Kit for dry vacuum pump; includes replacement diaphragm and seals
- 202-33006-00 Chiller Dewar option, ASAP 2020; used when a chiller is attached to the ASAP analyzer for micropore or subambient temperatures
- 200-33006-00 Chiller Dewar option, ASAP 2010

ASAP 2020 Chemisorption and Accessories; ASAP 2010 Accessories



Measures metal dispersion and metal surface area by chemisorption. The one-port analysis manifold/vacuum system and two-port degas manifold/vacuum system are independent and operate concurrently. Powerful Windows-based operating program. Universal electrical input.

202-00108-00	Chemi System
202-00118-00	Chemi-Micropore System, 1-mmHg transducer
202-00128-00	Chemi-Micropore System, Kalrez

REFERENCE MATERIAL



004-16825-00	Pt-alumina Pellets, dispersion 30.5%, 5 grams
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LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00	Model 021
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O-RING



Kalrez

004-25465-00	Size 010, sample port filter disk
004-25678-00	Size 009, sample exhaust
004-25474-00	Size 013, sample inlet

HEATING MANTLE WITH THERMOCOUPLE



ASAP 2020C

003-26043-00	450 °C, 24 VDC
230-25808-00	Heating Mantle Clip

ASAP 2010C

003-26042-00	450 °C, 24 VDC (CE units)
200-26001-00	350 °C, Glass, 115 VAC, with K thermocouple
200-26002-00	450 °C, Quartz, 115 VAC, with K thermocouple
200-26003-00	350 °C, Glass, 115 VAC, with K thermocouple, for monolith sample tube

MAT



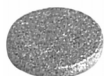
202-25821-00	Front shelf, ASAP 2020
200-25882-02	Elevator area, ASAP 2010
200-25882-04	Degas area, CE units, ASAP 2010

SAMPLE TUBE AND ACCESSORIES



004-61701-00 Quartz, for use with temperatures up to 1100 °C

004-61701-02 Filler rod for quartz tube



Filter
004-27056-00 For sample tube exhaust, 20-micron, 3/16-in. diameter
004-27041-00 For port fittings, 20-micron



Stopper Cap

Stopper
240-32000-00 Stopper, rubber for sample tube inlet
004-32604-00 Cap, plastic; for sample tube exhaust



Weighing Support
280-32800-00 For supporting sample tubes while weighing



Funnel
240-25853-00 For filling sample tubes



Brush
004-54609-00 For cleaning sample tubes



Quartz Wool
004-32164-01 4- x 6-in. bag, for containing samples in sample tubes

CALIBRATION BALL



135-25815-00 25.487 cm³, ASAP 2010; includes traceable certificate for ISO 9000 requirements

CONNECTOR NUT, KNURLED



300-25824-00 For sample tube to manifold
200-25979-00 For cold trap
201-25822-00 For sample tube exhaust

FERRULE



Front

Rear

Plumbing
004-25103-00 Front, Teflon, for 1/4-in. (0.64-cm) OD tubing
004-25104-00 Rear Ferrule, Nylon, for 1/4-in. (0.64-cm) OD tubing

Sample Tube
275-25803-00 For sample tube exhaust, 1/4 in. stainless steel
260-25843-00 For 1/2-in. (1.27-cm) OD sample tube stem

VALVE ACCESSORIES



Plunger
250-25627-00 Buna-N seal
004-25459-00 Kalrez seal



Wrench
004-25157-00 Spanner, for servicing degas valves in ASAP 2010



Gasket
250-25608-00 Kel-F; for analysis manifold valves




Spring
201-22600-00 For Buna-N seal plunger
004-25936-00 For Kalrez seal plunger

GAS REGULATOR

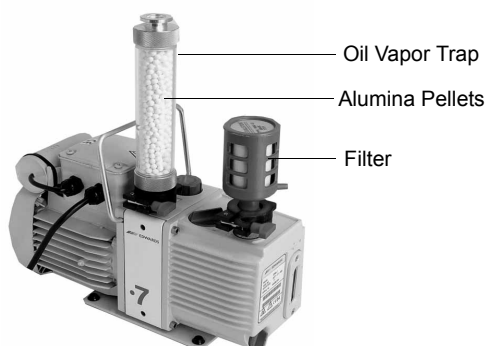


004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
004-62230-35 CGA 350 fitting (CO, H₂), 30 psig
004-62230-54 CGA 540 fitting (O₂), 30 psig
004-62230-32 CGA 320 (CO₂), 30 psig
004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
004-33601-01 Expansion Kit; three outlets, includes fittings and instructions.
004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

GAS INLET ASSEMBLY

	290-25846-00	Copper, 1/8 in., for Chemi controller, ASAP 2020/2010
	201-25818-00	Stainless Steel, 1/8 in., for Chemi controller inlets, ASAP 2020/2010
	230-02001-00	Copper, 1/8 in., with 1/8-in. Swagelok nut and ferrules installed, ASAP 2010

VACUUM PUMP AND ACCESSORIES



Includes vacuum hose, fittings, oil, and manual.

062-00001-11	115 V, pump for 2020
062-00001-23	230 V, pump for 2020
004-27040-00	Filter; for vacuum pump exhaust
200-33014-00	Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina (for vacuum pumps)
004-16830-00	Activated alumina pellets, 500 grams
200-25879-00	Funnel, for filling vacuum pump with oil
004-16003-01	Oil, 1 Liter


Dry System



Includes vacuum hose, fittings, and manual.

062-00100-00	Oil-less vacuum pump
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SOFTWARE AND MANUALS

	202-33013-00	Current version software and operator's manual, ASAP 2020 Chemi
	202-42808-00	Operator's manual, ASAP 2020 Chemi
	201-42828-00	Operator's manual, ASAP 2010 Chemi, CE units

KIT

Operating Supplies Kit; includes sample tube, O-rings, stoppers, ferrule, frit, quartz wool, and thermocouple clip

202-33608-00	ASAP 2020 Chemi
201-33608-00	ASAP 2010 Chemi

FlowSorb III and Accessories; FlowSorb II Accessories



FlowSorb III, a dynamic-flow physical adsorption instrument for single- and multipoint specific surface area analysis.

231-00000-00 FlowSorb III 2310, with automated elevator
230-50000-00 FlowSorb III 2305, manually operated

231-00002-00 DeSorb III; a three-station outgassing device which is useful where increased sample-throughput is needed for the FlowSorb. Universal electrical input. *Unavailable in countries requiring CE certification.*

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00 Model 021

FERRULE



004-25103-00 Front, Teflon, for 1/4-in. (0.64-cm) OD tubing
004-25104-00 Rear Ferrule, Nylon, for 1/4-in. (0.64-cm) OD tubing

HEATING MANTLE WITH THERMOCOUPLE



FlowSorb III
231-26001-00 Glass Fiber, 24 V (400 °C)
230-25808-00 Heating Mantle Clip

FlowSorb II
230-26001-00 Glass Fiber, 115 V, for standard sample tubes (350 °C)
230-26002-00 Glass Fiber, 115 V, for monolith sample tubes (350 °C)
270-26600-00 Quartz Fiber, 115 V, for standard sample tubes (400 °C)

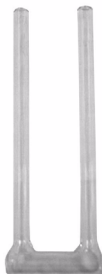
DEWAR AND ACCESSORIES



004-61004-00 350 mL, with safety sleeve and insulating cover



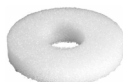
Dewar Cover
230-31801-00 Insulating, for standard Dewar
230-31801-01 Insulating, split, for cold trap Dewar

SAMPLE TUBE AND ACCESSORIES

- 230-61002-00 Cylindrical bottom, 1-cm³ capacity
 230-61006-00 Cylindrical bottom, 1-cm³ capacity, package of 6
 230-61007-00 Cylindrical bottom, 1-cm³ capacity, package of 12
 230-61003-00 Capillary stem, 1-cm³ capacity
 230-61004-00 4.7-cm³ capacity
 230-61005-00 Monolith, up to 2-cm diameter x 3-cm long solid sample capacity
 230-61001-00 Micro U-tube, 0.1-cm³ capacity

**Rubber Stopper**

- 004-32004-00 For sample tube

**Weighing Support**

For supporting sample tubes

- 230-32802-00 For standard sample tube
 230-32803-00 For monolithic sample tube

**Funnel**

- 240-25853-00 Nylon, for filling sample tubes

O-RING**Buna-N**

- 004-25034-00 Size 008, for sealing sample tube holder stems
 004-25466-00 Size 010, for sealing sample tube holder stems and cold trap stems

CALIBRATION SYRINGE

- 004-61602-00 Precision, 1 mL
 004-61606-00 Precision, 0.1 mL (Kr)
 004-61604-00 Precision, 10 mL

Septum

- 004-32602-00 For injection port

Replacement Injection Needle

- 004-61604-01 For 10-mL syringe, package of 3
 004-61602-01 For 0.1- and 1-mL syringes, package of 3

GAS REGULATOR

- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)

GAS SAMPLING ASSEMBLY

- 290-25842-00 For calibration injections

SOFTWARE AND MANUALS

- 231-42801-01 Operator's, FlowSorb III
 230-42804-00 Operator's, FlowSorb II
 230-42803-00 Operator's, DeSorb 2300A
 230-42802-00 Service, FlowSorb II

KIT

- 231-33603-00 Extended Operation Supplies for the FlowSorb. Includes septum, O-rings, ferrules, syringes with needles, sample tubes, fuses, stoppers, funnel, sample holder, Dewar, and cold trap cover.

Gemini V and Accessories



Keypad not used with Windows version

Determines single- and multipoint BET and Langmuir surface areas, total pore volume, and micropore analysis by the t-method. Universal electrical input.

- 236-50001-00 Gemini V 2365; with keypad
- 236-50000-00 Gemini V 2365; with Windows software
- 236-50000-00CFR Gemini V 2365; with CFR Part 11 Confirm software
- 238-00001-00 Gemini V 2380, also provides BJH pore volume distributions; with keypad
- 238-00000-00 Gemini V 2380, also provides BJH pore volume distribution; with Windows software
- 238-00000-00CFR Gemini V 2380, also provides BJH pore volume distribution; with CFR Part 11 Confirm software

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00 Model 021

DEWAR AND ACCESSORIES



004-61064-00 600 mL



Dewar Cover

236-31802-01 Right side
236-31802-02 Left side

REFERENCE MATERIAL



004-16818-00 Glass, ~ 5.8 m²/g, 10 g
004-16833-00 Carbon Black, ~ 24.1 m²/g, 10 g

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
- 004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
- 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

GLASS BEADS



For displacing volume in the balance tube equivalent to the volume of sample in the sample tube when analyzing high volume, low surface area samples.

004-61065-00 3 mm, 90 grams

RS-232 CABLE

003-60155-00 25- to 9-pin adaptor cable
003-20616-01 Shielded, 10 ft., Female/
Female

PORT FRIT

004-27046-00 40 micron, for sample tube
port
004-27024-00 2 micron, for balance tube
port

O-RING

Buna-N
004-25022-00 Size 012, for sealing 3/8-in.
(9.6-mm) OD sample tube
stem
004-25466-00 Size 010, for filter disk

SAMPLE TUBE AND ACCESSORIES

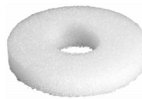
236-61702-00 3/4-in. (19.1-mm) OD bulb x
6.1-in. (155-mm) long, 9
cm³ sample capacity
236-61703-00 3/8-in. (9.6-mm) OD x 6.1
in. (155-mm) long, 2 cm³
sample capacity
236-61707-01 5/8-in. (16-mm) OD x 0.53-
in. (13.5-mm) ID x 6-in. (152
mm) long

Filler Rod

236-61704-00 For balance and sample
tubes, 7 mm x 146.1 mm
236-61705-00 For sample tube, 7 mm x
101.6 mm
236-61706-00 Hanging filler rod, 7 mm OD
236-61708-00 Hanging filler rod, 13 mm
OD
236-61709-00 Hanging filler rod, 25.4 mm
OD
236-33004-00 Filler Rod Accessory Kit;
includes two connectors
with hooks attached and two
7-mm filler rods.

**Rubber Stopper**

004-32004-00 For 1/4-in. (0.64-cm) &
3/8-in. (0.96-cm) sample
tube stems

**SAMPLE TUBE AND ACCESSORIES (continued)****Weighing Support**

280-32800-00 For supporting sample
tubes while weighing

**Funnel**

For filling sample tubes

240-25853-00 Nylon
004-25846-00 Aluminum

**Sample Tube Rack**

240-14855-00 For holding sample tubes

**Brush**

004-54611-00 For cleaning standard
sample tube
004-54612-00 For cleaning bulb sample
tube

FUSE

003-51113-00 Slow-Blow, 3 AG, 1.5 A, for all
power settings

KEYPAD TEMPLATE

236-42701-01 French
236-42701-02 German
236-42701-03 Spanish
236-42701-04 Italian

ISOTHERMAL INSERTS FOR SAMPLE PREP UNITS

Provides an isothermal shield around the
sample tube for maintaining a uniform
temperature

065-25811-00 For bulb sample tube
065-25812-00 For straight-wall sample tube

VACCUUM PUMP AND ACCESSORIES



- 062-00001-11 115 V; includes vacuum hose fittings, exhaust filter, oil, and manual
- 062-00001-23 230 V; includes vacuum hose fittings, exhaust filter, oil, and manual
- 004-27040-00 Filter; for vacuum pump exhaust
- 200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina
- 004-16830-00 Activated alumina pellets, 500 grams
- 200-25879-00 Funnel, for filling vacuum pump with oil
- 004-16003-01 Oil, 1 Liter

SOFTWARE AND MANUALS



- 238-33011-00 CFR Part 11 Confirm software and operator's manual
- 238-33002-00 Gemini V software and operator's manual
- 237-33021-00 C-Tab option; converts Geminis 2370 and 2375 to Gemini 2370C. Uses the t-layer thickness program to determine the surface area of carbon black.
- 237-33000-00 Room Temperature Option, allows you to measure gas and vapor adsorption on samples at temperatures in the range of -70 °C to +100 °C.
- 238-42801-00 Operator's manual, Keypad version, Geminis 2365/2380
- 238-42805-00 Operator's manual, Windows version, Geminis 2365/2380
- 237-42850-00 Operator's manual, Gemini 2375, for S/N 1200 and lower
- 236-42820-00 Operator's manual, Gemini 2360, for S/N 1201 and higher
- 237-42820-00 Operator's manual, Gemini 2370, for S/N 1201 and higher
- 237-42825-00 Operator's manual, Gemini 2375, for S/N 1201 and higher

KIT

- 236-33601-00 Extended Operating Supplies, includes sample tubes, balance tubes, sample tube brush, reference material, O-rings, frits, ferrules, and stoppers
- 236-33005-00 PrepSeal Kit, used to degas and transfer air-sensitive samples to an analysis port without contamination.
- 236-33004-00 Hanging Filler Rod Accessory Kit, contains two connectors with hooks attached, two filler rods, and installation instructions.
- 236-33010-00 16-mm Sample Tube Kit; includes two sample tubes with fitting assemblies, filler rods, Dewar covers, O-rings, ferrules, and installation instructions.
- 236-33013-00 1-in. Sample Tube Kit; includes two sample tubes with fitting assemblies, filler rods, Dewar covers, O-rings, ferrules, and installation instructions

Gemini VI and Accessories



Determines single- and multipoint BET and Langmuir surface areas, total pore volume, and micropore analysis by the t-method. Universal electrical input.

238/50000/00 Gemini VI 2385; with keypad
 238/50001/00 Gemini VI 2385; with Windows software
 238/50000/00CFR Gemini VI 2385; with CFR Part 11 Confirm software

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00 Model 021

DEWAR



300-25861-20 2.75 Liters



238/31805/00 Dewar Cover

REFERENCE MATERIAL



004-16818-00 Glass, SA, ~ 5.8 m²/g, 10 g
 004-16833-00 Carbon Black, 24.1 m²/g, 10 g

GAS REGULATOR



004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
 004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

GLASS BEADS



For displacing volume in the balance tube equivalent to the volume of sample in the sample tube when analyzing high volume, low surface area samples.

004-61065-00 3 mm, 90 grams

GAS INLET ASSEMBLY



230-02001-00 Copper, 1/8-in. with 1/8-in. Swagelok nut and ferrules (6-foot length)

RS-232 CABLE



003-60155-00 25- to 9-pin adaptor cable
003-20616-01 Shielded, 10 ft., Female/ Female

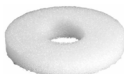
SAMPLE TUBE AND ACCESSORIES



236-61703-00 0.95 cm (3/8-in.) OD



Rubber Stopper
004-32004-00 For sample tube stem



Weighing Support
280-32800-00 For supporting sample tubes while weighing



Funnel
For filling sample tubes

240-25853-00 Nylon
004-25846-00 Aluminum



Sample Tube Rack
240-14855-00 For holding sample tubes



Brush
004-54611-00 For cleaning standard sample tube
004-54612-00 For cleaning bulb sample tube

PORT FRIT



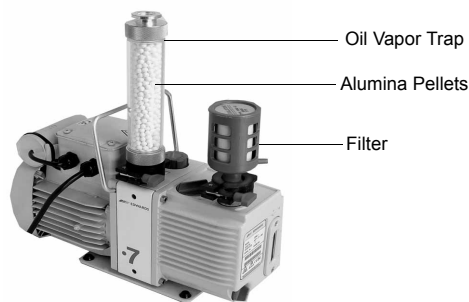
004-27046-00 40 micron, for sample tube port
004-27024-00 2 micron, for balance tube port

O-RING



Buna-N
004-25022-00 Size 012, for sealing 0.95 cm (3/8 in.) OD sample tube stem

VACUUM PUMP AND ACCESSORIES



062-00001-11 115 V; includes vacuum hose fittings, exhaust filter, oil, and manual
062-00001-23 230 V; includes vacuum hose fittings, exhaust filter, oil, and manual
004-27040-00 Filter; for vacuum pump exhaust
200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina
004-16830-00 Activated alumina pellets, 500 grams
200-25879-00 Funnel, for filling vacuum pump with oil
004-16003-01 Oil, 1 Liter

SOFTWARE AND MANUALS



238-33012-00 CFR Part 11 Confirm software and operator's manual
238-33021-00 Gemini VI software and operator's manual
238-42825-00 Operator's manual, Standard
238-42831-00 Operator's manual, Confirm

KIT

238-33605-00 Operating Supplies Kit; includes sample tube, O-ring, reference material, frit, sample tube stopper, brushes, glass beads, and Dewar cover

ASAP 2420 and Accessories; 2405 Accessories



Measures surface area and pore size by physisorption. Six analysis ports operate independently allowing a new analysis to begin as soon as another is finished. The ASAP 2420 also has a programmable and fully automated sample preparation module with twelve independently operated ports. Samples may be added or removed from degas ports without disturbing the treatment of other samples undergoing preparation or analysis.

242-00000-11	ASAP 2420, Nitrogen, 110V
242-00000-22	ASAP 2420, Nitrogen, 220V
242-00100-00	ASAP 2420, Nitrogen, Oil-less
242-00102-00	ASAP 2420, Micropore
242-00103-00	ASAP 2420, Krypton

REFERENCE MATERIAL



004-16821-00	Silica-alumina pellets, surface area 198 m ² /g, 10 grams
004-16816-00	Alumina, 0.49 m ² /g, 10 grams (Krypton analyses)
004-16843-00	Micropore, 13X, 10 g
004-16844-00	Micropore, Y-zeolite, 2.5 g

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00	Model 021
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DEWAR AND ACCESSORIES



201-25830-00	2.5 Liter, ASAP 2420
004-25871-00	1.9 Liter, ASAP 2400-2405
240-25829-00	1.0 Liter, for monolith sample tube



Dewar Cover

Used during analysis

202-31707-00	For 2.5 Liter Dewar
240-25814-00	For 1.9-Liter Dewar
200-25929-00	For 1-Liter Dewar



Dewar Depth Gauge

240-25901-00 For checking liquid nitrogen level in Dewar



Dewar Insulator

240-25895-00 Used when Dewar is in lowered position; remove before analysis

SAMPLE TUBE AND ACCESSORIES



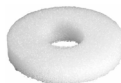
- 240-61003-00 10-cm³ bulb, 1/2-in. (1.27-cm) OD stem
- 240-61001-00 10-cm³ bulb, 1/4-in. (0.64-cm) OD stem
- 240-61002-00 10-cm³ bulb, 3/8-in. (0.96-cm) OD stem
- 240-61020-00 Monolith, 1/2-in. (1.27-cm) OD stem, with springs, 1-in. (2.5-cm) ID x 1-in. (2.5-cm) capacity



- Filler Rod**
- 240-61016-00 For 1/2-in. (1.27-cm) OD sample tube stem
 - 240-61014-00 For 1/4-in. (0.64-cm) OD sample tube stem
 - 240-61015-00 For 3/8-in. (0.96-cm) OD sample tube stem



- Rubber Stopper**
- 240-32000-00 For 1/2-in. (1.27-cm) sample tube stem
 - 004-32004-00 For 1/4-in. (0.64-cm) & 3/8-in. (0.96-cm) sample tube stems



- Weighing Support**
- 240-32805-00 For supporting sample tubes while weighing



- Funnel**
- 240-25853-00 For filling sample tubes



- Sample Tube Rack**
- 240-14855-00 For holding sample tubes



- Brush**
- 004-54609-00 For cleaning sample tubes

ISOTHERMAL JACKET



- ASAP 2420**
- 202-25901-00 For 1/4-in. (0.64-cm) OD sample tube stem
 - 202-25902-00 For 3/8-in. (0.96-cm) OD sample tube stem
 - 202-25903-00 For 1/2-in. (1.27-cm) OD sample tube stem

- ASAP 2400/2405**
- 240-32803-03 For 1/4-in. (0.64-cm) OD sample tube stem
 - 240-32803-02 For 3/8-in. (0.96-cm) OD sample tube stem
 - 240-25867-00 For 1/2-in. (1.27-cm) OD sample tube stem

SATURATION PRESSURE TUBE



- 240-25810-00 Includes isothermal jacket

HEATING MANTLE WITH THERMOCOUPLE



Clip

- ASAP 2420**
- 003-26044-00 450 °C, 24 VDC
 - 003-26045-00 450 °C, 24 VDC for Micropore Option
 - 230-25808-00 Heating Mantle Clip

- ASAP 2400/2405**
- 003-26042-00 450 °C, 24 VDC (CE units)
 - 200-26001-00 350 °C, Glass, 115 VAC, with K thermocouple

SEAL FRIT



Tool

- 260-25890-00 For 1/2-in sample tube
- 004-54130-00 Tool for seal frit; also used to remove and install openers in the sample ports

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
- 004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
- 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

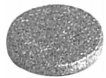
GAS INLET ASSEMBLY



Copper, 1/8-in. with 1/8-in. Swagelok nut and ferrules (6-foot length)

- 290-25846-00 For ASAP 2420
- 230-02001-00 For ASAP 2405

PORT FRIT



004-27041-00 For port fittings, 20-micron, 1/4-in. diameter x 1/16-in. thick

O-RING



Buna-N

- 004-25466-00 Size 010, for sealing 1/4-in. (0.64-cm) OD sample tube stem and for degas manifold fittings
- 004-25044-00 Size 013, for sealing 1/2-in. (1.27-cm) OD sample tube stem. Also used for analysis tray and degas manifold fittings
- 004-25022-00 Size 012, for sealing 3/8-in. (0.97-cm) OD sample tube
- 004-25066-00 Size 006, for plumbing connection

CONNECTOR NUT, KNURLED



300-25824-00 For sample tube to manifold connector

TRANSEAL



Allows transfer of the sample while still under vacuum from the preparation station to the analysis station. Fits only 1/2-in (1.27-cm) sample tubes.

- 201-33026-00 Starter kit; includes three Transeals, hardware, and instructions
- 300-25862-00 Transeal assembly

FERRULE



ASAP 2420

- 004-25103-00 Front, Teflon; for 1/4-in. (0.64-cm) OD tubing
- 004-25104-00 Rear, Nylon; for 1/4-in. (0.64-cm) OD tubing
- 004-25131-00 Front, Teflon; for 1/8-in. maintenance kit
- 004-25132-00 Rear, Nylon; for 1/8-in. maintenance kit
- 004-25913-00 Set, PEEK, for 1/8-in. maintenance kit

ASAP 2400/05

- 240-25803-00 For 1/4-in. (0.64-cm) OD sample tube stem
- 240-25802-00 For 3/8-in. (0.96-cm) OD sample tube stem
- 260-25843-00 For 1/2-in. (1.27-cm) OD sample tube stem

REDUCER



004-25549-00 1/8-in. (0.32-cm) compression fitting to 1/4-in. (0.64-cm) tube O-ring

FUSE



- 003-51130-00 Slow-Blow, 3 AG, 1 A
- 003-51123-00 Slow-Blow, 3 AG, 6.25 A
- 003-51137-00 3 AG, 2 A

GASKET



250-25608-00 Gasket, Kel-F, for manifold valve

VALVES AND ACCESSORIES



003-22617-00 Solenoid with 0.025 orifice
 003-22626-00 Solenoid with 0.060 orifice



Plunger
 250-25627-00 Buna-N seal

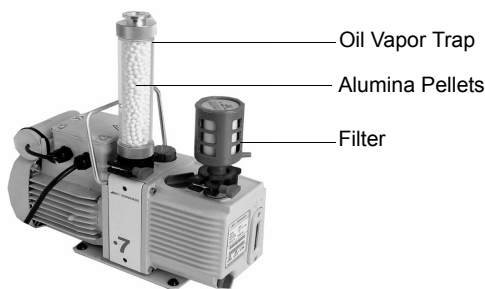


Spring
 201-22600-00 For Buna-N seal plunger
 004-25936-00 For Kalrez seal plunger



Wrench
 004-25157-00 For servicing degas and P₀ valves on the 2405

VACUUM PUMP AND ACCESSORIES



Includes vacuum hose, fittings, oil, and manual.

- 062-00001-11 115 V
- 062-00001-23 230 V
- 200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina (for vacuum pumps)
- 004-27040-00 Filter; for vacuum pump exhaust
- 004-16830-00 Activated alumina pellets, 500 grams
- 200-25879-00 Funnel, for filling vacuum pump with oil
- 004-16003-01 Oil, 1 Liter

Dry System



Includes vacuum hose, fittings, and manual.

- 062-00100-00 Oil-less vacuum pump

RUBBER MAT



240-25834-00 Black, for degas shelf

SOFTWARE AND MANUALS

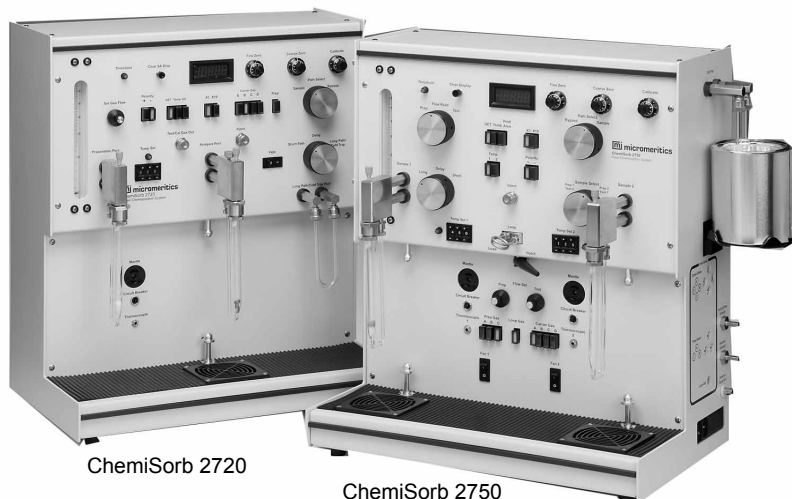


- 242-20800-00 Software package; includes current version of ASAP 2420 software and operator's manual
- 242-42801-00 Operator's manual, ASAP 2420
- 202-33024-00 DataMaster Program; includes software and operator's manual
- 240-42817-00 Operator's manual, ASAP 2405 nitrogen; S/N 500 and higher
- 240-42816-00 Operator's manual, ASAP 2405 nitrogen; S/N 499 and lower
- 240-42816-02 Operator's manual, krypton, ASAP 2405

KIT

- 242-33601-00 Operating Supplies Kit; includes solenoid valves, O-rings, ferrules, frit, brush, valve spring, funnel, sample tube, filler rod, stopper, gasket, plunger, and valve assembly.
- 242-33002-00 Micropore Kit; includes software, heating mantles, reference material, and instructions.
- 240-33600-00 Spare Parts Kit, ASAP 2405; recommended for customers in remote locations or those wishing to stock spare parts on site. Includes relays, fuses, O-rings, ferrules, and various assemblies.
- 240-33601-00 Extended Operation Supplies, ASAP 2405. Includes ferrules, O-rings, sample tubes, isothermal jackets, vacuum pump oil, data sheets, etc.
- 240-33602-00 Seal Frit Kit. Includes one insertion/extraction tool for the rings, 18 seal frits and 18 rings.

ChemiSorb 2720/2750 and Accessories



ChemiSorb 2720

ChemiSorb 2750

Allows chemisorption analysis by pulsed-dynamic method. Also for physical adsorption by dynamic-flow method.

275-00000-00 ChemiSorb 2750
Dual-function sample ports can be used as a sample port or degas port.

272-00000-00 ChemiSorb 2720
Dual ports, one for analysis and one for sample preparation.

028-00000-00 ChemiSoft TPx Option
Enables temperature-programmed studies. Includes a furnace, accessories, software, and operator's manual.

REFERENCE MATERIAL



- 004-16825-00 Pt-alumina Pellets, dispersion 30.5%, 5 grams
- 004-16833-00 Carbon black, approx. 10 grams
- 004-16836-00 Silver oxide, for TPx applications, approx. 1 gram

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

- 021-00000-00 Model 021

FERRULE



- 004-25103-00 Front, Teflon; for 1/4-in. (0.64-cm) OD tubing
- 004-25104-00 Rear, Nylon; for 1/4-in. (0.64-cm) OD tubing

DEWAR AND ACCESSORIES



- 004-61617-00 350 mL



- Dewar Cover**
272-31801-01 Cover, cold trap

CALIBRATION SYRINGE



- 004-61602-00 1-cm³
- 004-61606-00 0.1-cm³ (Kr)
- 004-61604-00 10-cm³

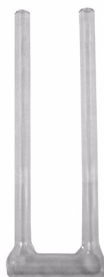
Septum

- 004-32602-00 For injection port

Replacement injection needle

- 004-61604-01 For 10-cm³ syringe, pkg/3
- 004-61602-01 For 0.1- and 1-cm³ syringes, pkg/3

SAMPLE TUBE AND ACCESSORIES



- 230-61001-00 Micro U-tube, 0.1-cm³ capacity
- 230-61002-00 Standard, cylindrical bottom, 1-cm³ capacity
- 230-61006-00 Standard, cylindrical bottom, 1-cm³ capacity, package of
- 230-61007-00 Standard, cylindrical bottom, 1-cm³ capacity, package of 12
- 230-61002-01 Quartz, cylindrical bottom, 1-cm³ capacity
- 230-61003-00 Cylindrical bottom with capillary stem, 1-cm³ capacity
- 230-61004-00 Large cylindrical bottom, 4.7-cm³ capacity
- 270-61005-00 Up to 2-cm diameter x 3-cm long solid sample capacity
- 270-61701-00 Quartz, for TPR analyses
- 270-61702-00 Quartz, for TPD analyses



Rubber Stopper

- 004-32004-00 For sample tube stems
- 004-32604-08 Plastic cap, for sample tube exhaust



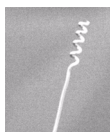
Funnel

- 230-25813-00 For easy sample tube filling



Brush

- 004-54609-00 wide bristled
- 930-54601-00 Narrow bristled



Extraction Tool

- 004-54805-00 For extracting quartz wool from sample tubes

INJECTION LOOP



Includes fittings

- 270-62800-00 50 µL
- 270-62800-01 100 µL
- 270-62800-02 200 µL
- 270-62800-05 500 µL
- 270-62800-10 1000 µL

HEATING MANTLE WITH THERMOCOUPLE



Clip

- 231-26001-00 Glass fiber, 24 V (400 °C)
- 270-26600-00 Quartz fiber, 115 V (500 °C); Pulse ChemiSorbs 2700/05
- 230-26001-00 Glass fiber, 115 V, for monolith sample tube (350 °C); Pulse ChemiSorbs 2700/05
- 230-25808-00 Heating Mantle Clip

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
- 004-62230-59 CGA 590 fitting, 30 psig (ultrapure air)
- 004-62230-35 CGA 350 fitting (CO, H₂), 30 psig
- 004-62230-54 CGA 540 fitting (O₂), 30 psig
- 004-62230-32 CGA 320 (CO₂), 30 psig

GAS INLET ASSEMBLY



- 290-25846-00 Copper
- 201-25818-00 Stainless steel

GAS SAMPLING ASSEMBLY



- 290-25842-00 For calibration injections

O-RING



Buna-N

004-25466-00 Size 010
 004-25034-00 Size 008
 004-25044-00 Size 013

RUBBER MAT



272-25830-00 For ChemiSorb 2720
 275-25810-00 For ChemiSorb 2750

DATA SHEET



230-42707-00 Multipoint surface area,
 pad/100

SOFTWARE AND MANUALS



275-42805-00 Operator's manual,
 ChemiSorb 2750
 272-42801-00 Operator's manual,
 ChemiSorb 2720
 028-42801-00 Operator's manual,
 ChemiSoft option

KIT

275-33601-00 Operating Supplies; includes reference
 material, fuses, frit, quartz wool, O-rings,
 ferrules, septum, precision syringes with
 needles, sample tubes, fittings, 350-mL
 Dewar and covers, brushes, and heating
 mantles.

AutoChem 2920 and Accessories; AutoChem 2910 Accessories



For temperature-programmed desorption/reduction studies on catalysts and similar materials. Universal electrical input.

292-00000-00 AutoChem 2920
292-00002-00 AutoChem 2920 with Vapor Generator

MASS SPECTROMETER



Allows quantitative gas analysis

291-33008-01 Pfeiffer Vacuum Model 200
AMU

VAPOR GENERATOR



291-33003-00 For mixing an inert carrier
gas with vapor from a
precisely heated liquid such
as pyridine

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L
Dewar, mobile stand, and pump with 100-cm
discharge line. Universal voltage input.

021-00000-00 Model 021

FLOWMETER



290-29800-00 10-cm³ Bubble Burette

REFERENCE MATERIAL



004-16836-00 Silver oxide

FLASK



291-61704-00 50 mL, for vapor generator
004-25129-00 O-ring, Kalrez, for flask

CALIBRATION SYRINGE

004-61602-00 1-cm³
 004-61606-00 0.1-cm³
 004-61604-00 10-cm³

Septum

004-32602-00 For injection port

Replacement injection needle

004-61604-01 For 10-cm³ syringe, pkg/3
 004-61602-01 For 0.1- and 1-cm³ syringes, pkg/3

INJECTION LOOP

290-62600-00 0.5-cm³ nominal
 290-62601-00 1.0-cm³ nominal
 290-62602-00 5.0-cm³ nominal

THERMOCOUPLE

291-53904-00 Shaped to enter sample tubes
 291-61703-00 Sheath, ceramic, for sample thermocouple

GLOVES

004-32187-00 Cotton flannel, for handling hot components

DEWAR AND ACCESSORIES

004-61064-00 600 mL

**Dewar Cover**

230-31801-00 For cold trap

O-RING

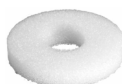
Kalrez, for sealing sample tubes
 004-25678-00 Size -009
 004-25465-00 Size -010
 004-25474-00 Size -013
 004-25129-00 Size -208

SAMPLE TUBE AND ACCESSORIES

291-61702-00 Quartz; for TPD, TPR, and BET analyses

**Stopper/Cap**

004-32004-00 Rubber stopper, for sample tube inlet
 004-32604-08 Plastic cap, for sample tube exhaust

**Weighing Support**

230-32803-00 Foam, for supporting sample tubes while weighing

**Funnel**

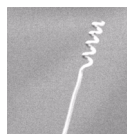
240-25853-00 For filling sample tubes

**Brush**

004-54609-00 Wide bristled
 930-54601-00 Narrow bristled

**Quartz Wool**

004-32164-01 4- x 6-in. bag, for constraining samples in sample tubes

**Extraction Tool**

004-54805-00 For extracting quartz wool from sample tubes

FURNACE ASSEMBLY

291-53801-00 Replacement furnace

GAS INLET ASSEMBLY

6-foot length
 290-25846-00 Copper
 201-25818-00 Stainless steel

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
- 004-62230-59 CGA 590 fitting, 30 psig (ultrapure air)
- 004-62230-35 CGA 350 fitting, 30 psig (CO, H₂)
- 004-62230-54 CGA 540 fitting, 30 psig (O₂)
- 004-62230-32 CGA 320 fitting, 30 psig (CO₂)
- 004-33601-00 Expansion Kit; three outlets, includes fittings and instructions.
- 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Do not use with noxious gases.

GAS SAMPLING ASSEMBLY



- 290-25842-00 For calibration injections

REDUCER



- 004-25549-00 1/8-in. (0.32-cm) compression fitting to 1/4-in (0.64-cm) stem

FERRULE



- 004-25913-00 PEEK; 1/8 in. (0.32 cm³), front and rear set
- 004-25912-00 PEEK, 1/16 in. (0.16 cm³), front and rear set

PORT FRIT



- Protects analyzer valves from sample dust and quartz fibers
- 004-27041-00 20 micron, stainless steel, 1/4 in. diameter x 1/16 in. thick

THERMAL CONDUCTIVITY BLOCK



- 291-29711-00 Nickel-iron, gold-plated filaments
- 291-29712-00 Tungsten, gold-plated filaments

DELAY LINE ASSEMBLY



- 290-25845-00 For BET analysis

FLUID



- 004-16247-00 For gas flowmeter and leak checking

HEATING MANTLE



- 003-26018-00 For vapor generator

SOFTWARE AND MANUALS



- 292-42803-00 Operator's manual, AutoChem 2920
- 292-33001-00 Operating software and operator's manual, AutoChem 2920
- 291-42801-00 Operator's manual, AutoChem 2910

KIT

- 291-33600-00 Operating Supplies; includes reference material, O-rings, ferrules, dust mask, gloves, Dewar flask, thermocouple, sample tubes, frits, septum, and cold trap cover
- Detector Update Kit; includes TCD, software, detector, and hardware
- 291-33601-00 Standard
- 291-33602-00 Tungsten

TriStar 3000 and Accessories



SmartPrep 065

TriStar 3000

Contains three analysis stations allowing you to analyze up to three samples simultaneously.

Shown here with the SmartPrep 065 Degasser (refer to Degassers for ordering information on the SmartPrep)

300-00000-00 Universal electrical input

LN₂ TRANSFER SYSTEM



For easy filling of sample Dewars. Includes 47-L Dewar, mobile stand, and pump with 100-cm discharge line. Universal voltage input.

021-00000-00 Model 021

REFERENCE MATERIAL



004-16821-00 Silica-alumina pellets, surface area 198 m²/g, 10 g

004-16833-00 Carbon Black, 24.1 m²/g, 10 g

TRANSEAL



Allows transferal of the sample while still under vacuum from the preparation station to the analysis station. Fits only 1/2-in (1.27-cm) sample tubes.

201-33026-00 Starter kit; includes three Transeals, hardware, and instructions

300-25862-00 Transeal assembly

DEWAR AND ACCESSORIES



300-25861-20 2.75 Liters



Dewar Cover

300-31802-02 For 1/4-in. & 3/8-in. OD sample tubes

300-31802-03 For 1/2-in. OD sample tube



Dewar Depth Gauge

240-25901-00 For checking liquid nitrogen level

O-RING



Buna-N

004-25466-00 Size 010, for sealing 1/4-in. (0.64-cm) OD sample tube stem and for degas manifold fittings

004-25022-00 Size 012, for sealing 3/8-in. (0.96-cm) OD sample tube stem

004-25469-00 Size 014, for sealing 1/2-in. (1.27-cm) OD sample tube stem

MANIFOLD VALVES



- 003-22617-00 Solenoid with 0.025 orifice, for valves 1 through 10
- 003-22626-00 Solenoid with 0.060 orifice, for valves 11 through 13

GAS REGULATOR



- 004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)
- 004-62230-32 CGA 320 (CO₂), 30 psig
- 004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.
- 004-33602-00 Pressure Relief Kit; prevents excessive gas pressure in the event of regulator failure. Not to be used with noxious gases.

GAS INLET ASSEMBLY



- 230-02001-00 Copper, 1/8-in. with 1/8-in. Swagelok nut and ferrules (6-foot length)

REDUCER



- 004-25549-00 1/8 in. (0.32 cm) x 1/4 (0.64 cm) in. tube, for gas lines.

ISOTHERMAL JACKET



- 300-25901-00 For 1/4-in. (0.64-cm) OD sample tube stem
- 300-25902-00 For 3/8-in. (0.96-cm) OD sample tube stem
- 300-25903-00 For 1/2-in. (1.27-cm) OD sample tube stem

SAMPLE TUBE AND ACCESORIES



- 300-61001-00 1/4-in. (0.64-cm) OD stem
- 300-61002-00 3/8-in. (0.96-cm) OD stem
- 300-61003-00 1/2-in. (1.27-cm) OD stem

Filler Rods

- Includes filler rod and retaining ring
- 300-25904-00 For 1/4-in. sample tube
- 300-25905-00 For 3/8-in. sample tube
- 300-25906-00 For 1/2-in. sample tube

Replacement Retaining Ring

- 300-25904-02 For 1/4-in. filler rod
- 300-25905-02 For 3/8-in. filler rod
- 300-25905-02 For 1/2-in. filler rod

Assemblies

- Includes sample tubes, isothermal jackets, filler rods, ferrules, O-rings, caps, and Dewar cover
- 300-33601-00 1/4-in. sample tube
- 300-33602-00 3/8-in. sample tube
- 300-33603-00 1/2-in. sample tube

Rubber Stopper

- 004-32004-00 For sample tubes



Weighing Support

- 300-32800-00 For supporting sample tubes while weighing



Funnel

- 240-25853-00 For filling sample tubes



Brush

- 004-54609-00 For cleaning 1/2-in sample tubes
- 004-54104-00 For cleaning 3/8-in. sample tubes

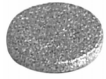


Sample Tube Rack

- 240-14855-00 For holding sample tubes

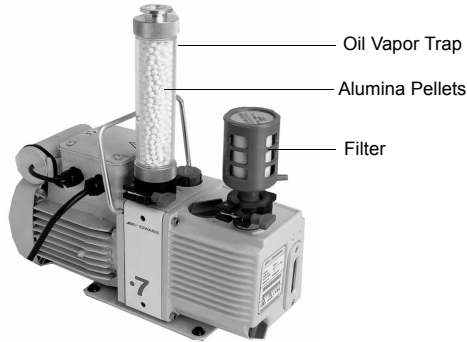


PORT FRIT



004-25549-00 40 micron, for sample tube port

VACUUM PUMP AND ACCESSORIES



Includes vacuum hose, fittings, oil, and manual.

- 062-00001-11 115 V
- 062-00001-23 230 V
- 200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina (for vacuum pumps)
- 004-27040-00 Filter; for vacuum pump exhaust
- 004-16830-00 Activated alumina pellets, 500 grams
- 200-25879-00 Funnel, for filling vacuum pump with oil
- 004-16003-01 Oil, 1 Liter

CABLE



003-20665-00 9-pin, male-to-female, 6 ft.

FERRULE



- 300-25825-00 For 1/4-in. (0.64-cm) OD sample tube
- 300-25826-00 For 3/8-in. (0.96-cm) OD sample tube
- 260-25843-00 For 1/2-in. (1.27-cm) OD sample tube

SOFTWARE AND MANUALS



- 300-33032-00 Current version software and operator's manual (for S/N 1000 and above)
- 300-33001-00 Current version software and operator's manual (for S/N below 1000)
- 300-33011-00 CFR Part 11 Confirm software and operator's manual
- 300-42832-00 Operator's manual (V6.00 and higher), TriStar 3000

KIT

- 300-33600-00 Operating Supplies Kit; includes reference material, valves, O-rings, vacuum pump oil, activated alumina, exhaust filter, frit, sample tube and filler rod, sample tube stopper, retainer, and Dewar cover.
- 003-20690-00 USB Expander Kit; for connecting multiple instruments to a single computer

SediGraph 5120 and Accessories; SediGraph 5100 Accessories



Automatically determines particle size distribution from 300 to 0.1 μm diameter by sedimentation. Universal electrical input.

512-00000-00 Universal electrical input

MASTERTECH 052



052-00051-00

Automatic sample preparation/feeding device with built-in mechanical stirrer and ultrasonic probe. Redisperses samples to their original level of dispersion and transfers the samples to the analyzer for analysis.

ULTRASONIC PROBE



Provides high intensity ultrasonic energy to aid in dispersion of powders in liquids (250 W).

500-58902-00 115 V, 50/60 Hz
500-58903-00 230 V, 50 Hz

REFERENCE MATERIAL



- 004-16814-00 Glass, Mass Median Diameter $\approx 1.5 \mu\text{m}$, 15 grams
- 004-16837-00 Garnet Powder, Mass Median Diameter $\approx 3.77 \mu\text{m}$, 20 grams (traceable to N.I.S.T.)
- 004-16811-00 Garnet Powder, Mass Median Diameter $\approx 11 \mu\text{m}$, 15 grams
- 004-16835-00 Calcium Carbonate, Mass Median Diameter $\approx 0.77 \mu\text{m}$, 28 grams (traceable to N.I.S.T.)

Sound Abating Enclosure

500-58904-00 With positioning jack; for ultrasonic probe



LAMP



003-39046-00 For analyzer front panel indicators

ULTRASONIC BATH

Provides low-intensity ultrasound to aid in dispersing samples. *Unavailable in countries requiring CE certification.*

003-58601-00 115 V, 60 Hz
003-58602-00 230 V, 50 Hz

PERISTALTIC PUMP

Provides mixing and circulation for sample being passed through the cell

512-62600-00 For SediGraph 5120 (pictured)
510-62600-00 For SediGraph 5100 and MasterTech

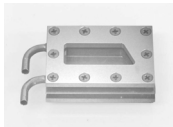
MIXING CHAMBER ASSEMBLY

511-25870-00 Standard, 1/4-in. OD; for SediGraph 5120 and SediGraph 5100 S/N 1100 and higher, or high settling velocity cell (large bore)
511-25870-02 Stainless steel, for high pH resistance 1/4-in. OD, for S/N 1100 and higher or high settling velocity cell (large bore)

510-25846-00 Cover, for mixing chamber

**Stirrer Bar**

500-25610-00 Magnetic, Teflon coated

SAMPLE CELL

510-25800-00 Small bore
511-25892-00 Large bore
511-25866-00 High settling velocity cell

Cell Window

510-32801-01 Polystyrene, set of two (standard)
510-32804-01 Homalite, set of two

DISPERSING AID

004-16838-00 Daxad 23, 30 g

PLASTIC BOTTLE

For dispersion or rinse liquids

004-61050-00 10 Liters
004-61050-01 Modified cap with hole
510-25869-00 Tube weight, anchors tubing in reservoir bottle

FILTER**SediGraph 5120**

512-27600-01 Air, 10 ppi (pores per inch)
512-27600-02 Air, 25 ppi
512-27600-03 Air, 45 ppi

SediGraph 5100

510-27700-00 Air, cabinet
004-27015-00 Power supply, rear panel; package of 10

LIGHT EMITTING DIODE

003-48119-00 (LED) Red, for front panel; for SediGraph 5100

FUSE

For SediGraph 5100 non-CE units

003-51113-00 Slow-Blow, 3 AG, 1.5 A; for pumps
003-51123-00 Slow-Blow, 3 AG, 6.25 A (100-120 VAC); for power supply and X-ray filament voltage
003-51132-00 Slow-Blow, 3 AG, 3 A (220-240 VAC); for power supply

TUBING**SediGraph 5120****Tubing Sets for System (small bore)**

512-32812-00	Tygon®
512-32812-01	PharMed™
512-32812-02	Viton®
512-32812-03	Silicone

Tubing Sets for Pumps (small bore)

512-32813-00	Tygon®
512-32813-01	PharMed™
512-32813-02	Viton®
512-32813-03	Silicone

Tubing Sets for System, 1/4-in. (large bore)

512-32820-01	Tygon®
512-32820-02	PharMed™
512-32820-03	Viton®
512-32820-04	Silicone

Tubing Sets for Pumps, 1/4-in. (large bore)

512-32821-01	Tygon®
512-32821-02	PharMed™
512-32821-03	Viton®
512-32821-04	Silicone

SediGraph 5100**Tubing Sets, pre-cut (universal)**

511-32902-00	Silicone, for aqueous solutions
511-32901-00	Tygon®
511-32909-00	Viton®
511-32913-00	PharMed™

Tube D, for mixing chamber pump

510-32905-04	Silicone
510-32903-04	Tygon®
510-32907-03	Viton®

Tube G, for cell pump (small bore)

510-32906-03	Silicone
510-32904-03	Tygon®
510-32908-03	Viton®

Tube J, for cell pump (small bore)

510-32906-05	Silicone, 3/16-in.
510-32904-05	Tygon®, 3/16-in.
510-32908-05	Viton®, 3/16-in.

Tube J, for cell pump (large bore)

510-32903-13	Tygon®, 1/4-in.
510-32905-13	Silicone, 1/4-in.
510-32907-13	Viton®, 1/4-in.

SEDIPERSE

004-16827-04 Rinsing Solution, 4 L

A-11, Viscosity of 1 to 1.5 centipoise (cp)

004-16801-02	1 L
004-16801-04	4 L

A-12, Viscosity of 3.4 to 4.9 cp

004-16802-02	1 L
004-16802-04	4 L

A-13, Viscosity of 7 to 10.4 cp

004-16803-02	1 L
004-16803-04	4 L

A-14, Viscosity of 12.8 to 20.9 cp

004-16804-02	1 L
004-16804-04	4 L

P-11, Viscosity of 1.2 to 1.7 cp

004-16805-02	1 L
004-16805-04	4 L

P-12, Viscosity of 3.6 to 5.4 cp

004-16806-02	1 L
004-16806-04	4 L

S-12, Viscosity of 1.5 to 2.8 cp

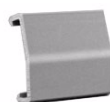
004-16809-02	1 L
004-16809-04	4 L

W-11, Viscosity of 0.8 to 1.1 cp

004-16807-02	1 L
004-16807-04	4 L

W-12, Viscosity of 3 to 4.5 cp

004-16808-02	1 L
004-16808-04	4 L

VALVE COVER

510-25857-00 Grey, for SediGraph 5100

MASTERTECH ACCESSORIES

051-14811-00	Tray cover, to prevent beaker contents from evaporating
051-61702-00	Beaker, tall form, polyethylene
051-14814-00	Tray assembly, for beakers

Ultrasonic Probe Tip

051-58605-02	1/8-in. for use with MasterTech 051 (S/N 151 and higher) and MasterTech 052
052-58605-02	1/4-in., for use with MasterTech 052 only

Tubing

051-32901-00	Tygon
051-32903-00	PharMed

SOFTWARE AND MANUALS



- 512-33001-00 Operating software and operator's manual, SediGraph 5120
- 512-42801-00 Operator's manual, SediGraph 5120
- 511-42801-00 Operator's manual, SediGraph 5100 (S/N 2001 and higher)

KIT

- 512-33602-00 Operating Supplies Kit; includes reference material, lamp, magnetic stirrer bar, cell windows, air filter, and replacement tubing

Saturn DigiSizer 5200 and Accessories



Determines particle size distribution from 1000 to 0.1 μm by laser diffraction. Universal electrical input.

- 520-00000-00 With standard liquid sample handler
- 520-00002-00 With low-volume liquid sample handler
- 520-00012-00 Low-volume liquid sample handler

MASTERTECH 052



052-00052-00
Automatic sample preparation/feeding device with built-in mechanical stirrer and ultrasonic probe. Redisperses samples to their original level of dispersion and transfers the samples to the analyzer for analysis.

REFERENCE MATERIAL



004-16841-00 W-13320, Volume Median Spherical $\cong 4.85 \mu\text{m}$ (traceable to N.I.S.T.)

ULTRASONIC PROBE



Provides high intensity ultrasonic energy to aid in dispersion of powders in liquids (250 W).

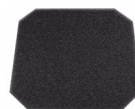
- 500-58902-00 115 V, 50/60 Hz
- 500-58903-00 230 V, 50 Hz

Sound Abating Enclosure

500-58904-00 With positioning jack; for ultrasonic probe



AIR FILTER



004-27047-01 For rear panel

SAMPLE CELL

520-34900-00 Sample cell

Cleaning supplies

004-32152-00 Swabs, foam; package/50
 004-32065-01 Lens paper, package/50
 004-38600-00 Lens cleaning solution

**O-Ring**

004-25575-00 For sealing sample cell

GASKET

520-32802-00 Gasket (spacer), light blocking; for tubing orifices on liquid sample handler

FUSE (SLOW BLOW)**Analysis Unit**

003-51134-00 3 AG, 5 A (100-120)
 003-51198-00 5x20 mm, 3.15 A (220-240)

Sample Handler and Ultrasonic Probe

003-51132-00 3 AG, 3 A (100-120)
 003-51207-00 5x20 mm, 1.6 A (220-240)

TUBING

052-32805-03 For analysis and rinse inlets
 520-32804-02 For drain outlet
 520-32803-06 For overflow outlet
 520-32803-05 For upper sample cell port
 520-32803-04 For lower sample cell port
 520-25887-00 Weight, for analysis and rinse tubing
 051-32901-00 Tygon, for MasterTech
 051-32903-00 PharMed, for MasterTech

MASTERTECH ACCESSORIES

051-14811-00 Tray cover, to prevent beaker contents from evaporating
 051-61702-00 Beaker, tall form, polyethylene
 051-14814-00 Tray assembly, for beakers

Ultrasonic Probe Tip

051-58605-02 1/8 in., for use with MasterTech 052 and MasterTech 051 (S/N 151 and higher)
 052-58605-02 1/4 in., for use with MasterTech 052 only

Fuses

003-51130-01 5x20 mm, 1.0 A (220-240)
 003-51131-00 3 AG, 2 A (100-120)

Tubing

051-32901-00 Tygon
 051-32903-00 PharMed

SOFTWARE AND MANUALS

520-33002-00 Current version of software and operator's manual
 520-33011-00 CFR Part 11 Confirm software and operator's manual
 520-42801-00 Operator's manual

KIT

520-33600-00 Operating Supplies Kit; includes fuses, O-ring, lens paper and cleaner, and tubing

Elzone II 5390 and Accessories; 5380/5382 Accessories



Automatically counts and determines particle size distribution from 240 to 0.4 μm using the electrical sensing zone method. Universal electrical input.

539-00000-00	Elzone II 5390
539-00001-00	Elzone II with Volumetric Pump
539-00002-00	Elzone II 5390 with Digital Camera
539-00003-00	Elzone II with Camera and Pump

REFERENCE MATERIAL

Latex Standards used for calibration



004-16840-00	1 μm
004-16840-01	2 μm
004-16840-02	3 μm
004-16840-03	5 μm
004-16840-04	10 μm
004-16840-05	20 μm
004-16840-10	30 μm
004-16840-06	40 μm
004-16840-07	60 μm
004-16840-08	100 μm
004-16840-09	160 μm

BEAKER



538-61703-00	Small, 150 mL
538-61703-01	Medium, 240 mL
538-61703-02	Large, 380 mL

SAMPLE VIAL



538-61706-00	Polystyrene, 25-mL; includes snap-on cap
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STIRRING DEVICES



Maintain sample dispersion during analysis

Stirrer

538-61704-01	Medium
538-61704-02	Large

Hydropulser

539-34020-00	Gentle agitation by pulse
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PLASTIC BOTTLE



004-61039-01	2 Liters, for supply liquid
004-32117-00	2 Liters, for waste liquid
539-60804-01	Cable sensor for waste liquid

SQUEEZE BOTTLE



004-32209-00	500 mL, for cleaning glassware
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CAMERA



Elzone II 5390
539-33602-00 Camera w/ software and light

Elzone 5380/5382
538-38700-00 Microscope assembly
538-34890-00 Side light assembly
003-60171-00 Replacement bulb

FUSE, SLOW-BLOW



003-51130-00 1.0 A, 3 AG
003-51193-00 0.5 A 5x20 mm (T1 delay)

TUBING



539-32804-00 Flexible, for waste bottle
539-32805-00 Flexible, for supply bottle
539-32803-04 Flexible, for hydropulser
539-32802-08 Rigid, for hydropulser
539-32804-00 Flexible, for waste bottle

ELECTRODE



Elzone II 5390
539-60810-00 External electrode

Elzone 5380/5382
538-34806-00 External electrode, Pt-Rh

O-RING



Elzone II 5390
004-25474-00 -013, for sample port
004-32614-00 -009, for stirrer

Elzone 5380/5382
004-25006-00 -006, for exit tube
004-25948-00 For stopper/float

ORIFICE TUBE



Elzone II 5390
539-61702-01 19 μm
539-61702-02 30 μm
539-61703-03 48 μm
539-61702-04 76 μm
539-61702-05 95 μm
539-61702-06 150 μm
539-61702-07 190 μm
539-61702-08 300 μm
539-61702-09 380 μm

Elzone 5380/5382
538-61700-00 12 μm
538-61700-01 19 μm
538-61700-03 30 μm
538-61700-05 48 μm
538-61700-07 76 μm
538-61700-08 95 μm
538-61700-10 150 μm
538-61700-11 190 μm
538-61700-13 300 μm
538-61700-14 380 μm
538-61700-15 480 μm
538-61700-18 950 μm
538-61700-21 1900 μm
539-61705-00 Elzone II 5390 adapter clip; allows 5380/5382 tubes up to 380 μm to be used on 5390

ORIFICE TUBE KIT

Includes reference material



539-33610-00 19 μm
539-33611-00 30 μm
539-33612-00 48 μm
539-33613-00 76 μm
539-33614-00 95 μm
539-33615-00 150 μm
539-33616-00 190 μm
539-33617-00 300 μm
539-33618-00 380 μm

BRUSH



004-54615-00 For cleaning orifice tube



004-54616-00 Bent, for cleaning orifice jewel

CLIP



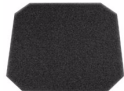
539-25856-00 For hydropulser tube

GLASS SINKER



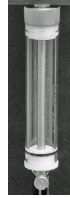
Elzone 5380/5382
537-61701-00 Keeps electrolyte feed tube secure

AIR FILTER



004-27015-00 Rear panel, package of 10

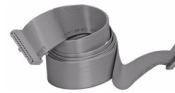
VOLUMETRIC PUMP



539-33604-00 Enables you to measure particle concentration

ELZONE 5380/5382 ACCESSORIES

Ribbon cable



538-60806-00 Upper
538-60807-00 Lower
003-63704-00 SCSI-2

H-Piece Assembly

538-25802-00 Complete assembly
538-61708-00 Exit tube, plain

SOFTWARE AND MANUALS



Elzone II 5390

539-33001-00 Current version of operating software and operator's manual
539-33011-00 Current version of CFR Part 11 Confirm software and operator's manual
539-42801-00 Operator's manual, Standard
539-42811-00 Operator's manual, Confirm

Elzone 5380/5382

538-33005-00 Current version of operating software and operator's manual, Model 5382
538-33006-00 Current version of operating software and operator's manual, Model 5380
538-42802-00 Operator's manual, Model 5382
538-42806-00 Operator's manual, Model 5380

AutoPore IV and Accessories; AutoPore III Accessories



Performs automatic pore structure studies from 360 to 0.03 μm pore opening diameter. Powerful Windows-based software. Requires a gas regulator. Universal electrical input.

AutoPore IV 9520 (60,000 psia)

952-00000-00 Has four low-pressure ports and two high-pressure chambers

952-00001-00 Adds additional unit, no software included

AutoPore IV 9510 (60,000 psia)

951-00000-00 Has two low-pressure ports and one high-pressure chamber

951-00001-00 Adds additional unit, no software included

AutoPore IV 9505 (33,000 psia)

950-50000-00 Has four low-pressure ports and two high-pressure chambers

950-50001-00 Adds additional unit, no software included

AutoPore IV 9505 (33,000 psia)

950-00000-00 Has two low-pressure ports and one high-pressure chamber

950-00001-00 Adds additional unit, no software included

REFERENCE MATERIAL



004-16822-00 Average pore diameter \cong 0.0075 μm , Pore Volume \cong 0.5 cm^3/g ; 15 grams

REFERENCE VOLUME



940-34801-00 Mercury Volume Reference kit; includes capsules and membranes for 3- and 5- cm^3 penetrometers and instructions

940-34800-00 Capsule assembly, for 3- cm^3 penetrometers

940-34800-01 Capsule assembly, for 5- cm^3 penetrometers

940-25600-00 Membrane, 8 microns

940-25600-01 Membrane, 3 microns

940-14800-00 Retaining clip

FUNNEL



950-25842-00 For filling mercury reservoir

MERCURY



004-16004-01 5 lbs

GAS REGULATOR



004-62200-58 CGA 580 fitting, 100 psig (Ar, He, Kr, N_2)

004-33601-00 Expansion Kit; two outlets, includes fittings and instructions.

PENETROMETER ASSEMBLY



Includes closure and seal

Solid Samples

950-61701-00	Sample Volume = 15 cm ³ , Intrusion Volume = 0.37 cm ³
950-61703-00	Sample Volume = 15 cm ³ , Intrusion Volume = 1.06 cm ³
950-61705-00	Sample Volume = 15 cm ³ , Intrusion Volume = 1.72 cm ³
950-61707-00	Sample Volume = 5 cm ³ , Intrusion Volume = 0.366 cm ³
950-61709-00	Sample Volume = 5 cm ³ , Intrusion Volume = 1.05 cm ³
950-61711-00	Sample Volume = 5 cm ³ , Intrusion Volume = 1.72 cm ³
950-61713-00	Sample Volume = 3 cm ³ , Intrusion Volume = 0.387 cm ³
950-61715-00	Sample Volume = 3 cm ³ , Intrusion Volume = 1.12 cm ³
950-61724-00	Sample Volume = 15 cm ³ , Intrusion Volume = 3.01 cm ³
950-61725-00	Sample Volume = 15 cm ³ , Intrusion Volume = 3.86 cm ³

Powder Samples

950-61702-00	Sample Volume = 15 cm ³ , Intrusion Volume = 0.37 cm ³
950-61704-00	Sample Volume = 15 cm ³ , Intrusion Volume = 1.06 cm ³
950-61706-00	Sample Volume = 15 cm ³ , Intrusion Volume = 1.72 cm ³
950-61708-00	Sample Volume = 5 cm ³ , Intrusion Volume = 0.366 cm ³
950-61710-00	Sample Volume = 5 cm ³ , Intrusion Volume = 1.06 cm ³
950-61712-00	Sample Volume = 5 cm ³ , Intrusion Volume = 1.72 cm ³
950-61714-00	Sample Volume = 3 cm ³ , Intrusion Volume = 0.387 cm ³
950-61716-00	Sample Volume = 3 cm ³ , Intrusion Volume = 1.12 cm ³

Glassware

When ordering glassware only, change the prefix of the assembly to **920** and the suffix to **01**. Example: If you wish to order glassware for 950-61701-00, you would order **920-61701-01**.

PENETROMETER ASSEMBLY (continued)

Penetrometer Closure

Reduces amount of blank correction required



950-33605-00	Closure Kit, for 3- and 5-cm ³ penetrometers; includes six closure sets, tools, and instructions
950-33606-00	Closure Kit, for 15-cm ³ penetrometers; includes six closure sets, tools, and instructions
950-25831-00	Closure Set, for 3- and 5-cm ³ penetrometers; includes nut and seal
950-25831-00	Closure Set, for 15-cm ³ penetrometers; includes nut and seal
950-09803-00	Wrench, penetrometer closure
950-09802-00	Holder, penetrometer

SYRINGE



942-25823-00	50 cm ³ , used to withdraw high pressure fluid when cleaning chambers
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BRUSH



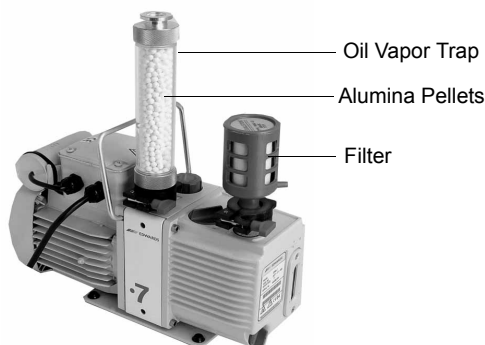
For cleaning penetrometers	
930-54601-00	0.4-cm ³ stems
930-54602-00	1.1-cm ³ stems
930-54603-00	1.8-cm ³ stems

FERRULE



004-25105-00	Front, Teflon, for 3/8-in. (0.96-cm) OD tubing
004-25103-00	Front, Teflon, for 1/4-in. (0.64-cm) OD tubing
004-25131-00	Front, Teflon, for 1/8-in. (0.32-cm) OD tubing
004-25104-00	Rear Ferrule, nylon, for 1/4-in. (0.64-cm) OD tubing
004-25106-00	Rear, nylon, for 3/8-in. (0.96-cm) OD tubing
004-25132-00	Rear, nylon, for 1/8-in. (0.32-cm) OD tubing

VACUUM PUMP AND ACCESSORIES



Includes vacuum hose, fittings, oil, and manual.

- 062-00000-11 115 V
- 062-00000-23 230 V
- 004-27040-00 Filter; for vacuum pump exhaust
- 200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina (for vacuum pumps)
- 004-16830-00 Activated alumina pellets, 500 grams
- 200-25879-00 Funnel, for filling vacuum pump with oil
- 004-16003-01 Oil, 1 Liter
- 920-16001-00 High Pressure Fluid, 1 Liter

VACUUM GREASE



For sealing and lubricating vacuum and pressure systems

- 004-16007-00 Apiezon-H vacuum grease, 25 grams
- 008-16045-00 Silicone grease, high vacuum, 150 grams

VACUUM GAUGE TUBE



- 920-62606-00 Teledyne Hastings - TYPE DV-3CR

SOFTWARE AND MANUALS



- 950-42801-00 Operator's manual, AutoPore IV
- 942-42805-00 Operator's manual, for AutoPore III

KIT

Extended Operation Supplies; includes O-rings, greases, high-pressure fluid, vacuum pump oil, seals, and valve parts.

- 950-33600-00 For AutoPore IV
- 942-33600-00 For AutoPore III
- 942-33602-00 Spare Parts Kit for AutoPore III; for customers in remote location or where stocks need to be stocked on site.
- 922-33607-00 Cup Seal Kit; includes back-up rings and seals.
- 920-33616-00 High Pressure Maintenance Kit; includes rings, seals, contacts, and banana plugs.
- 090-33600-00 Banana Plug Servicing Kit; includes banana plugs, installation tool, and instructions.
- 942-33021-00 Exhaust Fan Kit; includes fan and installation instructions.

Degassing Units

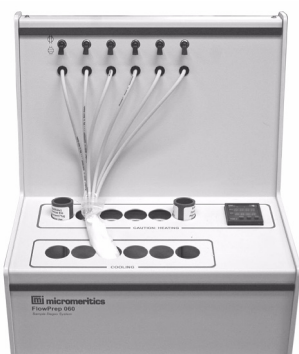
VACPREP 061



Degasses up to six samples at up to 400 °C with either flowing gas or evacuation (requires a vacuum pump and gas regulator).

061-00023-00 VacPrep for Gemini
061-00030-00 VacPrep for TriStar

FLOWPREP 060



Degasses up to six samples at up to 400 °C with flowing gas (requires a gas regulator).

060-00023-00 FlowPrep for Gemini
060-00030-00 FlowPrep for TriStar

SMARTPREP 065



Automated degasser with Windows-software interface.
Degasses up to six samples at up to 400 °C with flowing gas (requires a gas regulator).

065-00023-00 SmartPrep for Gemini

ISOTHERMAL SHIELD



TriStar
065-25815-00 Placed around the sample tube for maintaining a uniform temperature.



Gemini
Acts as an isothermal shield for Gemini sample tubes in degassing devices

065-25811-00 For 3/4-in. (1.91-cm) OD bulb tubes

065-25812-00 For 3/8-in. (0.96-cm) OD straight-wall tubes

ISOTHERMAL SHIELD REMOVAL TOOL



065-54800-00 For removing hot Gemini spacers from degassing devices

GLOVES



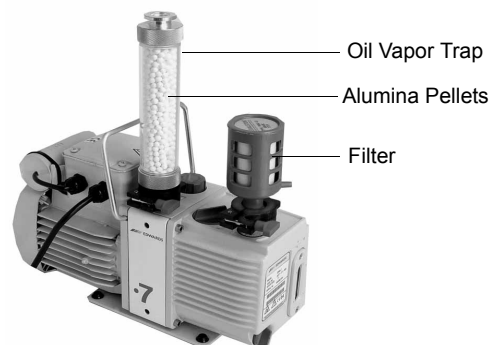
004-32187-00 Cotton flannel, for handling hot components

FILTER



004-27015-00 SmartPrep air filter; package of 10

VACUUM PUMP AND ACCESSORIES



Required when using the VacPrep 061. Includes vacuum hose, fittings, oil, and manual.

- 062-00000-11 115 V
- 062-00000-23 230 V
- 004-27040-00 Filter; for vacuum pump exhaust
- 200-33014-00 Oil Vapor Trap Kit; Includes two oil vapor traps, manual, and alumina (for vacuum pumps)
- 004-16830-00 Activated alumina pellets, 500 grams
- 200-25879-00 Funnel, for filling vacuum pump with oil
- 004-16003-01 Oil, 1 Liter

GAS REGULATOR



004-62230-58 CGA 580 fitting, 30 psig (Ar, He, Kr, N₂)

SOFTWARE AND MANUALS



- 061-42802-00 Operator's manual, VacPrep 061
- 060-42803-00 Operator's manual, FlowPrep 060
- 065-42801-00 Operator's manual, SmartPrep 065
- 065-33001-00 SmartPrep software package; includes current version software and operator's manual.

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- Electrical sensing zone (Elzone)
- Sedimentation (SediGraph)
- Sieves, Microscopy
- Dynamic image analysis

B.E.T. Surface Area Analysis

- Static volumetric
- Flowing gas

Pore Size Analysis

- Gas adsorption techniques
- Mercury porosimetry

Chemisorption Methods

- Pulse chemisorption
- Percent dispersion of metal catalyst
- Temperature program studies
- Mass spectrometry

Density

- Skeletal density
- Envelope density
- Bulk density
- Tap density

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- Method validation

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Internet: www.particletesting.com

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