# Технические характеристики

7900 ICP-MS

# ICP-MS Supplies

As ICP-MS has evolved to become the premier technique for trace metal analysis, Agilent has been at the forefront of development and design, introducing many important innovations. With the 8900 Triple Quadrupole ICP-MS, the innovative MS/MS operation provides precise control of reaction processes in the collision/reaction cell, ensuring better performance than conventional reaction cell ICP-MS. This new technology delivers unrivaled flexibility for solving difficult applications.

## ICP-MS Maintenance Schedule

| Item | Actions/Comments | Typical Schedule* |
|---|---|---|
| Argon gas | Check argon gas pressure and volume | Daily (check before starting work and over the course of daily analysis) |
| Drain vessel | Check, empty if required | |
| Peristaltic pump tubing | Check for damage/deterioration<br>Typically replace sample uptake tubing weekly | |
| Sampling cone, skimmer cone | Check orifice for matrix build-up, deformation, and enlargement<br>Clean or replace if required | Weekly |
| Foreline pump | Check oil level and color<br>Check exhaust hose for kinks, damage, oil contamination, and secure connection | Monthly |
| Nebulizer | Run nebulizer test, take appropriate action as indicated | |
| Cooling fluid | Check level and condition | |
| Foreline pump | Change oil | 6 months |
| Foreline pump oil mist filter | Replace mist filter | Annually |
| Penning gauge (7500 Series) | Clean and replace when necessary | |
| Water strainer | Check and clean | |
| Cooling fluid | Replace | |
| Extraction/Omega lenses | Clean | Periodically |
| Shield contact | Replace | |
| Octopole | Replace when necessary | |
| Other ion lenses | Clean | |
| Sample introduction area, for example, spray chamber, end cap | Clean | |
| Torch | Clean and replace when necessary | |
| Electron multiplier | Evaluate and replace when necessary | |
| Plasma gas, auxiliary gas tubing | Check and replace when necessary | |
| Argon gas filter | Check and replace when necessary | |
| Graphite gasket for sampler cone | Replace when surface or shape is damaged | |

*Maintenance frequency is highly dependent on lab conditions, sample throughput, and sample type. Components should be checked periodically (as indicated), and appropriate action taken.

# Sample Introduction Supplies

## Sample Line Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| Tubing, peristaltic pump, Tygon, white/white | 1.02 mm id, 40 cm, 3 tabs | Standard for sample introduction | 12/pk | G1833-65569 | G1833-65569 |
| Tubing, peristaltic pump, PVC, black/black, flared ends | 0.76 mm id, 40 cm, 3 tabs | Recommended for high matrix samples | 12/pk | 5064-8101 | 5064-8101 |
| Tubing, peristaltic pump, Tygon, 2 stopper, blue/orange, flared end, for pumping internal standard | 0.25 mm id | Standard for 77/78/79/88/8900 | 12/pk | G3280-67047 | G3280-67047 |
| Tubing, peristaltic pump, PVC, 2 stopper, red/orange, flared end, for pumping internal standard | 0.19 mm id | Standard for 7500 Series | 15/pk | G3280-67008 | G3280-67008 |
| Tubing, peristaltic pump, Fluran, 3 stopper, yellow/blue | 1.52 mm id | For xylene analysis | 1/pk | 5042-4799 | 5042-4799 |
| Tubing, peristaltic pump, silicone, white/white | 1.02 mm id, 16 inch | | 6/pk | G1820-65217 | G1820-65217 |
| Tubing, peristaltic pump, Tygon, red/orange, for internal standard | 0.19 mm id, 40 cm | | 12/pk | | G1833-65571 |
| Tubing, peristaltic pump, Ismaprene, for pumping drain | 1.52 mm id, 40 cm, 3 tabs | | 12/pk | G1833-65570 | G1833-65570 |
| Sample tubing, PFA | 0.5 mm id, 1.6 mm od, 5 m | Standard sample uptake tubing | 1/pk | G1820-65105 | G1820-65105 |
| Sample tubing, PFA | 0.2 mm id, 1.6 mm od, 70 cm | | 3/pk | G1833-65573 | G1833-65573 |
| Sample tubing, PFA | 0.15 mm id, 1.6 mm od, 70 cm | | 3/pk | G1833-65572 | G1833-65572 |
| Sample tubing with PEEK guide, PFA | 0.3 mm id, 1.6 mm od, 70 cm | | 5/pk | G1820-65531 | G1820-65531 |
| Sample tubing with PEEK guide, PFA | 0.2 mm id, 1.6 mm od, 70 cm | | 5/pk | G1820-65527 | G1820-65527 |
| Sample tubing with PEEK guide, PFA | 0.15 mm id, 1.6 mm od, 70 cm | | 5/pk | G1820-65526 | G1820-65526 |
| Sample tubing, for online internal standard addition | 0.3 mm id, 1.6 mm od, 3 m | For online internal standard addition | 1/pk | G1820-65478 | G1820-65478 |
| Online internal standard addition kit | | | 1/pk | G3280-60590 | G3280-60590 |
| Plastic tubing cutter | | | 1/pk | 8710-1930 | 8710-1930 |
| Sample tray | | For 7700/8800 ICP-MS | 1/pk | G3280-40103 | |

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Sample tubing, PFA, G1820-65105

Plastic tubing cutter, 8710-1930

## Sample Line Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| Sample tray | | For 7800/7900 ICP-MS | 1/pk | G8400-40113 | |
| Sample tray | | For 8900 ICP-MS | 1/pk | G3666-40104 | |
| Plug for cross joint | | | 3/pk | G3138-65129 | G3138-65129 |
| PTFE nut | For 1.6 mm od tubing | For 1.6 mm od tubing | 10/pk | 5064-8023 | 5064-8023 |
| Ferrule, front and back | For 1.6 mm od tubing | For 1.6 mm od tubing | 10/pk | 5064-8024 | 5064-8024 |
| Stator arm tape, for peristaltic pump | | | 3/pk | G3280-60568 | G3280-60568 |
| Stator arm tape, for peristaltic pump, 30 m roll | | | 1/pk | 5043-0030 | 5043-0030 |

## Nebulizers and Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| MicroMist nebulizer, U-series | Borosilicate glass, with UniFit sample connector | Standard on 78/79/8800<br>Suitable for most sample types except those containing HF or suspended particulates. | 1/pk | G3266-80004 | |
| UniFit sample inlet fitting | 0.5 mm id, 700 mm, with connector | For U-Series MicroMist nebulizer with Unifit sample connector | 10/pk | G3266-80012 | |
| UniFit sample inlet fitting | 0.25 mm id, 700 mm, with connector | | 10/pk | G3266-80013 | |
| MicroMist nebulizer | Borosilicate glass, with Ezyfit sample connector | Standard on 7700x/e, 8800 and 7500cx/ce<br>Suitable for most sample types except those containing HF or suspended particulates<br>When ordered for the 7500a, the spray chamber end cap (p/n G1833-65475) is also required | 1/pk | G3266-65003 | G3266-65003 |
| Sample inlet (EzyFit) fitting | 0.25 mm id, 700 mm, with connector | For MicroMist nebulizer with EzyFit sample connector, 0.25 mm id, 700 mm with connector | 10/pk | G3266-80010 | G3266-80010 |
| Sample inlet (EzyFit) fitting | 0.5 mm id, 700 mm, with connector | For MicroMist nebulizer with EzyFit sample connector, 0.5 mm id, 700 mm | 10/pk | G3266-80011 | G3266-80011 |
| Nebulizer* gas connector, for MicroMist nebulizer | | | 1/pk | G3266-80015 | G3266-80015 |
| MicroMist nebulizer, with PEEK gas fitting | Borosilicate glass with PEEK gas connector | Standard on 8900<br>Suitable for most sample types except those containing HF or suspended particulates | 1/pk | G3266-80005 | |
| Nebulizer cleaner | | Suitable for conventional concentric nebulizer | 1/pk | G3266-80020 | G3266-80020 |
| MicroFlow nebulizer | PFA, 200 µL/min | For analysis of high purity and HF samples, not for use with the integrated autosampler (I-AS) | 1/pk | G3139-65100 | G3139-65100 |
| MicroFlow nebulizer, with I-AS probe | PFA, 200 µL/min | Standard for semicon configuration on 7700s, 8800, 8900, and 7500s<br>For analysis of high purity and HF samples when using the integrated autosampler (I-AS), sample uptake tube terminates as a sampling probe | 1/pk | G3139-65102 | G3139-65102 |
| MicroFlow nebulizer | PFA, 20–50 µL/min | Low flow rate self-aspirating inert nebulizer, not for use with the integrated autosampler (I-AS) | 1/pk | G3139-65106 | G3139-65106 |

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MicroMist nebulizer, G3266-65003



Sample tubing, G3266-80010



Nebulizer gas* connector, G3266-80015

## Nebulizers and Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| MicroFlow nebulizer with I-AS probe | PFA, 20–50 µL/min | Low flow rate self-aspirating inert nebulizer when using the integrated sutosampler (I-AS), sample uptake tube terminates as a sampling probe. | 1/pk | G3139-65108 | G3139-65108 |
| Nebulizer* gas line connector | | Connector for MicroFlow nebulizer | 1/pk | G1833-65583 | G1833-65583 |
| Mira Mist nebulizer | PTFE | For high solids applications such as environmental, geological, etc. Not for semiconductor use since it does not self-aspirate. When ordered for the 7500a, the spray chamber end cap (p/n G1833-65475) is also required (included with 7500cx/cs) | 1/pk | G3161-80000 | G3161-80000 |
| Mira Mist nebulizer, PEEK | PTFE | For high solids applications such as environmental, geological, etc. Not for semiconductor use since it does not self-aspirate. When ordered for the 7500a, the spray chamber end cap (p/n G1833-65475) is also required (included with 7500cx/cs) | 1/pk | G3161-80001 | G3161-80001 |
| Sample inlet connector, for Mira Mist nebulizer | Includes 0.5 m sample capillary (0.044 inch od x 0.018 inch id) | | 10/pk | CP913777 | |
| Babington nebulizer | Includes FPM O-ring, PTFE sample tubing, and connector | For samples with high matrix and high total salts. Clean when contaminated or when orifices are clogged | 1/pk | | G1820-60453 |
| End cap for Babington nebulizer, polypropylene | Includes FPM O-rings | Replace when memory effects do not disappear after cleaning. Insert nebulizer in middle of end cap all the way through. Attach end cap to spray chamber with "TOP" mark facing up. | 1/pk | | G1833-65476 |
| Babington nebulizer removal tool | | | 1/pk | | G1820-65345 |
| C-Flow PFA concentric nebulizer | PFA 200 µL/min | All PFA nebulizer recommended for ultratrace analysis. Alternative to the MicroFlow nebulizer | 1/pk | G3285-80000 | |
| C-Flow PFA concentric nebulizer with I-AS probe | PFA 200 µL/min | All PFA nebulizer recommended for ultratrace analysis. Alternative to the MicroFlow nebulizer | 1/pk | G3285-80001 | |
| C-Flow PFA concentric nebulizer | PFA 50 µL/min | Recommended for VPD and high matrix semiconductor, specifically Si matrixes above 100 mg/L, and for $H_3PO_4$. Use in free-aspiration mode | 1/pk | G3285-80002 | |

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Nebulizer cleaner, G3266-80020



MicroFlow nebulizer with I-AS probe, G3139-65102



Nebulizer gas* line connector, G1833-65583

## Nebulizers and Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| C-Flow PFA concentric nebulizer with I-AS probe | PFA 50 µL/min | Recommended for VPD and high matrix semiconductor, specifically Si matrixes above 100 mg/L, and for $H_3PO_4$ Use in free-aspiration mode | 1/pk | G3285-80003 | |
| Concentric nebulizer, Pyrex | Use with Argon gas connector (p/n G1820-65052), connector kit (p/n G1820-60160), and end cap (p/n G1820-65121**) | Use with clean samples only. Not resistant to hydrochloric acid. Clean with a 5 % $HNO_3$ (v/v) bath; do not use ultrasonic bath. | 1/pk | G1820-65030 | G1820-65030 |
| Concentric nebulizer, quartz | Use with Quartz spray chamber (p/n G1820-65337), and Quartz connecting pipe (p/n G1820-80237**) | Recommended for trace analysis of clean samples. Lower contamination level than Pyrex. Clean using 5 % $HNO_3$ (v/v) bath; do not use ultrasonic bath. | 1/pk | G1820-65138 | G1820-65138 |
| Connector for nebulizer* gas line, polypropylene | 4 mm tubing, includes ferrule and O-ring | For gas line connection to concentric nebulizer | 1/pk | G1820-65052 | G1820-65052 |
| Sample tubing with connector, PTFE | Tool included | For Babington nebulizer, replace when heavily contaminated by high matrix samples. | 1/pk | | G1820-65276 |
| Sample line connector | Includes FPM O-ring | Connects concentric nebulizer with sample line. Port with large hole connects to nebulizer; smaller port connects with sample tubing. | | G1820-60160 | G1820-60160 |
| Union fitting | 4 mm tubing | For PFA concentric nebulizer | 1/pk | 5064-8078 | 5064-8078 |
| Ferrule and FPM O-ring kit, for nebulizer* gas line connector | | For Babington/concentric nebulizer | 1/pk | G1820-65533 | G1820-65533 |
| End cap, PTFE, for concentric nebulizer | Includes FPM O-rings | Connects the concentric nebulizer (Pyrex or quartz) with the spray chamber, for MicroMist, MicroFlow, and other concentric nebulizers. | 1/pk | | G1833-65475 |
| O-ring, FPM, for Babington nebulizer | | Used to create seal between Babington nebulizer and end cap | 4/pk | | G1820-65199 |

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Polypropylene connector, G1820-65052



Ferrule and FPM fluoroelastomer polymer O-ring kit, for nebulizer gas* line connector, G1820-65533

## Nebulizers and Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| O-ring kit, FPM, for concentric nebulizer | 2 sizes, 10 each | | 20/pk | G1820-65491 | G1820-65491 |
| O-rings for concentric nebulizer, for organic solvents (3 types) | | | 4/pk | G1820-65520 | G1820-65520 |
| O-ring, FPM, for end cap | | Use for the end cap of the Babington nebulizer, CrossFlow nebulizer, and concentric nebulizer | 5/pk | | G1820-65198 |
| O-rings for end cap, for organic solvents | | | 2/pk | | G1820-65518 |
| Cross-flow nebulizer | Includes bushing, nebulizer* gas line connector, blend gas line connector, sample tubing, and gas line tubings with inner sleeves | Standard nebulizer for the inert kit. Resistant to hydrofluoric acid. Set nebulizer* gas pressure to 500 kPa (5 kg/cm$^2$). Clean with 5 % $HNO_3$ (v/v) bath. Replace when memory effects remain after cleaning. | | | G1833-65462 |
| O-ring A, for concentric nebulizer | Perfluoro, 1.07 mm id | | 5/pk | G3280-67115 | |
| O-ring B, for concentric nebulizer | Perfluoro, 3.8 mm id | | 5/pk | G3280-67116 | |

*The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)

**Part supported but no longer available



## Humidifier Accessory

Compatible with a range of Agilent ICP-OES, ICP-MS, and MP-AES instruments, Agilent's humidifier accessory can significantly improve signal stability for the analysis of challenging sample types.

**Spray Chambers**

| Description | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|
| Spray chamber, double-pass design, quartz | Standard for 77/78/8800 and 7500 Series<br>Also suits 7900 and 8900 if Ultra HMI capability is not required | | G3280-80008 | G1820-65337 |
| Spray chamber, double-pass design, quartz | For 7900 and 8900 series<br>Required when using Ultra HMI capability | | G8400-67150 | |
| Endcap for spray chamber | | | G3280-60008 | |
| Endcap retainer, secures end cap to spray chamber body | For 77/78/8800 and 7500 Series | | G3280-67091 | G3280-67091 |
| Endcap retainer, secures end cap to spray chamber body | For 7900 and 8900 series (p/n G8400-67150) | | G8400-40200 | |
| Connector for gas line at endcap | | | 5042-4775 | |
| Endcap nut for nebulizer connection | | | 0535-1082 | |
| Drain tubing assembly | | | G3280-60555 | |
| Tubing for drainage, 4 mm id, 2.5 m | Tubing between peristaltic pump tubing and drain tank | | G1820-65515 | G1820-65515 |
| | | | G3160-67000 | |
| Drain tank, polyethylene, 4 L | | | 5042-4769 | 5042-4769 |
| Drain tank | | | G1820-65016 | G1820-65016 |
| Drain tank for organic solvents | | | G1820-65505 | G1820-65505 |
| Drain tubing kit | | | G1833-65411 | G1833-65411 |
| Bushing at spray chamber drain, FPM | | 5/pk | | G1820-65482 |

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## Spray Chambers

| Description | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|
| Bushing at spray chamber drain, for organic solvents | For use with organic solvents | | | G1820-65504 |
| Connector for spray chamber drainage, polypropylene | | | | G1820-65503 |
| Spray chamber | For ultratrace B analysis, does not require quartz connector tube between spray chamber and torch | | G3280-80503 | G3270-80300 |
| Ball Joint Connector, Quartz | Between spray chamber and torch | | | G1833-65426 |
| Connector, polypropylene | Between spray chamber and torch | | | G1833-65464 |
| T-connector for optional gas introduction, quartz | Between spray chamber and torch | | | G1833-65427 |
| O-rings for polypropylene connector, FPM | | 10/pk | | G1833-65480 |
| Clamps for ball joint connector between spray chamber and torch | Used to secure ball joint connectors on spray chamber, connector tube and torch. For 77/8800 ICP-MS | 2/pk | G1833-65430 | G1833-65430 |
| Clamp for ball joint connector between spray chamber and torch, 7900 ICP-MS | Used to secure ball joint connectors on spray chamber, connector tube and torch. For 7800/7900 ICP-MS | | G8400-60327 | |
| Tygon tubing, 3 m | For drain to drain tank | | G3280-60077 | G3280-60077 |
| Organic solvent introduction kit<br>Replaces the standard quartz torch, sample introduction and drain parts with those suitable for analysis of volatile organic solvents. Includes quartz torch with 1.5 mm id injector (1.0 mm id torch is not supplied, but is available for volatile organics), sample tubing with guide (0.15 mm id, 70 cm, 5/pk and 0.2 mm id, 70 cm, 5/pk), sample tubing (0.3 mm id, 3 m) peristaltic pump tubing for drain (30/pk) and organic solvent warning label. Requires, but does not include a quartz concentric nebulizer and an option gas line for $O_2$/Ar nebulizer* gas addition (p/n G4920A). A Pt sampling cone is also required, when $O_2$ nebulizer* gas is added. | | | G3280-60580 | |

*The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)

# PFA Inert Sample Introduction Kit Supplies

The PFA inert sample introduction kits replaces the standard quartz sample introduction parts with those suitable for the analysis of high purity and HF samples. Kit includes end cap (PFA), spray chamber (PFA), connecting pipe, demountable torch with PFA base, and torch injector (either Pt or sapphire). The kit with the sapphire injector is recommended for volatile organic solvents. The kit with the Pt injector is recommended for semiconductor applications. Requires but does not include a nebulizer. The PFA nebulizer is recommended and should be ordered separately.

PFA inert kit, sapphire, 2.5 mm id, G4912-68000

Connector tube with gas port, G4912-80016

## PP Inert Sample Introduction Kit Supplies for 7500 Series

| Description | 7500 Part No. |
|---|---|
| Spray chamber, polypropylene (sapphire tube) | G1833-65463 |
| Inert torch, quartz, without injector | G1833-65422 |
| Platinum injector for inert torch, 2.5 mm id | G1833-65415 |
| Platinum injector for inert torch, 2.0 mm id | G1833-65409 |
| Platinum injector for inert torch, 1.5 mm id | G1833-65416 |

## PFA Inert Sample Introduction Kit Supplies

| Description | Comments | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|
| PFA inert kit, sapphire, 2.5 mm id | Torch included | G4912-68000 | |
| PFA inert kit, platinum, 2.5 mm id | Torch included | G4912-68001 | |
| PFA inert kit, sapphire, 1.5 mm id | Torch included | G4912-68002 | |
| PFA inert kit, platinum, 1.5 mm id | Torch included | G4912-68003 | |
| Inert sample introduction kit, sapphire, 2.5 mm id | Torch not included | | G3285-80014 |
| Inert sample introduction kit, platinum, 2.5 mm id | Torch not included | | G3285-80015 |
| Inert sample introduction kit, sapphire, with $O_2$ port, 1.5 mm id | Torch not included | | G3285-80016 |
| Inert sample introduction kit, platinum, with $O_2$ port, 1.5 mm id | Torch not included | | G3285-80017 |
| End cap | | G3285-80020 | G3285-80020 |
| Spray chamber | | G3285-80021 | G3285-80021 |
| Tube, drain, PFA | | G4912-80014 | G3285-80022 |
| Short connector tube | No gas port | | G3285-80023 |
| Long connector tube | No gas port | G3285-80024 | |
| Connector tube with gas port | | G4912-80016 | |

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## PFA Inert Sample Introduction Kit Supplies

| Description | Comments | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|
| O-ring for injection assembly | | G3285-80085 | G3285-80085 |
| Injector, sapphire, for PFA inert kit, 2.5 mm id injector | | G3285-80034 | G3285-80034 |
| Injector, platinum, for PFA, 2.5 mm id | | G3285-80035 | G3285-80035 |
| Injector, sapphire, for inert torch, 1.5 mm id | | G4912-80010 | |
| Injector, sapphire, for PFA inert kit, with $O_2$ port, 1.5 mm id | | | G3285-80036 |
| Injector, platinum, for PFA inert kit, with $O_2$ port, 1.5 mm id | | | G3285-80037 |
| Injector, platinum, for inert torch, 1.5 mm id | | G4912-80011 | |
| Torch for PFA inert kit | | G4912-80012 | G4912-80012 |
| Demountable torch | No injector | G4912-80013 | G4912-80013 |

**Note:** PFA = perfluoroalkoxy

## HMI Kit Supplies for 7500

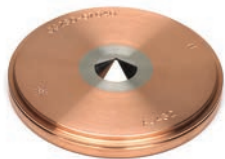| Description | Part No. |
|---|---|
| Plug for make-up gas connector | G3270-20067 |
| Inner sleeve | 5022-1703 |
| Gas connector | 5042-4774 |
| End cap assembly | G3270-60207 |
| Connector rod, oxygen | G3270-80026 |
| Torch, 2.5 mm, 2 projections | G3270-80043 |
| Quartz connector tube with dilution port for HMI | G3270-80024 |
| Quartz connector tube (straight) | G3270-80025 |
| Connector rod, oxygen | G3270-80026 |

# Torches and Components

## Torches and Components

| Description | Use | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|
| Torch, quartz, 2.5 mm id | Standard torch for most applications Not suitable for samples containing hydrofluoric acid | G3280-80053 | G3270-80043 |
| Torch, quartz, 1.5 mm id, taper type | For use with organic solvents. Not suitable for samples containing hydrofluoric acid | G3280-80080 | G1833-65424 |
| Torch, quartz, 1.0 mm id, taper type | For use with organic solvents Not suitable for samples containing hydrofluoric acid | G3280-80081 | G1833-65425 |
| Shield plate, long-life | Use with the bonnet | G1833-65419 | G1833-65419 |
| Bonnet (quartz ring for shield torch) | Use with shield plate (p/n G1833-65419) | G1833-65421 | G1833-65421 |
| Quartz connector tube (straight) | For use with UHMI spray chamber (pn G8400-67150) or without HMI capability | G3270-80025 | G3270-80025 |
| Quartz connector tube with dilution port for HMI | For use with HMI capability for addition of dilution gas | G3270-80024 | G3270-80024 |
| Blank plug for UHMI dilution port, PTFE, 8900 | | G3666-20391 | |
| Clamps for ball joint connector between spray chamber and torch | Used to secure ball joint connectors on spray chamber, connector tube and torch | G1833-65430 | G1833-65430 |
| Clamp for ball joint connector between spray chamber and torch, 7900 ICP-MS | Used to secure ball joint connectors on spray chamber, connector tube and torch. For 7800/7900 and 8900 | G8400-60327 | |
| RF coil for 7700/8800 ICP-MS | | G3280-60638 | G1833-65432 |
| Alignment plate for RF coil | | G1833-66011 | G1833-66011 |
| RF coil for 7900/8900 ICP-MS | | G8400-60434 | |

**Note:** See PFA Inert Sample Introduction Kit Supplies table for the torch for inert kit on **Page 87, 88**.

### TIPS AND TOOLS

The torch must be completely dried before installing and igniting the plasma. Replace if chipped, cracked, or distorted.

Sampling cone, nickel,
G3280-67040

Platinum sampling cone,
G3280-67036

# Interface Cones and Ion Lenses

## Sampling Cones

### Suits 77/78/7900 and 88/8900 series

| Description | Part No. |
|---|---|
| Nickel (standard for x-lens, Ni tip with Cu base) | G3280-67040 |
| Nickel-plated (Ni tip with Ni-plated Cu base) | G3280-67061 |
| Platinum (standard for s-lens / semicon, Pt tip with Cu base) | G3280-67036 |
| Platinum large insert (18 mm, Pt tip with Cu base) | G3280-67056 |

## Cone Care Packages

**Suits 77/78/7900 and 8900 series**

| Description | Kit Contents | Part No. |
| --- | --- | --- |
| Nickel sampler cone care package | Includes magnifier tool (5190-9614), graphite gasket for sampling cone, 3/pk (G3280-67009), cotton swabs for cleaning, 100/pk (9300-2574), and two nickel sampler cones (G3280-67040) | 5067-0294 |
| Nickel plated sampler cone care package | Includes magnifier tool (5190-9614), graphite gasket for sampling cone, 3/pk (G3280-67009), cotton swabs for cleaning, 100/pk (9300-2574), and two nickel-plated sampler cones (G3280-67061) | 5067-0295 |
| Platinum sampler cone care package | Includes magnifier tool (5190-9614), graphite gasket for sampling cone, 3/pk (G3280-67009), cotton swabs for cleaning, 100/pk (9300-2574), and two platinum sampler cones (G3280-67036) | 5067-0296 |

**Note:** Cone care packages do not include skimmer cones. Please add the appropriate skimmer cone type and quantity required to your order using **Skimmer Cones** table.

Nickel sampler cone care package 5067-0294

Nickel plated sampler cone care package 5067-0295

Platinum sampler cone care package 5067-0296

## Skimmer Cones

**Selection by ion lens configuration and ICP-MS series**

| Description | x-lens | | s-lens (semicon) | |
|---|---|---|---|---|
| | **7700 (+e)/7800/8800** | **7900/8900** | **7700/7900/8800** | **8900** |
| Nickel | G3280-67041 | G8400-67200 | G3280-67066 | G3666-67421 |
| Platinum, with copper base | G3280-67060 | G8400-67201 | G3280-67064 | G3666-67401 |
| Platinum, with nickel base | G3280-67063 | G8400-67202 | G3280-67065 | G3666-67411 |

**Note:** Shaded cells denote standard configuration

## Skimmer Bases

**Selection first by ion lens configuration and ICP-MS series, then by the Interface cone material (Nickel, Ni or Platinum, Pt)**

| Description | x-lens | | | s-lens (semicon) | | |
|---|---|---|---|---|---|---|
| | **7700 (+e)/7800/8800** | **7900** | **8900** | **7900** | **7700/8800** | **8900** |
| Stainless steel (use with Ni cones) | G3280-60608 | G8400-60624 | G3666-60301 | G8400-60627 | G1833-65591 | - |
| Brass (use with Pt cones) | G3280-60621 | G8400-60625 | G3666-60311 | G8400-60626 | G1833-65590 | G3666-60401 |

**Note:** Shaded cells denote standard configuration

### TIPS AND TOOLS

If you plan to do cool plasma measurements using your ICP-MS, you should have s-lenses (semiconductor) fitted to your interface.

## Interface Cones For Specialist Applications

| Description | Part No. |
|---|---|
| Copper skimmer cone, for 7700/7900/8800 with s-lens / semicon configuration | G3280-67067 |
| Copper skimmer cone, for 8900 with semicon configuration | G3666-67067 |
| Brass off-set skimmer base, for 7700/8800 with s-lens / semicon configuration | G3280-60381 |
| Brass off-set skimmer base, for 7900 with s-lens / semicon configuration | G8400-60628 |
| **Interface cones, for 8900 fitted with m-lens** | |
| Sampling cone, platinum | G3280-67036 |
| Skimmer cone, platinum with nickel base | G3666-67501 |
| Skimmer base, brass | G3666-60401 |
| **Interface cones, for 8900 fitted with c-lens** | |
| Sampling cone, platinum | G3280-67036 |
| Skimmer cone, platinum with copper base | G3280-67064 |
| Skimmer base, brass | G3666-60601 |

Skimmer cone, nickel, G3280-67041



Platinum skimmer cone, G3280-67060



Skimmer base, stainless steel, G3280-60608

## Recommendations on What Cone to Use

| Type of Cone | For which Model ICP-MS? | Skimmer Base Required | Recommended Applications |
|---|---|---|---|
| Nickel sample and skimmer cones | Standard on 7500a/i/c/ce/cx, 7700x/e, 7800/7900, and 8800/8900 with x-lens | Stainless steel | Suitable for most common applications. Provides most economical operation. |
| Nickel plated sampling cone | Optional for all 77/78/7900 and 88/8900 models | Stainless steel | For samples containing > 0.5 % HCl, or for routine operation with (U)HMI with maximum aerosol dilution ratio. |
| Platinum sample cone | Standard on 7500s/cs, 7700s, 7900 with s-lens, and 8800/8900 semicon configuration. Optional for all other models. | Brass | Required for analysis of aggressive acids (especially HF) and when $O_2$/Ar option gas is used for analysis of organic solvents. Use sample cone with larger 18 mm insert for high viscosity and high boiling point acids e.g. $H_2SO_4$ or $H_3PO_4$. |
| Platinum skimmer with copper base | Standard on 7700s, 7900s, 8800/8900 semicon configuration, and 8900c | Brass | Recommended for the lowest LODs and for higher matrix samples. Required for analysis of aggressive acids (especially HF). |
| Platinum skimmer with nickel base | Standard on 8900m | Brass | Recommended for organics analysis when $O_2$/Ar option gas is used |

## Interface Cone Guide for Agilent 7500 Series

| Description | Part No. | 7500a | 7500i | 7500s | 7500c | 7500ce/cx | 7500cs | T-mode |
|---|---|---|---|---|---|---|---|---|
| **Sampling Cone** | | | | | | | | |
| Nickel sampling cone | G1820-65238 | Std | Std | ✓ | Std | Std | ✓ | |
| Platinum sampling cone, 10 mm insert | G1820-65239 | ✓ | ✓ | Std | ✓ | ✓ | Std | |
| Platinum sampling cone, 18 mm insert | G1820-65360 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Nickel sampling cone, for T-mode | G1820-65480 | T-mode | T-mode | T-mode | | | | ✓ |
| **Skimmer Cone** | | | | | | | | |
| Nickel skimmer cone | G1820-65050 | Std | Std | ✓ | | | | |
| Nickel skimmer cone | G3270-65024 | | | | | Std | | |
| Nickel skimmer cone | G1833-65497 | | | | Std | | ✓ | |
| Platinum skimmer cone | G1820-65237 | ✓ | ✓ | Std | | | | |
| Platinum skimmer cone | G1833-65092 | | | | ✓ | | | |
| Platinum skimmer cone | G1833-65132 | | | | | | Std | |
| Platinum skimmer cone (Ni base) | G3270-60106 | | | | | ✓ | ✓ | |
| Copper skimmer cone | G3270-60643 | | | | | | ✓ | |
| Nickel skimmer cone, for T-mode | G1820-65481 | T-mode | T-mode | T-mode | | | | ✓ |
| **Skimmer Base** | | | | | | | | |
| Stainless steel base, for nickel skimmer | G1833-65407 | Std | Std | ✓ | | | | ✓ |
| Stainless steel base, for nickel skimmer | G1833-65591 | | | | | Std | ✓ | |
| Stainless steel base, for nickel skimmer | G1833-65498 | | | | Std | | | |
| Brass base, for platinum skimmer | G1833-65408 | ✓ | ✓ | Std | | | | |
| Brass base, for platinum skimmer | G1833-65505 | | | | ✓ | | | |
| Brass base, for platinum skimmer | G1833-65590 | | | | | ✓ | Std | |

**Key**

✓: Compatible part

Std: Fitted as standard when instrument shipped from factory

**NOTES:**

- 18 mm Pt cone insert is recommended for measuring $H_2SO_4$ above 2 %
- Pt T-mode cones are not available
- T-mode is not used with ORS models

Interface wrench for sampling cone,
G3280-01507



Retaining ring for sampling cone,
G3280-20504



Magnifier for checking the ICP-MS
cone orifice, 5190-9614

## Sampling and Skimmer Cone Supplies

| Description | 77/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|
| Interface wrench for sampling cone removal | G3280-01507 | G1833-65405 |
| Retaining ring for sampling cone | G3280-20504 | |
| Graphite gasket for sampling cone, 3/pk | G3280-67009 | |
| Interface wrench for skimmer cone removal | G3280-60502 | G1833-65079 |
| Screws for skimmer base, 4/pk | G1820-65435 | G1820-65435 |
| Cone cleaning detergent, 1 gallon | 5188-5359 | 5188-5359 |
| Alumina powder, abrasive, 1 kg | 8660-0791 | 8660-0791 |
| Cotton swab, ultra-fine cone bud shape, both ends, 100/pk | 9300-2574 | 9300-2574 |
| O-ring for sampling cone, FPM | | G1820-65025 |
| Magnifier, for checking the ICP-MS cone orifice, 10 x magnification, with LED lighting and +/- 15 mm scaled reticle | 5190-9614 | 5190-9614 |

## Ion lens System Components for 7900

| Description | Part No. |
|---|---|
| **7900 with x-lens** | |
| Extraction-omega lens assembly | G8400-67001 |
| Extraction lens 1 | G8400-60215 |
| Extraction lens 2 | G8400-60216 |
| Omega bias lens | G8400-00240 |
| Omega lens | G8400-60217 |
| Screw and spacer kit for x-lens | G8400-67003 |
| **7900 with s-lens** | |
| Extraction-omega lens assembly | G8400-67002 |
| Extraction lens 1 | G8400-60218 |
| Extraction lens 2 | G8400-60219 |
| Omega bias lens | G3280-20646 |
| Omega lens | G3280-20653 |
| Screw and spacer kit, for s-lens | G3280-67038 |

## Ion Lens System Components for 8900

| Description | Part No. |
| --- | --- |
| **8900 with x-lens** | |
| Extraction-Omega lens assembly | G3666-67300 |
| Extraction lens 1 | G3666-60302 |
| Extraction lens 2 | G3666-60303 |
| Omega lens | G8400-60217 |
| Omega bias lens | G8400-00240 |
| Screw and spacer kit | G8400-67003 |
| **8900 with semicon** | |
| Extraction-Omega lens assembly, for s-lens | G3666-67400 |
| Extraction-Omega lens assembly, for m-lens | G3666-67500 |
| Extraction-Omega lens assembly, for c-lens | G3666-67600 |
| Extraction lens 1, for s/c-lens | G3666-60402 |
| Extraction lens 1, for m-lens | G3666-60502 |
| Extraction lens 2, for s/c-lens | G3666-60403 |
| Extraction lens 2, for m-lens | G3666-60503 |
| Omega lens, for s/m/c-lens | G3666-20404 |
| Omega bias lens, for s/m/c-lens | G3666-20405 |
| Screw and spacer kit, for s/m/c-lens | G3666-67038 |
| **Octopole Reaction System (ORS)** | |
| Octopole assembly, for 8900 with axial accelerator | G3666-67045 |
| Octopole assembly, for 8900 without axial accelerator | G3666-67046 |
| Reaction cell (ORS cell) assembly, for 8900 with axial accelerator | G3666-67141 |
| Reaction cell (ORS cell) assembly, for 8900 without axial accelerator | G3666-67142 |
| Cell entrance lens, for 8900 | G3666-20394 |
| Cell exit lens, for 8900 | G3666-20396 |
| Cell focus lens, for 8900 | G3666-20395 |
| Screw/Spacer/O-ring, for reaction cell for 8900 | G3666-67044 |

Extraction-offset lens assembly, G3280-67039

## Ion Lens System Components for 7700/8800 Series

| Description | Part No. |
|---|---|
| **7700x/e and 8800** | |
| Extraction-offset lens assembly | G3280-67039 |
| Extraction lens 1 | G3280-60612 |
| Extraction lens 2 | G3280-60613 |
| Omega bias lens | G3280-01650 |
| Omega lens | G3280-60609 |
| Screw and spacer kit for x-lens | G3280-67037 |
| Spacer (deflect/plated b), 4/pk | G3280-67110 |
| **7700s and 8800 semicon configuration** | |
| Extraction-omega lens assembly | G3280-67035 |
| Extraction lens 1 | G1833-65592 |
| Extraction lens 2 | G1833-65593 |
| Omega bias lens | G3280-20646 |
| Omega lens | G3280-20653 |
| Screw and spacer kit, for s-lens | G3280-67038 |
| **Octopole Reaction System (ORS)** | |
| Octopole Reaction System (ORS) cell assembly | G8400-67701 |
| Octopole | G3280-67045 |
| Cell focus lens | G3280-20633 |
| Cell entrance lens | G3280-20618 |
| Cell exit lens | G3280-20664 |
| Tubing for cell gas | G3280-20663 |
| Deflect lens | G3280-20628 |
| Plate bias | G3280-60615 |
| Polishing paper kit | G1833-65404 |
| Manual vent valve, includes O-ring, for 77/79/88 | G3280-67046 |
| Offset skimmer tool | G3280-60671 |
| Screw/spacer/O-ring for cell | G3280-67044 |

## Ion lens System Components for 7500 Series

| Description | Part No. |
|---|---|
| **7500a/i/s/c/cs** | |
| Plate bias (for Eagle Q-pole) | G1833-65494 |
| Plate bias (for Slim ring Q-pole) | G1833-65444 |
| Polishing paper kit | G1833-65404 |
| **7500a/i/s** | |
| Extraction lens 1 | G1833-65417 |
| Extraction lens 2 | G1833-65413 |
| Omega lens assembly | G1833-65418 |
| Screw kit, for extraction lens | G1833-65024 |
| Screw kit, for omega lens | G1833-65025 |
| **7500c** | |
| Einzel lens 1 | G1833-65500 |
| Einzel lens 2 | G1833-65501 |
| Einzel lens 3 | G1833-65502 |
| Extraction lens | G1833-65499 |
| Octopole | G1833-65094 |
| Octopole assembly (includes cell entrance/exit without O-ring) | G1833-65503 |
| Screw and spacer kit, for extraction Einzel lens | G1833-65578 |
| Screw kit, for reaction cell | G1833-65088 |
| Tubing, for reaction gas, 2/pk | G1833-65089 |



Extraction lens 1, G1833-65417



Extraction lens 2, G1833-65413

| Description | Part No. |
|---|---|
| **7500ce/cx** | |
| O-ring for reaction cell | G1833-66035 |
| Extraction-Omega lens assembly | G3270-65023 |
| Extraction lens 1 | G3270-65028 |
| Extraction lens 2 | G3270-65029 |
| Omega lens | G3270-65030 |
| Omega bias lens | G3270-65031 |
| Screw and spacer kit | G3270-60639 |

*(Continued)*

## Ion lens System Components for 7500 Series

| Description | Part No. |
| --- | --- |
| **7500cs** | |
| Extraction lens 1 | G1833-65592 |
| Extraction lens 2 | G1833-65593 |
| Extraction-Omega lenses assembly | G1833-65596 |
| Omega bias lens | G1833-65594 |
| Omega lens | G1833-65595 |
| Screw and spacer kit, for ion lens | G1833-65125 |
| Cell entrance lens | G1833-65598 |
| Cell exit lens | G1833-66000 |
| Cell focus lens | G1833-65597 |
| **7500cs/ce/cx** | |
| Focus lens for Q-pole | G1833-65599 |
| Octopole | G1833-65133 |
| Octopole assembly (includes cell focus, cell entrance/exit, and QP focus) | G1833-65134 |
| Reaction cell assembly | G1833-66001 |
| Screw and spacer kit, for reaction cell | G1833-65138 |
| Plate bias | G1833-65513 |
| Plate bias | G1833-65562 |

## Electron Multipliers

| Description | 8900 Part No. | 8800 Part No. | 78/7900 Part No. | 7700 Part No. | 7500 Part No. |
| --- | --- | --- | --- | --- | --- |
| Electron multiplier (ETP) | | | | | 5184-1983 |
| Electron multiplier (HPK) | | | | | G1833-65575 |
| Electron multiplier | 5190-0154 | 5190-0123 | G8400-60258 | 5190-0108 | |
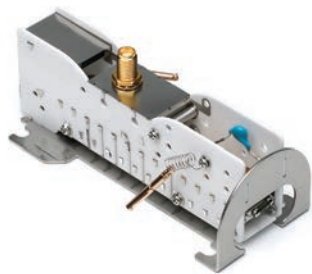


Electron multiplier, 5190-0108

## Vacuum System Supplies

• When plasma is on, check pump oil level every month
• Maintain oil level between maximum and minimum levels on the gauge
• Standard frequency for changing the oil is approximately every six months

**Vacuum System Supplies**

| Description | Unit | 78/79/8900 Part No. | 7700/8800 Part No. | 7500 Part No. |
|---|---|---|---|---|
| Pump oil, for MS40+, AVF Platinum* | 1 L | X3760-64004 | | |
| Foreline pump (rotary pump) oil, AVF Gold** | 1 gal | | 6040-0798 | 6040-0798 |
| Foreline pump (rotary pump) oil, AVF Gold** | 1 L | | 6040-0834 | 6040-0834 |
| Foreline pump fluid, Fomblin 06/6, recommended for strong acid samples | 2 kg | | 5069-4478 | |
| Oil mist filter element, for DS402 rotary vane pump | | | 9499342M002 | |
| Oil mist filter kit, for DS402 rotary vane pump | | | 9499392M004 | |
| Remote drain oil kit, for DS402 rotary vane pump | | | 9499375M003 | |
| DS oil return system kit | | | 9499376 | 9499376 |
| Oil mist filter element, for E2M18 | | | 1535-4970 | 1535-4970 |
| Oil mist filter element, for MS40+ | | G1960-80039 | | |
| Odor element, for oil mist filter for E2M18 | 5/pk | | 5063-9153 | 5063-9153 |
| Oil mist filter kit, for E1M18/E2M28 | | | 3162-1056 | 3162-1056 |
| Electrode kit, for penning gauge for 7500 | | | | G1833-65332 |
| Tube AIM gauge, for 7500 | | | | 5042-0901 |
| O-rings, for vent valve, FPM | 2/pk | G1833-65332 | G1833-65332 | |
| O-ring, for vacuum chamber, FPM | | 5042-4790 | 5042-4790 | |
| Manual vent valve, includes O-ring, for 77/79/88 | | G3280-67046 | G3280-67046 | |

* "AVF Platinum" was formerly termed "AVF 60 SHCE". The chemical composition of the oil is exactly the same and the part number is unchanged.

** "AVF Gold" was formerly termed "Inland 45". The chemical composition of the oil is exactly the same and the part numbers are unchanged.

## WARNINGS AND CAUTION

### DO NOT TOUCH THE OIL WITH BARE HANDS

Be careful when changing oil because it may have absorbed dangerous substances. The oil in the foreline pump (rotary pump) on the interface side of an ICP-MS equipped with a hydrofluoric acid resistant introduction system is especially hazardous.

# Peripherals Supplies

The Agilent Integrated Sample Introduction System (ISIS) provides the highest sample throughput, using either high-speed uptake with constant flow nebulization or discrete sampling using a six-port valve and sample loop with time-resolved acquisition. This allows for advanced sample handling and sample delivery options for advanced applications. The system also simplifies handling of high matrix samples by reducing interface exposure to sample matrix. This means less signal drift and improved precision plus less frequent cone cleaning.

Integrated Sample Introduction System

## Integrated Sample Introduction System (ISIS) Supplies

| Description | Comments | Unit | 7700/8800 Part No. | 7500 Part No. |
|---|---|---|---|---|
| Comprehensive spares for the Integrated Sample Introduction System A complete set of spare sample lines and connectors, plus fittings, mixing coil, block adapters, clamps, and tray | Includes sample tubing (0.5 mm id x 5 m, 0.3 mm id x 3 m, 2.0 mm id x 5 m, 0.8 mm id x 5 m), peristaltic pump tubing (0.89 mm id, 3 stoppers, Tygon, 12/pk), peristaltic pump tubing (flared end, Tygon, 2 stoppers (blue/orange), 0.25 mm id, 12/pk), peristaltic pump tubing (1.02 mm id, 2 stoppers, Tygon, 12/pk), tubing adapter 2/pk, tag for tubing identification (two lots of 10/pk), T-joint, cross joint, union joint, PTFE nut for 3 mm od tubing (10/pk), front and back ferrules for 3 mm od tubing (10/pk), PTFE nut for 1.6 mm od tubing (10/pk), front and back ferrules for 1.6 mm od tubing (10/pk), tubing clamp (small, 10/pk, large, 5/pk), and spiral tubing, 5 m | | G4911-67001 | |
| Preconfigured tubing kit, for autodilution | Includes set of sample lines and connectors for autodilution | | G4911-68201 | |
| Preconfigured tubing kit, for discrete sampling | Includes set of sample lines and connectors for discrete sampling | | G4911-68202 | G3138-65025 |
| Peristaltic pump tubing, Tygon | 0.89 mm id, 3 stops | 12/pk | 5064-8014 | 5064-8014 |
| Peristaltic pump tubing | 0.25 mm id, 2 stops, flared end | 12/pk | G4911-67000 | G4911-67000 |
| Peristaltic pump tubing, Tygon | 0.25 mm id, 3 stops | 12/pk | | 5064-8034 |
| Peristaltic pump tubing, Tygon | 0.25 mm id, 2 stops | 12/pk | | 5064-8015 |
| Peristaltic pump tubing, Tygon | 1.02 mm id, 2 stops | 12/pk | 5064-8028 | 5064-8028 |
| Peristaltic pump tubing, Tygon | 2.29 mm id, 2 stops | 12/pk | 5043-0010 | 5043-0010 |
| Peristaltic pump tubing adapter | | 2/pk | 5064-8026 | 5064-8026 |
| Peristaltic pump tubing adapter | 2.29 mm id | | G4911-20021 | |
| Sample tubing, PTFE | 0.8 mm id, 1.6 mm od | | 5064-8016 | 5064-8016 |
| Sample tubing, PTFE | 2 mm id, 3 mm od | | 5064-8020 | 5064-8020 |
| Sample tubing, PFA | 0.5 mm id, 1.6 mm od, 5 m | 1/pk | | G1820-65105 |
| Internal standard tubing, PFA | 0.3 mm id, 1.6 mm od, 3 m | 1/pk | | G1820-65478 |
| T-joint | | | 5064-8017 | 5064-8017 |
| T-joint, with earth block | | | G3280-67062 | |
| Cross joint | | | 5064-8018 | 5064-8018 |
| Union joint | | | 5064-8019 | 5064-8019 |

*(Continued)*

**Integrated Sample Introduction System (ISIS) Supplies**

| Description | Comments | Unit | 7700/8800 Part No. | 7500 Part No. |
|---|---|---|---|---|
| PTFE nut | For 3 mm od tubing | 10/pk | 5064-8021 | 5064-8021 |
| Ferrule, front and back | For 3 mm od tubing | 10/pk | 5064-8022 | 5064-8022 |
| PTFE nut for cross joint | For 1.6 mm od tubing | 10/pk | 5064-8023 | 5064-8023 |
| Ferrule, front and back | For 1.6 mm od tubing | 10/pk | 5064-8024 | 5064-8024 |
| Tubing adapter | | | | G3138-65158 |
| Tubing clamp | | | 5064-8027 | 5064-8027 |
| Spiral tubing, 5 m | | | 5064-8029 | 5064-8029 |
| Wrench, for valve maintenance | | | 5064-8032 | 5064-8032 |
| Tag, for tubing identification | | 10/pk | 5064-8033 | 5064-8033 |
| APG remote cable | | | 5182-2581 | 5182-2581 |
| Joint holder | | | | G3138-65102 |
| Joint holder, for nebulizer pump | | | G4911-01201 | |
| Joint holder, for Integrated Sample Introduction System pump | | | G3138-65103 | G3138-65103 |
| Sample line connector | | | | G3138-65104 |
| Rotor seal for valve | | | G3138-65117 | G3138-65117 |
| Nut for valve | | 6/pk | G3138-65118 | G3138-65118 |
| Ferrule for valve | | 6/pk | G3138-65119 | G3138-65119 |
| Mixer | | | G3138-65121 | G3138-65121 |
| Sample loop, 100 µL | | | G3138-65122 | G3138-65122 |
| Plastic tray | | | | G3138-65125 |
| Tray, for Integrated Sample Introduction System | | | G4911-60011 | |

Front and back ferrule, 5064-8024

Separator gas chamber, G3138-65131

## Integrated Sample Introduction System (ISIS) Hydride Generation Accessory Supplies for 77/8800

| Description | Specifications | Unit | Common Part No. |
| --- | --- | --- | --- |
| Separator gas chamber | | | G3138-65131 |
| Exclusive concentric nebulizer | | | G3138-65134 |
| Cyclone chamber | | | G3138-65136 |
| Peristaltic pump tubing, PharMed | 2.54 mm id, 2 stops | 6/pk | G3138-65128 |
| Tubing for gas line | 3 mm id, 4 mm od, 5 m | | G3138-65138 |
| Plug for cross joint | | 3/pk | G3138-65129 |
| Reducing union connector | 8 x 4 mm | | G3138-65144 |
| Reducing union connector | 6 x 3 mm | | G3138-65139 |
| Reducing union connector | 6 x 4 mm | | G3138-65140 |
| Plug for nebulizer* gas connector | 4 mm od | 3/pk | G3138-65141 |
| Y connector for pump tubing | 2.5 mm id | 5/pk | G3138-65143 |

*The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)

# Integrated Sample Introduction System 3 for 7800/7900/8900

The Integrated Sample Introduction System 3 (ISIS 3) dramatically increases the productivity of the Agilent 7800/7900/8900 ICP-MS while also allowing high matrix samples to be run for extended periods of time. With its fast uptake piston pump and close-coupled 7-port valve located close to the nebulizer, the ISIS 3 enables reduced sample uptake and rinse times with discrete sampling (DS). The ISIS 3 delivers unmatched productivity for high sample matrix analysis in high-throughput laboratories.

## Integrated Sample Introduction System 3 (ISIS 3) Supplies

| Description | Kit Contents | Unit | Part No. |
|---|---|---|---|
| **Tubing and Fittings for ISIS 3** | | | |
| PFA sample tubing 1.0 mm id, 1/16 inch od, 5 m | | | G8411-67117 |
| PFA sample tubing 2.18 mm id, 1/8 inch od, 5 m | | | G8411-67118 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with orange collapsible CTFE ferrule | 5/pk | 5023-1519 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with purple collapsible CTFE ferrule | 5/pk | 5023-1520 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with yellow collapsible CTFE ferrule | 5/pk | 5023-1521 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with white collapsible CTFE ferrule | 5/pk | 5023-1522 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with black collapsible CTFE ferrule | 5/pk | 5023-1523 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with blue collapsible CTFE ferrule | 5/pk | 5023-1524 |
| Flangeless tube end fitting 1/16 inch | Includes polypropylene nut with green collapsible CTFE ferrule | 5/pk | 5023-1525 |
| Flangeless tube end fitting 1/8 inch | Includes polypropylene nut with red collapsible CTFE ferrule | 5/pk | 5023-1526 |
| Flangeless tube end fitting 1/8 inch | Includes polypropylene nut with black collapsible CTFE ferrule | 5/pk | 5023-1527 |
| Replacement collapsible CTFE ferrules, for 1/16 inch tubing | | 10/pk | 5043-0054 |
| Replacement collapsible CTFE ferrules, for 1/8 inch tubing | | 10/pk | 5043-0055 |
| Fitting, male to barb, 1/4-28 UNF, 3.2 mm id, PEEK, natural | | | 5023-1517 |
| Preconfigured kit, for discrete sampling with the ISIS 3 | Includes a set of sample lines and connectors | | G8411-68201 |
| **ISIS 3 Valve Supplies** | | | |
| Rotor seal replacement kit, for ISIS valve | | | G8411-67111 |
| ISIS valve assembly kit | | | G8411-67113 |
| Gas tubing kit, for ISIS 3 valve | | 3/pk | G8411-67002 |
| ISIS 3-way valve assembly kit | | | G8411-67114 |
| Stator, for 7 port, 2 position inject valve | | | G8411-80121 |

## Integrated Sample Introduction System 3 (ISIS 3) Supplies

| Description | Kit Contents | Unit | Part No. |
|---|---|---|---|
| **ISIS 3 Pump Supplies** | | | |
| Piston pump seal replacement kit | | | G8411-67115 |
| Piston pump seal installation tool kit | | | G8411-67116 |
| ISIS piston pump | | | G8411-80115 |
| Nut, PEEK, for ISIS 3 pump | | 1/pk | G8411-80119 |

## Parts and Supplies Kits for 7700/7800/7900 and 8800/8900

| Description | Kit Contents | Part No. |
|---|---|---|
| Basic consumables kit, for 7700/7900, and 8800 ICP-MS fitted with x-lens, and Edwards E2M18 vacuum pump using AVF Gold* pump oil | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white, 12/pk (G1833-65569), peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue (G1833-65570), peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange, 12/pk (G3280-67047), PFA sample tubing, 0.5 mm id, 1.6 mm od, 5 m (G1820-65105), graphite gaskets for sampling cone, 3/pk (G3280-67009), rough pump oil, AVF Gold*, 1 quart (6040-0834), and torch, quartz, 2.5 mm id (G3280-80053) | G3280-67003 |
| Basic consumables kit, for 7700/7800/7900, and 8800/8900 ICP-MS fitted with x-lens, and vacuum pump using AVF Platinum** pump oil | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white, 12/pk (G1833-65569), peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue (G1833-65570), peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange, 12/pk (G3280-67047), PFA sample tubing, 0.5 mm id, 1.6 mm od, 5 m (G1820-65105), graphite gaskets for sampling cone, 3/pk (G3280-67009), rough pump oil, AVF Platinum** 1 L (X3760-64004), and torch, quartz, 2.5 mm id (G3280-80053) | G3280-67221 |

*(Continued)*

## Parts and Supplies Kits for 7700/7800/7900 and 8800/8900

| Description | Kit Contents | Part No. |
|---|---|---|
| Comprehensive spares, for 7700x/e and 8800 ICP-MS fitted with x-lens, and Edwards E2M18 vacuum pump using AVF Gold* pump oil | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white (2 x 12/pk), peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue, peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange (2 x 12/pk), PFA sample, 0.5 mm id, 1.6 mm od, 5 m, sample inlet tubing (0.5 mm id) for MicroMist nebulizer, online internal standard addition kit, drain tube assembly, spray chamber, spray chamber drain tubing, connector tube with dilution port, dilution gas connector, nebulizer*** gas connector, dilution gas port plug, spray chamber clamps (2/pk), nebulizer*** gas tubing, torch with 2.5 mm id injector, long-life shield plate, bonnet for shield torch, plasma/auxiliary gas tubing with inner sleeve, gas line connector, RF coil, graphite gaskets for sampling cone, 3/pk, Ni sampling cones (2/pk), Ni skimmer cones (2/pk), screw and spacer kit for x-lens, screw and spacer O-ring, PTFE tubing for internal reaction gas line, octopole assembly, polishing paper kit for ion lens (5 sheets No. 400+1200), oil mist filter element and rough pump oil, AVF Gold*, 1 quart, 2/pk (6040-0834) | G3280-67004 |
| Comprehensive spares, for 7700s and 8800 semi-conductor ICP-MS fitted with s-lens, and Edwards E2M18 vacuum pump using AVF Gold* pump oil | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white (2 x 12/pk), peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue, peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange (2 x 12/pk), PFA sample tubes, 0.5 mm id, 1.6 mm od, 5 m, online internal standard addition kit, drain tube assembly, spray chamber, spray chamber drain tubing, connector tube with dilution port, dilution gas connector, nebulizer*** gas connector, dilution gas port plug, spray chamber clamps (2/pk), nebulizer*** gas tubing, torch with 2.5 mm id injector, long-life shield plate, bonnet for shield torch, plasma/auxiliary gas tubes with inner sleeve, gas line connector, RF coil, graphite gaskets for sampling cone (3/pk), Pt sampling cone, Pt skimmer cone, screw and spacer kit for s-lens, screw and spacer O-ring, PTFE tubing for internal reaction gas line, octopole assembly, polishing paper kit for ion lens (5 sheets No. 400+1200), oil mist filter element, and rough pump oil, AVF Gold*, 1 quart, 2/pk (6040-0834) | G3280-67007 |
| Comprehensive spares, for 7700e ICP-MS, and Edwards E2M18 vacuum pump using AVF Gold* pump oil | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white (2 x 12/pk), peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue, peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange (2 x 12/pk), PFA sample tubes, 0.5 mm id, 1.6 mm od, 5 m, sample inlet tubing (0.5 mm id) for MicroMist nebulizer, online internal standard addition kit, drain tube assembly, spray chamber, spray chamber drain tubing, connector rod, nebulizer*** gas connector, spray chamber clamps (2/pk), nebulizer* gas tubing, torch with 2.5 mm id injector, long-life shield plate, bonnet for shield torch, plasma/auxiliary gas tubes with inner sleeve, gas line connector, RF coil, graphite gaskets for sampling cone (3/pk), Ni sampling cones (2/pk), Ni skimmer cones (2/pk), screw and spacer kit for x-lens, screw and spacer O-ring, PTFE tubing for internal reaction gas line, octopole assembly, polishing paper kit for ion lens (5 sheets No. 400+1200), oil mist filter element, and rough pump oil, AVF Gold*, 1 quart, 2/pk (6040-0834) | G3280-67085 |

* "AVF Gold" was formerly termed "Inland 45". The chemical composition of the oil is exactly the same and the part numbers are unchanged.

** "AVF Platinum" was formerly termed "AVF 60 SHCE". The chemical composition of the oil is exactly the same and the part number is unchanged.

***The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)

## Configurable Supplies Kits for 7700/8800 Series

| Description | Kit Contents | Part No. |
|---|---|---|
| For 7700x/e and 8800 ICP-MS systems fitted with x-lens | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white, 2 x 12/pk<br>Peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue, 2 x 12/pk<br>Peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange, 12/pk<br>PFA sample tubing, 0.5 mm id, 1.6 mm od, 5 m<br>EzyFit sample inlet, 0.5 mm id, 10/pk<br>Online internal standard addition kit<br>Drain tubing assembly<br>Spray chamber<br>Tubing for drainage, 4.0 mm id, 2.5 m<br>Quartz connector tube with dilution port<br>Gas connector for dilution gas port<br>Nebulizer EzyLok gas connector<br>Plug for dilution port, 4 mm<br>Clamps for spray chamber, 2/pk<br>Nebulizer/make-up/dilution gas tubing<br>Torch, quartz, 2.5 mm id<br>Long-life Pt shield plate<br>Bonnet for shield torch<br>Plasma/auxiliary gas tubing with inner sleeve<br>Connectors for plasma/auxiliary gas<br>RF coil<br>Graphite gaskets for sampling cone, 3/pk<br>Screw and spacer kit for x-lens<br>Screw/spacer/O-ring for cell<br>PTFE tubing for reaction cell gas<br>Octopole assembly<br>Polishing paper kit for ion lens, 5 sheets, No. 400+1200 | G3690A |

**Then select your preferred skimmer and sampling cones, and oil/filter to suit your application needs by adding one each from the three following options.**

### Option One - Select your sampling cone

| Part No. | Description |
|---|---|
| G3690A#100 | Adds Ni sampling cone (G3280-67040) |
| G3690A#101 | Adds Ni plated sampling cone (G3280-67061) |
| G3690A#102 | Adds Pt sampling cone (G3280-67036) |

### Option Two - Select your skimmer cone

| Part No. | Description |
|---|---|
| G3690A#200 | Adds Ni skimmer cone (G3280-67041) |
| G3690A#201 | Adds Pt sampling cone (G3280-67060)* |

### Option Three - Select the oil/filter element for your vacuum pump

| Part No. | Description |
|---|---|
| G3690A#300 | Adds 2 x Quart AVF Gold** oil, 1 L, (6040-0834) and oil mist filter element (1535-4970) for the Edwards E2M18 vacuum pump |
| G3690A#302 | Adds 2 x AVF Platinum*** oil, 1 L (X3760-64004) and oil mist filter element (9499201) for the Agilent MS40+ vacuum pump |

*Requires the brass skimmer base, p/n G3280-60621, which is not included in the kit

** "AVF Gold" was formerly termed "Inland 45". The chemical composition of the oil is exactly the same and the part numbers are unchanged.

*** "AVF Platinum" was formerly termed "AVF 60 SHCE". The chemical composition of the oil is exactly the same and the part number is unchanged.

## Configurable Supplies Kits for 7900 Series

| Description | Kit Contents | Part No. |
|---|---|---|
| For 7900 ICP-MS systems fitted with x- or s-lens | Peristaltic pump tubes for sample, Tygon, 3-stop, white/white, 2 x 12/pk<br>Peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue<br>Peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange, 2 x 12/pk<br>PFA sample tubing, 0.5 mm id, 1.6 mm od, 5 m<br>Online internal standard addition kit<br>Drain tubing assembly<br>Spray chamber for UHMI<br>Tubing for drainage, 4.0 mm id, 2.5 m<br>Straight quartz connector tube<br>Gas connector for dilution gas port<br>Dilution nozzle for UHMI<br>Plug for dilution port, 4 mm<br>Clamp<br>Torch ball joint connector, 2/pk<br>Nebulizer/make-up dilution gas tubing<br>Torch, quartz, 2.5 mm id<br>Long-life Pt shield plate<br>Bonnet for shield torch<br>Low impurity gas tubing kit<br>Connectors for plasma/auxiliary gas<br>Work coil assembly<br>Graphite gaskets for sampling cone, 3/pk<br>Screw/spacer/O-ring for cell<br>Tubing for reaction cell gas<br>Octopole assembly<br>Polishing paper kit for ion lens, 5 sheets, No. 400+1200<br>Exhaust filter. | G1131A |

**Then select the mandatory option and your preferred skimmer/sampling cones, and pump oil to suit your application needs by adding one each from the four following options.**

### Option One - Select the mandatory option

| Part No. | Description |
|---|---|
| G1131A#100 | Mandatory option for a 7900 with x-lens (adds UniFit sample connector, 0.5 mm id, 10/pk (G3266-80012), nebulizer EzyLok gas connector (G3266-80015), and screw and spacer kit for x-lens (G8400-67003)) |
| G1131A#101 | Mandatory option for a 7900 with s-lens (adds nebulizer gas line connector for MicroFlow nebulizer (G1833-65583), and screw and spacer kit for s-lens (G3280-67038)) |

## Configurable Supplies Kits for 7900 Series

| Description | Kit Contents | Part No. |
| --- | --- | --- |

**Option Two - Select your sampling cone**

| Part No. | Description |
| --- | --- |
| G1131A#200 | Adds Ni sampling cone (G3280-67040) |
| G1131A#201 | Adds Ni plated sampling cone (G3280-67061) |
| G1131A#202 | Adds Pt sampling cone (G3280-67036) |
| G1131A#203 | Adds Pt sampling cone with 18 mm insert (G3280-67056) |

**Option Three - Select your skimmer cone**

| Part No. | Description |
| --- | --- |
| G1131A#300 | Adds Ni skimmer cone for 7900 with x-lens (G8400-67200) |
| G1131A#301 | Adds Pt skimmer cone with Cu base (G8400-67201) and brass skimmer base (G8400-60625) for 7900 with x-lens |
| G1131A#302 | Adds Pt skimmer cone with Ni base (G8400-67202) and brass skimmer base (G8400-60625) for 7900 with x-lens |
| G1131A#303 | Adds Pt sampling cone (G3280-67064) for 7900 with s-lens |
| G1131A#304 | Adds Ni skimmer cone (G3280-67066) and stainless steel skimmer base (G8400-60627) for 7900 with s-lens |

**Option Four - Select the oil for your vacuum pump**

| G1131A#402 | Adds 2 x AVF Platinum* oil, 1 L (p/n X3760-64004) for the Agilent MS40+ vacuum pump |
| --- | --- |

* "AVF Platinum" was formerly termed "AVF 60 SHCE". The chemical composition of the oil is exactly the same and the part number is unchanged.

## Configurable Supplies Kits for 7800 Series

| Description | Kit Contents | Part No. |
|---|---|---|
| For 7800 ICP-MS systems fitted with x-lens | Nebulizer EzyLok gas connector<br>UniFit sample connector, 0.5 mm id, 10/pk<br>Peristaltic pump tubes for sample, Tygon, 3-stop, white/white, 2 x 12/pk<br>Peristaltic pump tubes for waste, Ismaprene, 3-stop, yellow/blue<br>Peristaltic pump tubes for internal standard, Tygon, 2-stop, blue/orange, 2 x 12/pk<br>PFA sample tubing, 0.5 mm id, 1.6 mm od, 5 m, Online internal standard addition kit<br>Drain tubing assembly<br>Spray chamber<br>Tubing for drainage, 4.0 mm id, 2.5 m<br>Quartz connector tube with dilution port<br>Gas connector for dilution gas port<br>Plug for dilution port, 1/8 inch<br>Clamp<br>Torch ball joint connector, 2/pk<br>Nebulizer/make-up dilution gas tubing<br>Torch, quartz, 2.5 mm id<br>Long-life Pt shield plate<br>Bonnet for shield torch<br>Low impurity gas tubing kit<br>Connectors for plasma/auxiliary gas<br>Work coil assembly<br>Graphite gaskets for sampling cone, 3/pk<br>Screw and spacer kit for x-lens<br>Screw/spacer/O-ring for cell<br>Tubing for reaction cell gas<br>Octopole assembly<br>Polishing paper kit for ion lens, 5 sheets, No. 400 + 1200<br>Exhaust filter<br>Rough pump oil, AVF Platinum*, 1 L, 2/pk | M5141A |

**Then select the mandatory option and your preferred skimmer/sampling cones, and ion lenses to suit your application needs by adding one each from the three following options.**

**Option One – Select your sampling cone**

| Part No. | Description |
|---|---|
| M5141A#100 | Adds Ni sampling cone (G3280-67040) |
| M5141A#101 | Adds Ni plated sampling cone (G3280-67061) |
| M5141A#102 | Adds Pt sampling cone (G3280-67036) |
| M5141A#103 | Adds Pt sampling cone with 18 mm insert (G3280-67056) |

**Option Two – Select your skimmer cone**

| Part No. | Description |
|---|---|
| M5141A#200 | Adds Ni skimmer cone (G3280-67041) |
| M5141A#201 | Adds Pt skimmer cone (G3280-67060) and brass skimmer base (G3280-60621) |
| M5141A#202 | Adds Pt skimmer cone with Ni base (G3280-67063) and brass skimmer base (G3280-60621) |

**Option Three – Select your foreline pump type**

| Part No. | Description |
|---|---|
| M5141A#300 | Adds oil mist filter element, DS402 pump |
| M5141A#301 | Adds oil mist filter element, MS40+ pump |

* "AVF Platinum" was formerly termed "AVF 60 SHCE". The chemical composition of the oil is exactly the same and the part number is unchanged.

## Configurable Supplies Kits for 8900 Series

| Description | Kit Contents | Part No. |
|---|---|---|
| For 8900 ICP-MS systems fitted with x- or s-lens | Peristalitc pump tube, Tygon, 3-stop, wht/wht, 2 x 12/pk (for sample intro)<br>Peristalitc pump tube, Ismaprene, 3-stop, yel/blu, 12/pk (for SC drain)<br>Peristalitc pump tube, Tygon, 2-stop, blu/org flared, 2 x 12/pk (for internal standard)<br>PFA sample tubing, 0.5 mm id, 1.6 mm od, 5 m length<br>Online internal standard addition kit, ICP-MS<br>Drain tubing assembly, for ICP-MS<br>Tubing, for drainage, 4.0 mm id, 2.5 m<br>Clamp, torch ball joint connector, 2/pk<br>Nebulizer/make-up/dilution gas tubing (1 each)<br>Torch quartz, 2.5 mm id, for ICP-MS<br>Shield plate, long life, ICP-MS<br>Bonnet quartz, for shield torch<br>Plasma/auxiliary low impurity gas tubing kit (with inner sleeves)<br>Connectors for plasma and auxiliary gas, 1 each<br>Work coil assembly, for ICP-MS<br>Work coil assembly, for ICP-MS<br>Graphite gasket, for sampling cone, 3/pk<br>Tubing, for reaction cell gas<br>Polishing paper kit No. 400 + 1200 (5 sheets each)<br>Exhaust filter, MS 40+ rotary vane pump<br>2 x AVF Platinum* oil, 1 L bottle | G1091A |

**Then select the mandatory option and your preferred skimmer/sampling cones, and ion lenses to suit your application needs by adding one each of the four following options.**

### Option One

| | | |
|---|---|---|
| G1091A#100 | Mandatory option for 8900 with x-lens | |
| 1 | UniFit sample connector | G3266-80012 |
| 1 | Gas connector, for nebulizer | G3266-80017 |
| 1 | Screw and spacer kit | G8400-67003 |
| 1 | Spray chamber, with UHMI | G8400-67150 |
| 1 | Dilution nozzle, UHMI, 7900, ICP-MS | G8400-67026 |
| 1 | Gas connector, dilution gas port, 8900 | 0100-2703 |
| 1 | Blank plug for dilution port, PTFE, 8900 | G3666-20391 |
| G1091A#101 | Mandatory option for 8900 with s-lens (semicon) | |
| 1 | Nebulizer** gas line connector | G1833-65583 |
| 1 | Screw and spacer kit | G3666-67038 |
| 1 | Spray chamber, without UHMI | G3280-80008 |

*(Continued)*

## Configurable Supplies Kits for 8900 Series

| Description | Kit Contents | Part No. |
|---|---|---|
| **Option Two** | | |
| G1091A#200 | Adds sampling cone, Ni | G3280-67040 |
| G1091A#201 | Adds sampling cone, Ni plated | G3280-67061 |
| G1091A#202 | Adds sampling cone, Pt | G3280-67036 |
| G1091A#203 | Adds sampling cone, Pt, 18 mm insert | G3280-67056 |
| **Option Three** | | |
| G1091A#300 | Skimmer cone (Ni) for 7900/8900 with x-lens | G8400-67200 |
| G1091A#301 | Skimmer cone (Pt/Cu) for 7900/8900 with x-lens and skimmer base, brass, for 8900 with x-lens (G3666-60311) | G8400-67201 |
| G1091A#302 | Skimmer cone (Pt/Ni), for 7900/8900 with x-lens and skimmer base, brass, for 8900 with x-lens (G3666-60311) | G8400-67202 |
| G1091A#303 | Skimmer cone (Ni) for 8900 with s-lens | G3666-67421 |
| G1091A#304 | Skimmer cone (Pt/Cu) for 8900 with s-lens | G3666-67401 |
| G1091A#305 | Skimmer cone (Pt/Ni) for 8900 with s-lens | G3666-67411 |
| **Option Four** | | |
| G1091A#400 | Mandatory option for an 8900 with ORS$^3$ without acceleration | |
| 1 | Octopole assembly without acceleration, for 8900 | G3666-67046 |
| 1 | Screw/spacer/O-ring, for 8900 non-AA cell | G3666-67044 |
| 1 | Quartz connector tube straight | G3270-80025 |
| G1091A#401 | Mandatory option for an 8900 with ORS3 with axial acceleration | |
| 1 | Octopole assembly with axial acceleration, for 8900 | G3666-67045 |
| 1 | Screw/spacer/O-ring, for 8900 AA cell | G3666-67049 |
| 1 | Quartz connector tube, dilution, HMI kit | G3270-80024 |
| 1 | Plug, for dilution port | G3280-20576 |
| 1 | Gas connector, for dilution gas port | 0100-2583 |

* "AVF Platinum" was formerly termed "AVF 60 SHCE". The chemical composition of the oil is exactly the same and the part number is unchanged.

**The term carrier gas has been replaced with nebulizer gas for ICP-MS (from July 2017)

### GC Interface Supplies for 7500 Series

| Description | Part No. |
| --- | --- |
| Injector assembly | G3158-65001 |
| Torch | G3158-65007 |
| Stainless steel pipe (Sulfinert) for GC-ICP-MS interface, 1/16 inch | G3158-65003 |

### GC Interface Supplies for 77/78/7900 and 8900 Series

| Description | Part No. |
| --- | --- |
| Transfer line for GC interface | G3158-80060 |
| Injector assembly for GC interface | G3158-80150 |
| Torch for GC interface | G3158-80074 |
| Pre-heating pipe with connector, stainless steel, 1/16 inch | G3158-80080 |
| Stainless steel pipe, 1/16 inch (Sulfinert, 1.05 m) | G3158-80081 |
| Polyimide/graphite reducing ferrule (1/8 to 1/16 inch, VG1, 10/pk) | 0100-1344 |
| Polyimide/graphite ferrule (1/4 inch, VG1, 10/pk) | 0100-1331 |
| Polyimide/graphite ferrule for 320 µm columns (0.5 mm, VG1, 10/pk) | 5062-3506 |
| Polyimide/graphite ferrule (1/16 inch, VG2, 10/pk) | 0100-1379 |
| PFA tubing, 1/8 inch, 2 m | G3158-60010 |
| Three-way manual valve | G3158-80024 |
| Swagelok plug, stainless steel, 1/8 inch | 0100-0071 |
| Nut with pipe | G3158-80009 |
| Stainless steel tee for $O_2$ gas mix, 1/8 inch | 0100-0542 |

**Speciation Columns and Supplies**

| Description | Kit Contents | Part No. |
|---|---|---|
| As speciation column for drinking water | | G3154-65001 |
| As speciation column for urine | | G3288-80000 |
| As speciation guard column | | G3154-65002 |
| Cr speciation column for drinking water | | G3268-80001* |
| Comprehensive LC connection kit | Suitable for LC-ICP-MS applications other than Cr in water and As in water/urine. This is a comprehensive pack of tubing and connectors required to set up LC-ICP-MS.<br>Includes sample tubing (PFA, 0.15 mm id, 0.7 m, 5/pk; PTFE, 0.8 mm id, 0.5 m; PTFE, 2.0 mm id, 5 m); peristaltic pump tubing, Tygon, 3-stop, 0.89 mm id, 12/pk; T-joint, 2/pk; union joint, 5/pk; PTFE nut for 3 mm od tubing, 10/pk; front and back ferrules for 3 mm od tubing, 10/pk; PTFE nut for 1.6 mm od tubing, 10/pk; front and back ferrules for 1.6 mm od tubing, 10/pk; peri-pump tubing adapters, 2/pk; APG remote cable; gender changer connector D9S-FF; manual/setup guide | G1833-65200 |
| Basic LC connection kit | Includes sample tubing (PFA, 0.3 mm id, 1.6 mm od, 3 m); union joints, 2/pk; PEEK finger-tight fitting, 3/pk; 10-32 male nut, 1/16 inch, 2/pk; APG remote cable; gender changer connector D9S-FF | G1820-65541 |
| Total consumption nebulizer for capillary LC interface | | G3280-80602 |
| Single-pass spray chamber for capillary LC interface | | G3280-80603 |

*Cr speciation handbook, p/n G3268-90001

Strainer for cooling water, G1833-67024

## Miscellaneous Supplies

| Description | Part No. |
|---|---|
| 7700 maintenance video DVD | G3280-60910 |
| 7800/7900/8900 maintenance video DVD | G8400-60921 |
| Agilent ICP-MS eFamiliarization video DVD | G8400-60934 |
| Cooling water hose, 10 m | G1820-65020 |
| Strainer for cooling water | G1833-67024 |
| Poly-clear fluid for G3292A chiller | G3292-80010 |
| Fluid filter for G3292A chiller | G3292-80109 |
| Air filter for G3292A chiller | G3292-80112 |
| Filter for cooling water for 7500 Series | G1820-65018 |
| Water filter connector for Agilent ICP-MS | 5069-4524 |
| O-ring for water filter cartridge for 7500 Series | G1833-66042 |

# Gas Line Supplies

## Gas Line Supplies

| Description | Specifications | Use | Unit | 77/78/79/88/8900 Part No. | 7500 Part No. |
|---|---|---|---|---|---|
| Tubing, plasma/auxiliary gas, with inner sleeve | 0.2 m | For 7700 only | 2/pk | G3280-67023 | |
| Tubing, plasma/auxiliary gas, with inner sleeve | 0.2 m | For 78/79/88/8900 Series | 2/pk | G3660-67040 | |
| Connectors, PTFE, for plasma and auxiliary gas lines | 6 mm and 4 mm | For gas line connection to torch | | G1820-65027 | G1820-65027 |
| Inner sleeve, for nebulizer*/auxiliary/blend gas line | CTFE | For gas line connection to connector | 5/pk | | 5042-0922 |
| Inner sleeve, for plasma gas line | CTFE | For gas line connection to connector | 5/pk | | 5042-0923 |
| Tubing, for nebulizer*/make-up/dilution gas | | | | G3280-67022 | |
| Gas connector, for dilution gas port | | For dilution gas line connection to dilution port | | 0100-2583 (77/8800) | |
| Gas connector, for dilution gas port | | For dilution gas line connection to dilution port | | 0100-2703 (79/8900) | |
| Dilution nozzle, for ultra high matrix introduction | | For 7900/8900 | | G8400-67026 | |
| Argon gas tubing kit | | For external line | | | G1820-65023 |
| Tubing, PTFE, for nebulizer*/blend gas | 3 mm id, 4 mm od, 35 cm | For gas line connection to nebulizer | 2/pk | | G1833-65414 |
| Tubing, plasma and auxiliary gas line | 3.17 mm id, 6.35 mm od, 35 cm (plasma) 2.38 mm id, 3.96 mm od, 35 cm (aux) | For gas line connection to torch | 2/pk | | G3270-65021 |
| Argon humidifier, for 75/77/8800 Series | | | | G3270-80029 | G3270-80029 |
| Argon humidifier bottle, for 78/79/8900 Series | | | | G8400-60700 | |
| Tubing kit for Argon Humidifier used with 78/79/8900 Series | | | | G8400-60710 | |
| Argon gas filter | | | | G1820-80341 | G1820-80341 |
| Argon clean gas filter | | For semicon applications | | 5064-8092 | 5064-8092 |
| Argon gas tubing kit, for 7700x/e and 7900 | | For external line | | G3280-60160 | |

*(Continued)*



Plasma/aux tubing with inner sleeve, G3280-67023



Connectors for plasma/aux, G1820-65027



Nebulizer/make-up/dilution gas tubing, G3280-67022

## Gas Line Supplies

| | | | | |
|---|---|---|---|---|
| Argon gas tubing kit, for 7700s, 8800 and 7900 with semiconductor option | | For external line | G3280-60163 | |
| Tubing, stainless steel | 1/8 inch od, 6 m | For external cell gas line | G3270-65035 | G3270-65035 |
| Gas tubing set, for Argon gas purifier (Big Universal Trap) | | For 8900 only | G3666-67026 | |
| Big Universal Trap, 1/8 inch fittings, Argon, 750 cc (Ar gas filter set installed on the back panel of 8900 only) | | 1/pk | RMSA-2 | RMSA-2 |

*The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)



Replacement Agilent Gas Clean nebulizer gas filter, P17973

## Ultra Clean ICP-MS Traps

| Description | Part No. |
|---|---|
| Replacement Agilent Gas Clean nebulizer* gas filter | CP17973 |
| O-rings, FPM, Gas Clean connecting unit, 2/pk | CP7983 |

*The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)

## High Purity Gas Regulators – US only

| Description | Comments | Part No. |
|---|---|---|
| Regulator for helium | 2-stage regulator with stainless steel body and stainless steel diaphragms. Maximum inlet pressure 3000 psi. Maximum delivery pressure 15 psi with 0–30 psi outlet gauge and 1/8 inch compression tube fitting outlet. Supplied with wall mounting bracket including 36 inch stainless steel lined pigtail with check valve and CGA580 cylinder connection. | 0101-1398 |
| Regulator for hydrogen | 2-stage regulator with stainless steel body and stainless steel diaphragms. Maximum inlet pressure 3000 psi. Maximum delivery pressure 15 psi with 0–30 psi outlet gauge and 1/8 inch compression tube fitting outlet. Supplied with wall mounting bracket including 36 inch stainless steel lined pigtail with check valve and CGA350 cylinder connection. | 0101-1399 |
| Regulator for argon | 2-stage regulator with stainless steel body and stainless steel diaphragms. Maximum inlet pressure 3000 psi. Maximum delivery pressure 100 psi with 0–200 psi outlet gauge and 1/4 inch FPT outlet. Supplied with wall mounting bracket including 36 inch stainless steel lined pigtail with check valve and CGA580 cylinder connection. | 0101-1400 |
| Regulator for $NH_3$/He | 2-stage regulator with stainless steel body and stainless steel diaphragms. Maximum inlet pressure 3000 psi. Maximum delivery pressure 15 psi with 0–30 psi outlet gauge and 1/4 inch FPT outlet. Supplied with wall mounting bracket including 36 inch stainless steel lined pigtail with check valve and CGA705 cylinder connection. | 5188-5374 |

## Gas Regulators – US only

| Description | Comments | Part No. |
|---|---|---|
| Regulator for helium | 2-stage regulator with brass body, stainless steel diaphragms and PTFE seal. CGA580 inlet with maximum inlet pressure 3000 psi. Maximum delivery pressure 15 psi with 0–30 psi outlet gauge and 1/8 inch Swagelok outlet fitting. | 0101-1536 |
| Regulator for hydrogen | 2-stage regulator with brass body, stainless steel diaphragms and PTFE seal. CGA350 inlet with maximum inlet pressure 3000 psi. Maximum delivery pressure 15 psi with 0–30 psi outlet gauge and 1/8 inch Swagelok outlet fitting. | 0101-1537 |
| Regulator for oxygen | 2-stage regulator with brass body, stainless steel diaphragms and PTFE seal. CGA540 inlet with maximum inlet pressure 3000 psi. Maximum delivery pressure 15 psi with 0–30 psi outlet gauge and 1/8 inch Swagelok outlet fitting. | 0101-1535 |

PTFE connector, G1820-65214



Polypropylene connector, G1820-65052



Connector for blend gas line, G1820-65119

## Gas Line Connectors for 7500 Series

| Description | Specifications | Use | Part No. |
|---|---|---|---|
| Connector for end cap and gas line | | For gas line connection to nebulizer | 5063-5263 |
| Connectors, PTFE, for plasma and auxiliary gas lines | 6 mm and 4 mm | For gas line connection to torch | G1820-65027 |
| Connector for nebulizer* gas line, PTFE | 4 mm tubing, includes ferrule and O-ring | For gas line connection to Babington nebulizer | G1820-65214 |
| Connector for nebulizer* gas line, polypropylene | 4 mm tubing, includes ferrule and O-ring | For gas line connection to concentric nebulizer | G1820-65052 |
| Connector for blend gas line, polypropylene, 2/pk | 4 mm tubing | For gas line connection to CrossFlow/Babington nebulizer | G1820-65119 |
| Connector for make-up gas line, polypropylene | 4 mm tubing, Luer type | For gas line connection to CrossFlow/Babington nebulizer | G1833-65477 |
| Union fitting | 4 mm tubing | For PFA concentric nebulizer | 5064-8078 |

*The term "carrier gas" has been replaced with "nebulizer gas" for ICP-MS (from July 2017)

# Autosampler Supplies

## SPS 4 Autosampler Supplies

The next-generation SPS 4 is a high-performance autosampler for atomic spectroscopy applications. Designed to meet the needs of high-throughput laboratories requiring a fast, high-capacity (up to 360 samples or 768 microtiter wells), reliable autosampler. Small, quiet, easy-to-use, and affordable, the SPS 4 is suitable for ultratrace analysis by ICP-MS and rugged and robust enough for FAAS, MP-AES, and ICP-OES users.

Built around an innovative gantry design that supports the mechanical components between two rigid pillars, the SPS 4 provides improved accuracy and precision, high speed, ease of access, and corrosion resistance. All contained within a footprint that is nearly 40 % smaller than other autosamplers in its class.

### SPS 4 Autosampler Probes

| Description | Notes | Part No. |
|---|---|---|
| SPS 4 probe, 0.25 mm id, red markers, inert, FEP sleeved, | Recommended when using the Agilent SPS 4 autosampler with ICP-MS instruments | G8410-80100 |
| SPS 4 probe, 0.5 mm id, yellow markers, inert, FEP sleeved | Recommended when using the Agilent SPS 4 autosampler with ICP-MS instruments | G8410-80101 |
| SPS 4 probe, 0.8 mm id, green markers, inert, FEP sleeved | Recommended when using the Agilent SPS 4 autosampler with AA, ICP-OES, MP-AES, and ICP-MS instruments | G8410-80102 |
| SPS 4 probe, 1.0 mm id, blue markers, inert, FEP sleeved | Recommended when using the Agilent SPS 4 autosampler with AA, ICP-OES, and MP-AES instruments | G8410-80103 |
| SPS 4 probe, 1.2 mm id, black markers, inert, FEP sleeved | Recommended when using the SPS 4 autosampler with AA, ICP-OES, and MP-AES instruments with viscous solutions and high matrix samples | G8410-80104 |

## Miscellaneous SPS 4 Tubing

| Description | Notes | Part No. |
|---|---|---|
| Flexible ducting, PVC, 50 mm id, for SPS 4 autosampler, 5 m length | Spare ducting to enable removal of fumes from the autosampler with the cover fitted. Fitted with 56mm od cuffs. | 5043-0065 |
| Waste tubing, PVC, for SPS4, 8 mm od, 5 mm id, 2 m length | Replacement tubing to connect from waste outlet of rinse station of SPS 4 autosampler | G8410-80122 |
| Tubing, for supply of rinse solution to rinse station of SPS 4, 2.5 mm id, 1 m length | Replacement tubing to connect from rinse solution supply to inlet of rinse station of SPS 4 autosampler | G8410-80123 |
| Tubing, solvent-resistant, 2.36 mm (0.093 inch) id, 2 m length | Replacement tubing for inlet solvent line to rinse station of SPS 4 autosampler. Allows use of low volatile organic solvents in rinse station | G8410-20012 |
| Tubing, solvent-resistant, 4.75 mm (0.187 inch) id, 2 m length | Replacement tubing for waste solvent outlet of rinse station of SPS 4 autosampler. Allows use of low volatile organic solvents in rinse station | G8410-20013 |

## SPS 4 Autosampler Probe Compatibility

| Probe Type | Flame AAS | MP-AES | ICP-OES | ICP-MS |
|---|---|---|---|---|
| 0.25 mm id | | | | ✓ |
| 0.5 mm id | | | | Standard |
| 0.8 mm id | Standard | Standard | Standard | ✓ |
| 1.0 mm id | ✓ | ✓ | ✓ | ✓ |
| 1.2 mm id | ✓ | ✓ | ✓ | |
| ✓ Compatible part | | | | |

### SPS 4 Standard Racks and Compatible Vessels

| Description | Comments | Part No. |
|---|---|---|
| Standards rack, 34 position, for SPS 4 autosampler | Rack provides 12 positions for 50 mL, 30 mm od, centrifuge tubes plus 22 positions for 18 mm od test tubes. Standard rack for AA/MP-AES and ICP-OES configuration (not supported with the ICP-MS MassHunter software) | G8410-40000 |
| Standards rack, 5 position, for SPS 4 autosampler | Rack provides five positions for 250 mL, 60 mm od, narrow neck sample containers. Standard rack for ICP-MS configuration (not supported with the atomic absorption SpectrAA software) | G8410-40001 |
| Sample bottle, 250 mL, for 5 x 60 mm standard rack | Narrow neck, 60 mm od, LDPE, for five position standard rack used with SPS 4 autosampler | 5043-0064 |

### Optional Update Kits for the SPS 4

| Description | Comments | Part No. |
|---|---|---|
| High uptake volume rinse kit, for SPS 4 | Recommended for use with the AVS 6/7, SVS 2+, or ISIS 3. Allows rinse uptake rate to be increased to 25mL/min. Includes sample quantity wide bore peristaltic pump tubing with purple/black tabs (four pump tubes only), barb connectors, and PTFE tubing 2 m | G8410-68260 |
| SPS 4 rinse tube kit, for low volatile organics | Allows use of low volatile organic solvents in rinse station. Includes capillary tubing 1 m, sample quantity of 3-bridged grey/grey PVC Solvaflex peristaltic pump tubing (four pump tubes only), barb connector 2.5–1.5 mm, and solvent-resistant tubing for solvent inlet and waste outlet from the rinse station | G8410-68261 |
| Pump drain kit for SPS 4 autosampler | Provides the components required to allow the liquid overflow to be pumped from the rinse station. Includes sample quantity of wide bore peristaltic pump tubing with purple/white tabs (four pump tubes only), barb connectors, and PVC Solvaflex tubing 2.5 m to enable connection to a remote pump (not supplied) | G8410-68262 |
| SPS 4 Autosampler cover kit | Encloses the autosampler to help reduce sample and standard contamination from dust and drafts. Provision for optional purge or exhaust connection to remove corrosive or solvent fumes (requires but does not include the ducting hose, p/n 5043-0065, which should be ordered separately) | G8410-60100 |

## Optional Update Kits for the SPS 4 used with ICP-MS (Only)

| Description | Comments | Part No. |
|---|---|---|
| Well plate startup kit for SPS 4 | Allows sampling from deep well 96 well plates. Includes well plates 10/pk, well plate adapter, and sample probe. Supported when using MassHunter software with the ICP-MS | G8410-68270 |
| Microflow nebulizer PFA (200) with SPS 4 probe kit | Microflow PFA(200) nebulizer, with integrated probe for SPS 4 autosampler, flow rate 200 µL/min, sample uptake tube ends as a sampling probe. Used with 7700,7800,7900, and 8800 Series ICP-MS for high purity and hydrofluoric acid samples. | G3139-68000 |
| Nebulizer probe mount kit for SPS 4 autosampler | Required to mount a nebulizer-integrated sample probe (supplied separately) onto the probe arm of the SPS 4 autosampler. Note, order G3139-68000 if ordering the PFA nebulizer together | G8410-60180 |

## Well Plate Supplies for use with SPS 4 (ICP-MS)

| Description | Comments | Part No. |
|---|---|---|
| Well plate tray adaptor kit for SPS 4 | Allows 96 position deep-well plates to be positioned on the sample tray of the SPS 4 autosampler (raises the height of the well plate on the autosampler). Requires, but does not include the sample probe. | G8410-40003 |
| SPS 4 sample probe, suits SPS 4 microtiter tray | Required when using the SPS 4 autosampler with microtiter tray for sampling from a 96 position well plate. Requires, but does not include the well plate tray adaptor kit or any compatible well plates. | G8410-80105 |
| Well plates, 96 position, 0.5 mL, polypropylene, 10/pk | Spare well plates suitable for use with the SPS 4 autosampler when using the optional microtiter tray for sampling from a 96 position well plate. | 5042-1386 |
| Well plates, 96 position, 0.5 mL, polypropylene 120/pk | Spare well plates suitable for use with the SPS 4 autosampler when using the optional microtiter tray for sampling from a 96 position well plate. | 5042-1385 |

**Miscellaneous SPS 4 Supplies**

| Description | Comments | Part No. |
|---|---|---|
| Single port fixed wash reservoir for SPS 4 | | G8410-60140 |
| Dual port fixed wash reservoir for SPS 4 | | G8410-60150 |
| Standard rack location mat for SPS 4 | | G8410-80111 |
| Spill tray kit for SPS 4 autosampler | | G8410-80605 |
| Tube anchor for SPS 4 autosampler, 2/pk | Secures transfer tubing from probe to instrument on arm of probe carriage to eliminate tangling. | G8410-40004 |
| Cable ducting for SPS 4 autosampler | | G8410-40005 |
| Barb connector, straight through, 4.8–2.4 mm id | | 0100-2846 |
| Barb connector, straight-through, 2.4 mm id | | 0100-2848 |
| Nipple, 5 mm id, PVDF, SPS 4 rinse station | Replacement nipple for outlet waste from rinse station of SPS 4 autosampler. | G8410-80120 |
| Nipple, 2.5 mm id, polypropylene, SPS 4 rinse station | Replacement nipple for inlet rinse supply to rinse station of SPS 4 autosampler. | G8410-80121 |
| Barb connector, 2.5 mm–1.5 mm id, for SPS 4 | Straight-through connector for rinse tube kit used with low volatile organics when using low volatile organic solvents in SPS 4 rinse station. | G8410-80124 |
| Cable ties, natural, polypropylene, 10/pk | | G8410-67001 |

# SPS 3 Autosampler Supplies

The fast spectroscopy autosampler from Agilent meets the diverse requirements of high-throughput analytical laboratories.

### SPS 3 Start-up and Operating Supplies Kit

| Description | Kit Quantity | Unit | Part No. |
|---|---|---|---|
| SPS 3 start-up and operating supplies kit | | | 190065400 |
| **Kit Contents** | | | |
| 0.8 mm id inert probe, PTFE-sleeved | 1 | each | 9910111900 |
| Pump tubing, PVC Solvaflex, 3-bridged, gray/gray | 2 | 12/pk | 3710049000 |
| Silicon tubing, 1 mm id, 3 mm od | 1 | each | 3710026400 |
| Tubing, 1/8 inch id, 1/4 inch od,1/16 inch wall, per m | 2 | meter | 3710031500 |
| Nebulizer capillary tubing, per m | 2 | meter | 2410020500 |
| Rinse reservoir, 10 L | 1 | each | 6610011800 |
| Polypropylene tubes, 16 mm od | 1 | 1,000/pk | 190049700 |
| Sample rack for 30 mm od tubes, 21 positions | 3 | each | 6610026600 |
| Centrifuge tubes, screw-capped, 29 mm od, 50 mL polypropylene | 1 | 500/pk | 190065200 |



SPS 3 Autosampler for AA, MP-AES, ICP-OES, and UV-Vis instruments

Autosampler cover, 910245400

## Optional Accessories for SPS 3

| Description | Comments | Part No. |
|---|---|---|
| Autosampler cover, transparent | Prevents contamination of samples and standards from dust and drafts Has provision for optional purge connection and/or exhaust outlet to enable removal of corrosive or solvent fumes | 910245400 |
| Exhaust port connection | Installs on rear panel of cover and allows safe removal of corrosive or solvent fumes; suitable for connection to 2 inch (50 mm) diameter exhaust ducting | 9910130600 |



0.8 mm id inert probe, PTFE-sleeved, 9910111900

## SPS 3 Autosampler Probes

| Description | Comments | Part No. |
|---|---|---|
| 0.8 mm id inert probe, PTFE-sleeved | For use with MP-AES and ICP-OES instruments without diluter | 9910111900 |
| 1.0 mm id inert probe, PTFE-sleeved | For use with AA, MP-AES, ICP-OES, and UV-Vis instruments (or diluter) | 9910112000 |
| 1.3 mm id inert probe, PTFE-sleeved | For use with viscous solutions and high matrix samples | 9910130900 |
| 1.2 mm id inert, carbon fiber probe | For use with strong acid digests Straighter than a PTFE probe with good rigidity, meaning less chance of damage if it hits a tube Replacement probe only Requires carbon fiber update kit to be fitted | G8480-80002 |
| Carbon fiber probe update kit | Allows installation of a carbon fiber probe in place of a standard PTFE probe. Includes 3.0 mm od x 1.2 mm id carbon fiber probe, mounting block, nut and ferrule, 1.5 m x 0.8 mm id FEP sample tubing, cable ties, and tube anchors | G8480-80001 |

## Standard Racks for SPS 3 Autosampler

| Description | Part No. |
|---|---|
| Standard rack for 16 mm od tubes, 11 positions | 810166900 |
| Standard rack for 29 mm od tubes, 6 positions | 810167000 |
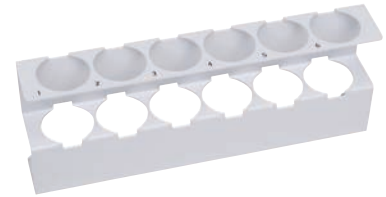
Standard rack for 29 mm od tubes, 810167000

## Diluter Spares

| Description | Kit Contents | Part No. |
|---|---|---|
| Syringe, 20 mL | | 4710003000 |
| Replacement tubing kit for auto diluter, screw fittings | Includes all tubing and connectors | 9910083100 |
| Rinse reservoir, 10 L | | 6610011800 |

Rinse reservoir, 6610011800

## Miscellaneous SPS 3 Supplies

| Description | Use With | Part No. |
|---|---|---|
| Tubing, 1/8 inch id, 1/4 inch od,1/16 inch wall, per m | For outlet rinse vessel | 3710031500 |
| Silicon tubing, 1 mm id, 3 mm od | For connecting nebulizer capillary to SPS probe line | 3710026400 |
| Replacement spill tray | | 6610025100 |

Replacement spill tray, 6610025100

# Integrated Autosampler (I-AS) Supplies

The integrated autosampler (I-AS) for ICP-MS is ideal for ultratrace analysis and small sample volumes (as low as 0.5 mL). It features a pumped rinse station and offers flexible rack configurations with a maximum capacity of 89 vials, plus three rinse vials. (Not compatible with Agilent AA, MP-AES, and ICP-OES instruments).

Tray B, 53-position for 18 mL vials, polypropylene, G3160-80061

Peristaltic pump tubing set with connectors, G3160-65326

## Integrated Autosampler (I-AS) Supplies

| Description | Unit | Common Part No. |
|---|---|---|
| Tray A, 89-position, for 6 mL vials, polypropylene | | G3160-80060 |
| Tray B, 53-position, for 18 mL vials, polypropylene | | G3160-80061 |
| Tray C, 18-position for 50 mL vials, polypropylene | | G3160-80062 |
| Tray D, 79 x 2 mL + 10 x 18 mL positions, polypropylene | | G3160-80063 |
| Tray E, 79 x 6 mL + 10 x 18 mL positions, polypropylene | | G3160-80064 |
| Tray F, 15-position, for use in special semiconductor applications, holds 15 vials of up to 48 mm od x 55 mm high, polypropylene | | G3160-80065 |
| Tray G, 28-position, for 20 mL PFA vials of up to 28 mm od, 58 mm tall, polypropylene | | G3160-80066 |
| Vial, PFA, 1.5 mL, for use with Tray D | 10/pk | G3160-65317 |
| Vial, polypropylene, 6 mL, for use with tray A and E | 200/pk | G3160-65303 |
| Vial, polypropylene, 18 mL, for use with tray B, D, and E | 55/pk | G3160-65304 |
| Vial, polypropylene, 50 mL, for use with tray C | 20/pk | G3160-65305 |
| Vial, polyethylene, 2 mL, for use with tray D | 200/pk | G3160-65315 |
| Needle, PFA, 0.3 mm id, standard probe | | G3160-65306 |
| Rinsing bottle, 100 mL | 6/pk | G3160-65307 |
| Tray cover | | G3160-65321 |
| Rinse fluid inlet/outlet tubing (for I-AS with diaphragm pump) | | G3160-65320 |
| Needle, PFA, 0.8 mm id, for use with the ISIS | | G3160-65324 |
| Tubing holder, PEEK, for use with MicroFlow nebulizer (without a sampling probe) and 2 mL vials | | G3160-65325 |
| Needle holder | | G3160-80041 |
| Holder, for carry tray cover | | G3160-60015 |
| Peristaltic pump tubing set with connectors | 1 set | G3160-65326 |
| Peristaltic pump tubing set with connectors | 5/pk | G3160-65327 |
| Drain tubing, Tygon, from peristaltic pump to rinse bottle or drain bottle | 2/pk | G3160-65328 |
| Serial-USB converter cable, for use with G7201A MassHunter | | G3160-80200 |
| I-AS table, for 7900 | | G3160-60016 |

# ASX-500 Series Autosampler Supplies

The ASX-500 Series autosampler is fully automated, making it ideal for medium to high sample throughput applications. It features a pumped rinse station and offers flexible rack configurations with a maximum capacity of four racks providing up to 360 vial positions with 5 x 250 mL bottle positions and bottles for rinse and tune solutions.



ASX-520 Autosampler

## ASX-500 Series Autosampler Supplies

| Description | Common Part No. |
|---|---|
| Sample rack, 21-position, 50 mL vials | G3286-80103 |
| Sample rack for 25 mm od tubes, 24 positions | 6610026500 |
| Sample rack for 20 mm od tubes, 40 positions | 6610025500 |
| Sample rack, 60-position, 14 mL vials | G3286-80106 |
| Sample rack for 13 mm od tubes, 90 positions | 6610026400 |
| Sample probe, 0.8 mm id (red band) | G3286-80100 |
| Sample probe, 0.3 mm id (black band) | G3286-80101 |
| Sample probe, 0.5 mm id (blue band) | G3286-80102 |
| Carbon fiber sample probe, 0.8 mm id (red band) | G3286-80110 |
| Carbon fiber sample probe, 0.3 mm id (black band) | G3286-80111 |
| Carbon fiber sample probe, 0.5 mm id (blue band) | G3286-80112 |
| Carbon fiber sample probe, 1.0 mm id (2 blue bands) For use with G3286-80300 Z-drive assembly | G3286-80119 |
| Rinse/drain tubing hookup kit | G3286-80117 |
| Drain pump tubing and connector kit (Tygon) | G3286-80118 |
| Z-axis drive assembly with nylon cable, PEEK, antikink | G3286-80330 |
| Rinse station | G3286-80224 |
| USB 2.0 cable, 10 feet, for use with G7201A MassHunter | G1680-63720 |



Sample rack, 60-position, G3286-80106



Sample probe, G3286-80102



Drain pump tubing and connector kit (Tygon), G3286-80118



Rinse station, G3286-80224

Sample rack, 6610025400 (shown with the optional rack overlay kit, p/n 6610026100, fitted)



Rack overlay for 60-position sample rack, 6610026100



Pump tubing, PVC Solvaflex, 3710049000

# Common Autosampler Supplies

### Racks for SPS 3/4 and ASX 500 Autosamplers

| Description | Part No. |
|---|---|
| **Sample Racks** | |
| Sample rack for 13 mm od tubes, 90 positions | 6610026400 |
| Sample rack for 16 mm od tubes, 60 positions | 6610025400 |
| Sample rack for 20 mm od tubes, 40 positions | 6610025500 |
| Sample rack for 25 mm od tubes, 24 positions | 6610026500 |
| Sample rack for 30 mm od tubes, 21 positions | 6610026600 |
| **Rack Overlays for Sample Racks** | |
| Rack overlay for 60-position sample rack<br>Allows 13 mm od tubes to be used in 60-position rack (2 recommended per rack) | 6610026100 |
| Rack overlay for 40-position sample rack<br>Allows 18 mm od tubes to be used in 40-position rack (2 recommended per rack) | 6610026000 |

### Peristaltic Pump Tubing for SPS 3/4

| Description | Use With | Part No. |
|---|---|---|
| Peristaltic pump tubing, PVC Solvaflex, 3 bridged, purple/white tabs, 12/pk | For use with SPS 4 when pumping acidic or aqueous based rinse | 5043-0063 |
| Peristaltic pump tubing, PVC Solvaflex, 3 bridged, black/black tabs, 12/pk | For use with SPS 4 when pumping low volatile organic solvents | 3710034800 |
| Pump tubing, PVC Solvaflex, 3-bridged, gray/gray | Standard tubing supplied with the autosampler for the rinse pump.<br>For use with aqueous samples on AA, MP-AES, ICP-OES, and ICP-MS instruments | 3710049000 |
| Pump tubing, Santoprene, 3-bridged, gray/gray, 6/pk | For ketone-based solvents on AA, MP-AES, ICP-OES, and ICP-MS instruments | 3710057500 |
| Pump tubing, PVC Solvaflex, 3-bridged, orange/yellow, flared ends, 12/pk | For use with low volatile organic solvents on AA, MP-AES, ICP-OES, and ICP-MS instruments | 3710069000 |
| Pump tubing, PVC Solvaflex, 3-bridged, yellow/yellow, 12/pk | For use with low volatile organic solvents on AA, MP-AES, ICP-OES, and ICP-MS instruments | 3710069300 |
| Pump tubing, PVC Solvaflex, 3-bridged, purple/black, 12/pk | For use with aqueous samples on UV instruments | 3710052000 |
| Pump tubing, FPM, 3-bridged, black/black, flared ends, 12/pk | For use with aromatic organic solvents on AA, MP-AES, ICP-OES, and ICP-MS instruments | 3710069100 |
| Pump tubing, PVC Solvaflex, 3-bridged, black/black, flared ends, 12/pk | For use with low volatile organic solvents on AA, MP-AES, ICP-OES, and ICP-MS instruments | 3710069200 |

## Test and Digestion Tubes

| Description | Unit | Part No. |
|---|---|---|
| Polypropylene tubes, 16 mm od, 125 mm height | 125/pk | 3710051100 |
| | 1,000/pk | 190049700 |
| Test tubes, 16 x 150 mm, 21 mL | 250/pk | 5190-9092 |
| Polypropylene test tubes, 17 mm od, 16.5 mL | 1,000/pk | 00000001600L |
| Centrifuge tubes, screw-capped, 29 mm od, 50 mL polypropylene | 500/pk | 190065200 |
| Digestion tubes, polypropylene, for 36- and 54-well hot block | 500/pk | 190047900 |

Polypropylene test tubes, 3710051100

## Sample Filtration

| Description | Part No. |
|---|---|
| **Agilent Captiva Syringe Filters** | |
| Captiva premium syringe filter, PTFE membrane, 15 mm diameter, 0.45 µm pore, 100/pk | 5190-5085 |
| Captiva premium syringe filter, PTFE membrane, 25 mm diameter, 0.45 µm pore, 100/pk | 5190-5087 |
| Captiva Econofilter, PTFE membrane, 13 mm diameter, 0.45 µm pore, 1000/pk | 5190-5266 |
| Captiva Econofilter, PTFE membrane, 25 mm diameter, 0.45 µm pore, 1000/pk | 5190-5268 |
| **FilterMate(TM) Filtration System*** | |
| FilterMate, 0.45 µm PTFE-faced polypropylene filter, 100/pk | 190048100 |
| FilterMate, 2 µm PTFE-faced polypropylene filter, 100/pk | 190048000 |

*For use with digestion tubes, p/n 190047900

# Chromium Speciation Kit

The Agilent chromium speciation kit delivers fast, routine separation of Cr(III) and Cr(VI) at low levels in drinking water, using LC(IC)-ICP-MS. The kit provides a proven ion exchange separation with Agilent LC coupled to Agilent ICP-MS systems.



## Features

- Separation and analysis of both Cr(III) and Cr(VI) at low ng/L levels within 3 minutes.

- Reliable peak separation and accurate quantification of Cr species, even in high matrix water samples.

- Low level, interference-free Cr analysis is provided by the standard helium (He) mode of the Agilent ICP-MS systems. Cr background is minimized by the metal-free sample path of the LC bio-compatibility kit or the use of BioInert LC 1260 modules.

- Direct control of the Agilent 1260 LC(IC), and integrated, sample analysis and data processing with the ICP-MS MassHunter Workstation and Plasma Chromatographic software.

- Complete, proven speciation solution includes Handbook, LC-ICP-MS Connection Kit and column for Cr speciation in water.

- The Cr Speciation Kit can be used for separation and quantification of both Cr(III) and Cr(VI), or for ultra-low level analysis of Cr(VI) alone.

# GC-ICP-MS Interface Kit

The Agilent GC-ICP-MS interface for the Agilent ICP-MS Systems and 7890A GC ensures superior GC-ICP-MS performance in the analysis of volatile organic and organometallic compounds. High-temperature, dry plasma delivers superior sensitivity for high-ionization-potential elements such as Hg, As, Se, and the halogens.

The first commercial GC-ICP-MS interface was developed by Agilent in 2002. This became the benchmark for GC-ICP-MS performance, due to its fully heated transfer line and torch injector, which permit the analysis of high boiling-point (BP) compounds. These innovations, which remain unique, have been enhanced and refined in the new GC-ICP-MS interface.



## Features

- Freedom from background interferences on sulfur and phosphorus, enabling trace measurement at elemental masses

- Uniform high temperature maintained all the way to the tip of the ICP injector, preventing peak tailing and loss of high-boiling-point analytes due to condensation in the injector

- Reduced length, simpler installation, and more consistent alignment than the previous model

- Both the transfer line and ICP injector are independently heated and controlled by the GC

- Maximum temperature of 300 °C, allowing high-boiling-point compounds to be quantitatively transferred to the detector

- Sulfinert interface liner for passive transfer from the GC column to the injector tip, permitting the analysis of reactive compounds, such as many sulfur species

- Argon make-up gas preheat in the GC oven maintains gas temperature at compound elution temperature

- The high flow rate of heated argon through the transfer line minimizes the time spent between the GC and ICP torch to less than 100 milliseconds, significantly reducing the opportunity for interaction between the eluting compounds and the transfer line.

- Electronic pressure control module (PCM) for optional gases (such as oxygen to decompose carbon)

# ICP-MS Arsenic Speciation Kit

Agilent has developed the arsenic speciation kit for LC-ICP-MS for quick, accurate assessment of arsenic toxicity. The kit links Agilent LC to the Agilent ICP-MS systems, and enables analysis of individual arsenic species. A validated analytical method is included, together with a speciation column for arsenic speciation in either drinking water or urine.



## Features

- A complete, proven speciation solution with the ability to analyze low concentrations of potentially harmful arsenic species in water samples or urine, as required by current legislation.

- A fast and efficient analysis method that separates and quantifies all the common inorganic and organic arsenic species in just 10 minutes.

- Excellent peak separation from the optimized chromatographic method, and high matrix tolerance provided by the robust plasma of the Agilent ICP-MS systems.

- The standard helium mode of the Agilent ICP-MS systems reliably removes the ArCl interference on As, caused by the high concentrations of chloride that may be present in urine and some water samples.

- For a fully integrated LC-ICP-MS configuration, the As speciation kit should be used with ICP-MS MassHunter software, enabling full LC control, integrated sequencing, and real-time data analysis with QC.

# ICP-MS High Matrix Introduction (HMI) Accessory

Agilent High Matrix Introduction (HMI) technology, supplied as standard on the 7800 ICP-MS, uses an innovative, computer-controlled, and reproducible aerosol dilution approach that reduces the aerosol loading on the plasma. This allows the plasma to tolerate much higher total dissolved solids (TDS) levels than the 0.1 to 0.2% that is typical for ICP-MS.

HMI dilutes the sample aerosol using clean, dry argon gas, completely eliminating the disadvantages of liquid dilution (time, reagent costs, risk of contamination, dilution errors).

## Features

- Enables the direct analysis of samples containing low-% TDS (up to 3%, depending on the matrix)

- Significantly improves plasma robustness compared to conventional ICP-MS methods

- Reduces oxide interferences to extremely low levels (0.2% CeO/Ce), providing better accuracy and more stable sampling conditions

- Eliminates liquid dilution of high matrix samples prior to analysis (conventional liquid dilution has several disadvantages, including increased risk of sample contamination, dilution errors, and sample preparation time)

- Provided as standard on the 7800 ICP-MS

# ICP-MS Inert Kit

O-ring-free and manufactured from PFA for the lowest contamination levels and chemical resistance, the Agilent ICP-MS inert kit contains all components necessary to replace the standard quartz sample introduction system with parts suitable for the analysis of high-purity and HF-containing samples.

Users can choose between a demountable torch with a platinum or sapphire injector. Pt is the highest purity injector material and is recommended for semiconductor applications, although the sapphire injector gives no measurable increase in backgrounds. A PFA nebulizer is available separately.



## Features

- A complete kit that contains a PFA endcap, PFA spray chamber, connecting pipe, demountable quartz torch, and torch injector (four options: platinum or sapphire, 2.5 or 1.5 mm injector) with PFA base

- Easy to install with a push-fit torch connector

- Easy to clean with o-ring-free endcap and spray chamber

- O-ring-free design and PFA material ensure low background equivalent concentration (BEC) and detection limits (DL)

- Added flexibility for organic solvent analysis with an optional connecting pipe with gas port for the addition of O2/Ar

- Compatible with PFA MicroFlow concentric nebulizer (G3139-65100) and PFA MicroFlow nebulizer with I-AS probe (G3139-65102)

# ICP-MS Integrated Sample Introduction System (ISIS-DS)

For labs that routinely run high numbers of samples, the Agilent integrated sample introduction system with discrete sampling (ISIS-DS) dramatically increases the productivity of the Agilent ICP-MS systems, while allowing high-matrix samples to be run for extended periods. ISIS-DS uses an additional pump and switching valve to enable discrete sampling or loop injection operation.

Coupled with the HMI technology of the Agilent ICP-MS systems and routine operation using single collision cell mode (He mode), the ISIS-DS delivers unmatched productivity for high-sample-matrix analysis in high-throughput laboratories.



## | Features

- Technology Designed, built, and supported by Agilent, combines neatly with the ICP-MS mainframe, and features fully integrated software

- The ISIS-DS loop is filled via a peristaltic pump—not a diaphragm vacuum pump—so sample consumption is low (around 2 mL/min) and there is no vacuum pump and associated pump valve to wear and replace

- The system is completely compatible with the Agilent SPS 4 autosampler

- ISIS-DS can significantly improve sample throughput, giving total run times of less than 1.5 min (depending on element list and sample type), which is 2–3 times faster than normal (continuous) sample introduction

- Reduced exposure of the interface to sample matrix gives reduced signal drift and improved short- and long-term precision as well as less frequent cone cleaning

- ISIS-DS can also be combined with Agilent High Matrix Introduction Accessory technology for rapid analysis of samples containing % levels of total dissolved solids. This provides better DLs and freedom from interferences as compared to ICP-OES, all with discrete sampling productivity.

# ICP-MS Laser Ablation

Agilent Laser Ablation ICP-MS (LA-ICP-MS), is used for the direct surface analysis of solid samples. The Agilent 7850 and 7900 single quadrupole ICP-MS and 8900 triple quadrupole ICP-MS (ICP-QQQ) systems provide high sensitivity, fast acquisition speed, and 10~11 orders of dynamic range. Combined with sequence control via ICP-MS MassHunter workstation software, these systems are perfectly suited for laser ablation analysis of a wide range of samples.

LA-ICP-MS is highly flexible, enabling single-spot ablation for inclusion or defect analysis, line or raster sampling for bulk analysis or imaging, and precise depth profiling studies. Laser Ablation sampling is applicable to geological, archeological, and forensic samples, impurity analysis, and for elemental distribution or zonation studies in geochemistry, bioimaging, and environmental monitoring.



Agilent 7850 ICP-MS

## Features

- Laser ablation allows accurate determination of trace element concentrations and distribution at ppb levels in a wide range of sample types

- For bulk analysis, LA-ICP-MS reduces sample preparation requirements, which aids the analysis of ceramic and alloy materials that cannot easily be digested

- Laser ablation simplifies and/or eliminates sample preparation, reducing analysis time

- Nondestructive sampling preserves most of the original sample, thus enabling additional measurements, if required

- Integrated control allows unattended sequence analysis from predefined ablation sites

- Allows data manipulation in real time

- Compatible with optional software packages including Glitter data reduction software

# ICP-MS Ultra High Matrix Introduction (UHMI)

Agilent Ultra High Matrix Introduction (UHMI) technology uses an innovative, computer-controlled, calibrated, and reproducible aerosol dilution approach to extend the matrix tolerance of Agilent ICP-MS systems to percent levels of dissolved solids – far beyond the normal limit for ICP-MS.

UHMI, included with the 7850, 7900 and 8900 ICP-MS systems, is a sample dilution technique, but because it uses clean argon as the diluent, it completely eliminates the potential problems of liquid dilution, including increased risk of sample contamination, leaks in tubing connections, dilution errors, waste disposal costs, and sample prep time.



## Features

- Enables the direct analysis of samples containing % level TDS (up to 25%, depending on the matrix)
- Significantly improves plasma robustness compared to conventional ICP-MS methods, thereby minimizing matrix suppression
- Reduces oxide interferences (to around 0.25% CeO/Ce) providing better accuracy and more stable sampling conditions
- Eliminates the need for liquid dilution of high matrix samples prior to analysis, saving time, reagent and disposal costs, and reducing the risk of contamination and dilution errors

# AGILENT I-AS CLEAN AUTOSAMPLER
## FAST. FLEXIBLE. PRECISE.

## PROMISING 10 YEARS OF VALUE
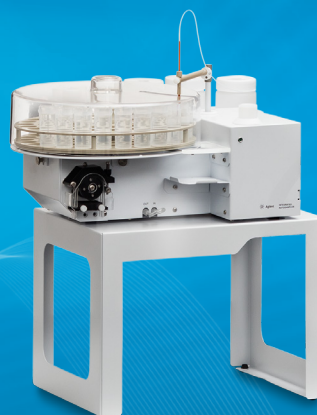
**AGILENT VALUE PROMISE**

From the date you purchase the Agilent I-AS autosampler, Agilent guarantees at least 10 years' use or residual-value credit towards a replacement model upgrade. Our Value Promise maximizes your return-on-investment by ensuring that your purchase is safe.

## Automating clean sample introduction

Agilent Technologies provides a fast, flexible and high precision autosampler specifically for ultratrace analysis. The I-AS Clean Autosampler is specifically designed for Agilent ICP-MS, and enables the unmatched sensitivity of Agilent ICP-MS instruments to be fully realized.

The autosampler is ideal for semiconductor applications and any application involving the ultratrace analysis of elements where laboratory contamination may present a problem, for example, clinical applications and the measurement of seawater at ambient levels.

The I-AS is fully supported by the ICP-MS MassHunter software, giving fully integrated control.

## Designed specifically for ultra clean analysis

The I-AS has been designed so that no moving parts pass over the sample vials. In fact, the articulated sampling arm lifts and rotates out of position as the sample tray moves. The precision control motors ensure very fast sample-to-sample times, while maintaining superb accuracy.

The non-metal materials used in the manufacture of the I-AS further minimize the risk of trace metal contamination of samples from autosampler components; for example, the sample arm is made of plastic and the probe of fluororesin. In addition, a rugged clear plastic cover encloses the sample tray preventing contamination from airborne particulates.

The I-AS features a continuously flowing rinse port so that the probe is always rinsed with fresh wash solution. Efficient rinsing, which is achieved by peristaltic pump action, eliminates the risk of cross contamination during a long sample sequence.

## Ease of access ensures ease of use

The easy-access, open sample introduction area of Agilent ICP-MS systems allows the small footprint I-AS to be positioned near the nebulizer ensuring optimum use of space. The short tubing length from probe to nebulizer, keeps dead volumes to a minimum and provides excellent productivity by offering minimum sample uptake and washout times. Furthermore, the close location of the autosampler allows use of self aspirating nebulizers—ideal for low flow, high precision applications.

## Features of the Agilent I-AS Clean Autosampler

- Covered autosampler for use with Agilent ICP-MS.

- Non-metal arm—no metal or drive mechanism moves over sample vials.

- Continuously flowing rinse port under peristaltic pump control for probe wash.

- Choice of sample tray arrangements. Small and large sample volumes are accommodated.

- 3 × 100 mL standard or wash bottles.

- Designed for all semiconductor applications and any ultratrace analysis of commonly occurring elements.

- Made using anti-corrosion and HF resistant materials.

- Fully automated QA/QC control procedures available using the optional Intelligent Sequencing Software.

## Flexible sample capacities and tray sizes for diverse ultratrace applications

Sample volumes smaller than 1 mL up to 50 mL can be accommodated with three extra large volume positions for standards, blanks and/or quality control solutions. Alternatively, the large volume bottles can be used to contain an organic or alkali solvent as an extra wash solution. If the sample tray is removed from its usual position, a single sample position becomes available for the user to add a 100 mL sample bottle.

## Wide choice of tray sizes

- 89 × 6 mL vials (Type A)

- 53 × 18 mL vials (Type B)

- 18 × 50 mL vials (Type C)

- 79 × 1.5 mL vials + 10 × 18 mL vials (Type D)

- 79 × 6 mL vials + 10 × 18 mL vials (Type E)

- 15 vials up to 48 mm outer diameter x 55 mm high (Type F)

The sample trays and the main body of the I-AS are finished with the same, hard wearing and durable coating as all Agilent ICP-MS instruments.

## Specifications

Dimensions: width 290 mm (11.4 in), depth 360 mm (14.2 in), height 220 mm (8.7 in), height 280 mm (11.0 in) including probe

Weight: 5 kg (11 lbs)

Single sample position: a diameter of 55 mm or less and a height of 126 mm or less.

Communication: RS232C+USB cable

Power requirements: 100–120 VAC, 50/60 Hz, 1 A or 200–240 VAC, 50/60 Hz, 0.5 A

Supported instruments: 7700 ICP-MS, 7800 ICP-MS, 7900 ICP-MS, 8800 ICP-QQQ, 8900 ICP-QQQ

## Genuine Agilent Supplies Deliver Best Performance

Agilent supplies for the I-AS Clean Autosampler are designed to give flexibility in sample handling and maintain the high performance of your system.

# LC-ICP-MS Connection Kit

The Agilent LC-ICP-MS connection kit allows any Agilent ICP-MS system to be fully integrated with an Agilent HPLC or IC system (alternative LC/IC systems are also supported). Fully integrated real-time data analysis is provided in the ICP-MS MassHunter Chromatography Data Analysis module.

Speciation kits are available for true turnkey speciation analysis for arsenic in urine and water, and chromium in water. Automated trace element speciation allows overlay of both UV and ICP-MS spectral data acquired from the same sample for straightforward comparison (requires LC-MS MassHunter software). The kit includes all necessary tubing, connectors and cables for seamless LC-ICP-MS integration.

## Features

- Connects Agilent HPLC or IC systems with market-leading Agilent ICP-MS systems

- Connection and setup are straightforward, and intuitive operation is provided by the ICP-MS MassHunter software which controls both the LC and ICP-MS

- Provides the ability to run routine, overnight integrated LC-ICP-MS analyses, with full QC checks including retention time recalibration, internal standardization and outlier flagging

- Optimized ICP-MS sample introduction is compatible with standard and capillary LC applications

- Robust ICP with the organic sample introduction option is capable of handling any organic mobile phase or gradient, including acetonitrile

- High ion transmission delivers high sensitivity even at capillary LC flow rates (20 µL/min)

- Available kits enable true turnkey speciation analysis for arsenic in urine and water, and chromium in water

- Automated trace element speciation allows the overlay of UV and ICP-MS spectral data acquired from the same sample for straightforward comparison (requires LC-MS Mass Hunter software)

- Includes all necessary tubing, connectors, and cables

# AGILENT SPS 4 AUTOSAMPLER
## INNOVATIVE. ROBUST. PRODUCTIVE.

**Promising 10 Years of Value**

From the date you purchase the Agilent SPS 4 autosampler, Agilent guarantees at least 10 years' use or residual-value credit towards a replacement model upgrade. Our Value Promise maximizes your return-on-investment by ensuring that your purchase is safe.

## Introduction

The SPS 4 is a next-generation, high-performance autosampler for atomic spectroscopy applications. Designed to meet the needs of high-throughput laboratories requiring a fast, high-capacity (up to 360 samples or 768 microtiter wells), reliable autosampler, it is also small, quiet, easy-to-use and affordable. The SPS 4 is suitable for ultra-trace analysis by ICP-MS and rugged and robust enough for FAAS, MP-AES, and ICP-OES users.

Built around an innovative gantry design that supports the mechanical components between two rigid pillars, the SPS 4 provides improved accuracy and precision, high speed, ease of access, and corrosion resistance — all within a footprint that is nearly 40% smaller than other autosamplers in its class.

With the integrated environmental enclosure (optional), the SPS 4 offers maximum sample integrity while protecting your laboratory environment from hazardous sample vapors, all without compromising a millimeter of valuable bench space. In addition, access to the power switch, peristaltic pump, and all electrical and communications ports are outside the environmental enclosure for easy access and protection from corrosion.

## Agilent Technologies

## Uniquely Agilent in design and compatibility

- Heavy-duty, powder-coated aluminum frame for light weight, maximum rigidity and corrosion resistance.

- User programmable high-speed probe arm assembly and optimized movement for fastest sample-to-sample speed.

- USB plug-and-play connectivity allows fast and easy setup.

- Integrated spill tray contains accidental spills, protecting the laboratory bench and simplifying cleanup.

- Standards rack and rinse port are centrally located for the fastest access and maximum throughput.

- All electronic and mechanical components are located in top gantry, away from liquid spills, for long life and easy maintenance.

- Compatible with Agilent's full range of atomic spectroscopy instruments.

- Modern industrial design combines well thought out robustness and performance characteristics with a sleek, eye-catching profile that coordinates with Agilent's newest MP-AES, ICP-OES and ICP-MS designs.

## Flexible rack configuration enables wide range of sample capacities

- Compatible with a wide range of commercially available (Bel-Art) metal-free sample racks, including 90-, 60-, 40-, 24-, and 21-position racks. A 96-well microtiter plate rack is also available for ICP-MS.

| Rack capacity (# tubes) | Tube OD (mm) | Maximum tube height (mm) |
|---|---|---|
| 90 | 13 | 150 |
| 60 | 17 | 150 |
| 40 | 20 | 150 |
| 24 | 25 | 150 |
| 21 | 30 | 150 |

- Rack configuration is user selectable, and rack sizes can be mixed and matched as needed.

- Central standards rack is configurable to support either a 34 position (twelve 29 mm OD tubes plus twenty two 17 mm OD tubes) or 5 position (five 61 mm OD bottles) rack (depending on instrument configuration).

- Four sample rack capacity supports up to 360 samples, permitting long unattended runs in high-throughput labs.

- Eight 96-well microtiter plate capacity, with optional well plate kit, supports up to 768 samples (for ICP-MS only).

## Leading the way in atomic spectroscopy innovation

The SPS 4 is compatible with Agilent's comprehensive atomic spectroscopy portfolio.

Agilent SPS 4

Agilent AA

Agilent MP-AES

Agilent ICP-OES

Agilent ICP-MS

Agilent ICP-QQQ

## Integrated environmental enclosure option protects your samples and your laboratory environment

- Heavy-duty, powder-coated aluminum frame for light weight, maximum rigidity and corrosion resistance.

- Maintain maximum sample integrity by protecting samples from the lab environment.

- Protect operators and laboratory instrumentation from corrosive sample vapors.

- Fully integrated environmental enclosure takes up no extra valuable bench space.

- When the environmental enclosure is fitted, sample visibility remains unrestricted, as well as sample access from the front when the door is in the raised position.

- Vertically sliding front access door can be fixed open for easy access to samples.

- Electrical and plumbing connections remain outside the environmental enclosure for easy access with the cover in place.

- Environmental Enclosure Kit includes a 50 mm (2 in) extraction air duct fitting that can be fitted to either side of the autosampler as needed.

## Dual-wash reservoir option eliminates potential carryover

- Optional dual-port wash reservoir for ultra-trace applications or applications requiring two different rinse chemistries.

## Three-channel peristaltic pump for ultimate flow-through rinse flexibility

- Simultaneously pump two different rinse solutions (in conjunction with the optional dual wash reservoir)

- Third channel still allows for a pumped drain when a gravity drain is not an option.

## Multiple probe size options for a diverse range of applications

- A range of carbon fiber–reinforced fluoropolymer probes suit all applications from microvolume sampling to high-speed discrete sampling.

- Integrated nebulizer/probe assembly option for ultra-clean applications.

- Programmable probe speed in 3 axes for the ultimate performance with all sample types.

- Intelligent probe acceleration and deceleration permits high speed while minimizing spattering.

- Programmable probe depth for sedimentary or separated layer samples.



SPS 4 autosampler shown with optional integrated environmental enclosure. Front cover shown in fixed open position for easy access to samples.

## Specifications

| Dimensions: | Width 600 mm (23.6 in) | Depth 320 mm (12.6 in) | Depth 363 mm including peristaltic pump (14.3 in) | Height 510 mm (20.1 in) | Weight: 15 kg (33.1 lbs) |
|---|---|---|---|---|---|
| **Probe arm speed:** | User programmable in X, Z, and Theta (rotational) dimensions. Optimized sample-to-sample probe movement time for corner-to-corner travel in less than 3 seconds. | | | | |
| | Axis | Minimum speed | Maximum speed | | |
| | X (mm/sec) | 14.5 | 1016 | | |
| | Z (mm/sec) | 8.6 | 518 | | |
| | Theta (degrees/sec) | 9 | 540 | | |
| **Rinse port flow rate:** | Programmable, up to 50 mL/min depending on pump tube diameter. | | | | |
| **Communication:** | USB 2.0 (full speed) virtual com port with plug-and-play capability. | | | | |
| **AUX interface:** | RS485 for future upgradability to external device control. | | | | |
| **Power requirements:** | 100–240 VAC, 47–63 Hz, 1.5 A | | | | |
| **Built-in diagnostics:** | The SPS 4 includes a row of four LEDs on the front panel that indicate the operational or error status of the instrument. | | | | |

## Supported instruments

| AA | 240FS, 280FS, 55B (computer controlled) | Requires SpectrAA software version 5.3 or above |
|---|---|---|
| MP-AES | 4100, 4200, 4210 | Requires MP Expert software version 1.5.1 or above for 4100 and 4200 and version 1.6 or above for 4210 |
| ICP-OES | 5100, 5110 | Requires ICP Expert software version 7.1 or above for 5100, version 7.3 or above for 5110 |
| ICP-MS | 7700, 7800, 7900, 8800, 8900 | Requires ICPMS MassHunter software version 4.2 or above for 7700/7800/7900/8800, version 4.3 or above for 8900 |



### Genuine Agilent supplies for flexible sample handling and maximum productivity

Agilent supplies for the SPS 4 autosampler are designed to give flexibility in sample handling and maintain the high performance of your system. With a wide range of sample racks and vessels supporting small or large sample volumes, probe options and interface supplies, we can help keep your lab running at maximum productivity.
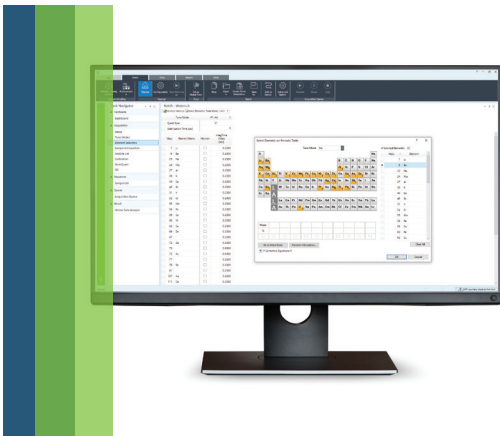
# ICP-MS MassHunter Software

## Version 5.1

## Major update delivers significant functionality changes

The Agilent ICP-MS MassHunter software version 5.1 includes a redesigned user interface that can reduce operator training requirements and simplify routine and advanced ICP-MS operation. The software also features several smart functions that address common ICP-MS time traps.

### Redesigned user interface
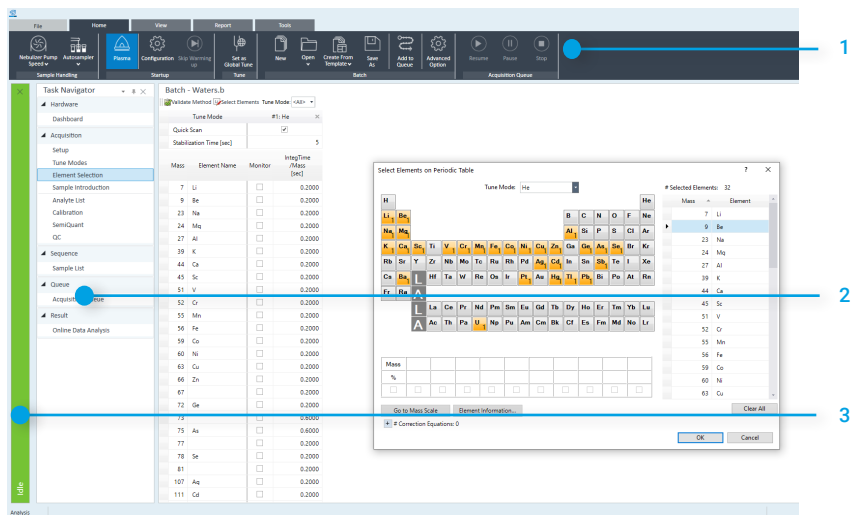


The redesigned user interface features: 1. Ribbon bar provides user-friendly access to all functions. 2. A task navigatior that maps to a typical workflow. 3. A color-coded status bar that conveys instrument status at a glance.

## New functionality

Included in version 5.1 is important new functionality:

– An early maintenance feedback function monitors instrument status and notifies you when maintenance will be needed, based upon several metrics such as operation time or number of samples measured. Traffic light color-coded alerts mean that tasks—such as changing pump tubing, or cleaning the cones— can be scheduled and are never missed. Using the alerts also ensures the tasks are not performed more frequently than necessary

– Pre- and post run performance checks provide confidence in results and prevent unplanned downtime. A post run check at the end of the day flags potential issues, so you can address them—before they impact your work the next day

– Outlier conditional formatting highlights results that are outside a nominated range or that fail a test requirement. Color-coding makes it easy to spot problematic results when reviewing data

– Video guides for common installation, maintenance, and troubleshooting tasks are provided in an extensive Help and Learning Center. It's all designed to equip the analyst with the knowledge to keep the instrument up and running flawlessly

– The IntelliQuant feature quickly captures a full mass spectrum to create a profile of each sample's composition. You can then identify abnormal levels of major elements, unexpected analytes and the level of solids in the sample

Combined with upgraded existing functionality:

– Accelerate methods development with predeveloped methods, or guided method development to fully setup methods for more challenging samples

– Doubly charged interference correction improves data quality by correcting for unexpected interferences from rare earth elements

– Fully-featured yet simple data analysis, regardless of application: quantitation, chromatographic, FFF, single particle/cell, isotope and solid (e.g. LA) analysis

– Flexible data handling and report generation simplifies reporting. Data can be exported in a range of formats, including integration with LIMS

– Built-in technical controls ensure the integrity of your data, control access, and facilitate compliance as defined by US FDA 21 CFR Part 11, EU Annex 11 and equivalent regulations in other countries.

## Compatibility

Agilent MassHunter version 5.1 is compatible with the Agilent 7700, 7800, 7850, and 7900 ICP-MS, 8800 and 8900 ICP-QQQ instruments.
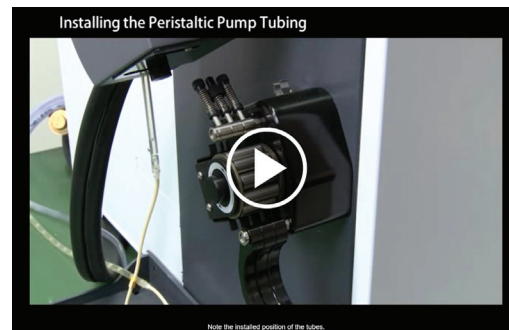


Online videos provide step-by-step instructions on how to do common setup and maintenance tasks.
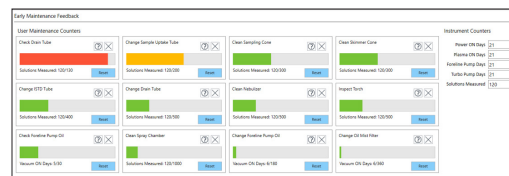


The early maintenance feedback function uses sensors and counters to determine when maintenance is needed, based on operation time or number of samples measured. The traffic light color-coded alerts indicate when maintenance tasks are required.

# Agilent ICP Go Software

## Elemental analysis made easy
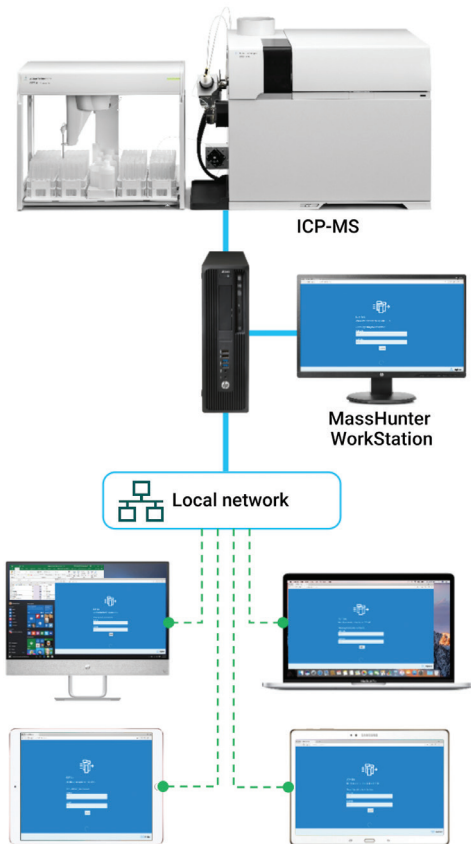


Use ICP Go to control your entire analysis on the local workstation with ease. If it's connected to the local network, you can take advantage of full control from any compatible Windows, OSX, Android or iOS device.

## Focus on the essentials

ICP Go is a simple, browser-based software interface that makes the routine operation of your Agilent ICP-MS easier than ever. It is compatible with Agilent 7700, 7800, 7850, 7900 ICP-MS and 8900 ICP-QQQ instruments and allows new or occasional users to run an analysis with confidence.

With ICP Go you can:

– Quickly set up and run sample batches from stored templates.

– Achieve a high level of control over batches and reduce the possibility of method errors that can cause inconsistent results and costly reruns.

– Control your entire analytical run, from igniting the plasma through to analyzing samples. During a run, you can easily queue urgent samples for immediate analysis, and monitor the instrument status remotely.

– Train new users in less than a day, which reduces the costs of initial training and makes it much easier for operators to transfer between analytical techniques. ICP Go's clear screen layout and simple workflow enable easy crosstraining of analysts, giving you more staffing flexibility, meaning that your senior analysts can focus on more advanced tasks, such as optimizing lab efficiency.

ICP Go can control the instrument directly on the same PC as ICP-MS MassHunter via Edge or Chrome browsers. Should the control PC be connected to the local network, it is possible to log in to the ICP Go session from a remote, but connected device. As the interface is based upon browser technology, most devices with Edge or Chrome browsers can be used on Windows, OSX, Android and iOS operating systems. Several instruments can be easily connected to from an individual device using separate browser tabs.
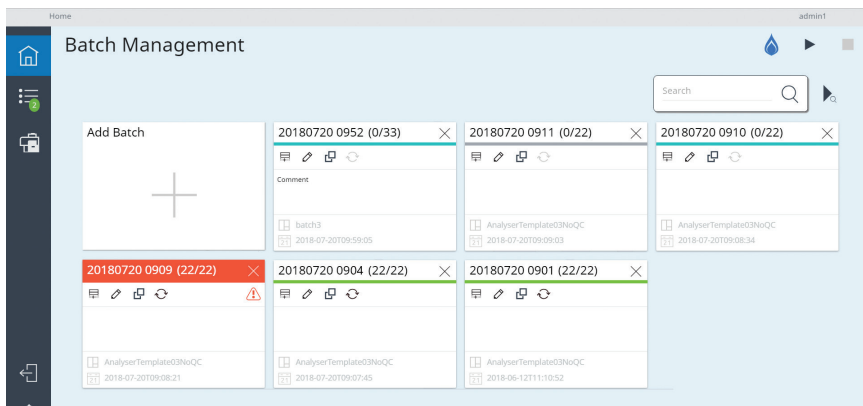
Step 1. Create a new batch of samples by selecting the method template and importing or entering the sample names.
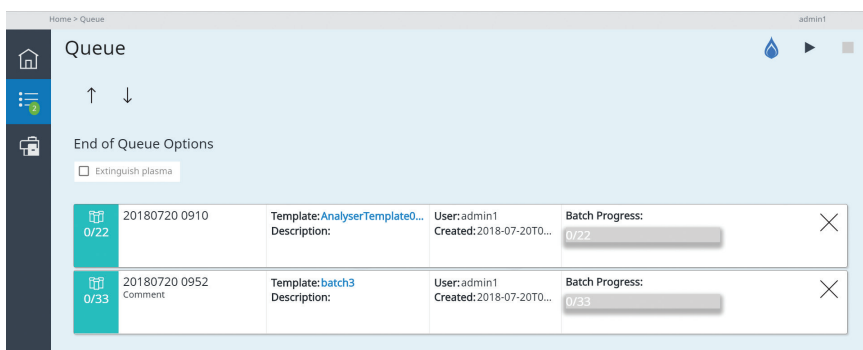


Step 2. Add the batch to the queue for analysis. The status of each batch in the queue is displayed onscreen.
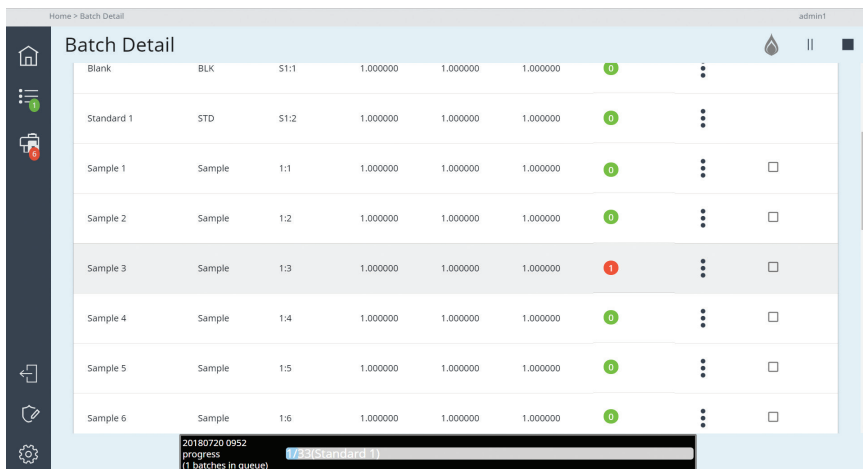


Step 3. Color-coded flags show the run status, allowing easy identification of errors, such as QC failures.

## Analyze samples in 3 steps

After loading samples into the autosampler, analyzing them requires only three steps:

1. Create a new batch by importing or entering the sample names into your chosen method template.

2. Add the batch to the Queue. You can change the order of batches, if necessary. Analysis of queued batches starts automatically if the Queue is already running. Otherwise, click the Start icon to run the new batch.

3. You can monitor the status of the analysis using the color-coded flags, displayed during the run and Internal Standard stability charts.

## Compatibility

ICP Go is compatible with:

– Agilent 7700, 7800, 7850, 7900 ICP-MS and 8900 ICP-QQQ instruments

– ICP-MS MassHunter version 4.6 or later, running on Microsoft Windows 10 operating system, version 1703 or later

– Agilent ASX 520 autosampler

– Agilent I-AS autosampler

– Agilent SPS 4 autosampler

## Ordering information

ICP Go is included with the Agilent 7850 ICP-MS Analyzer package and can be added to existing Agilent ICP-MS instruments.

# ICP-MS Control Pack

In response to requests from users, the User Access Control Pack software stregthens and enhances the security of ICP-MS MassHunter (or ChemStation) software for ICP-MS system auditing and access management.

## Features

- Control three levels of user access with administrator-controlled permission and separate log on for each level
- Change users during automated sequencing or other long operations
- Prevent unauthorized access while current user is away, with operating system lock function
- Record user(s) logon/logoff to operating system (supported OS function) and MassHunter or ChemStation logon
- Store log of user name, instrument name, serial number, tune file name, and time stamp with all data files and reports

# ICP-MS Plasma Chromatographic Software

Agilent ICP-MS Plasma Chromatographic Software seamlessly integrates Agilent ICP-MS systems with chromatography instrumentation. Developed by Agilent, this optional software handles chromatographic data with powerful integration, calibration, and quantification capabilities.

The Plasma Chromatographic Software is more than a just data analysis package though. It is fully integrated into the ICP-MS MassHunter and ChemStation software, so you can set up sample sequences and perform automated chromatography, run real-time ICP-MS data acquisition and analysis, and perform real-time QC actions such as retention time recalibration.



## Features

- Display and manipulate data with powerful graphics

- Integrate peak search, shoulder detection, and peak smoothing routines

- Perform a range of quantitative operations, including weighting and internal standardization

- Confirm target analytes with automatic qualifier ion identification

- Synchronize chromatograph and Agilent ICP-MS data acquisition automatically for genuine unattended sequence analysis

- Automated chromatography-ICP-MS analysis, with real-time data analysis and output

- Calibrate retention time in real time

- Edit sample sequences, including insertion of rush samples

# ICP-MS Intelligent Sequencing Software

Agilent Intelligent Sequencing for MassHunter (or ChemStation) allows users to take control of run-time quality assurance by evaluating real-time data quality. The software compares measured results against expected values and takes appropriate QC actions, and is delivered with a set of preconfigured templates to help you meet US EPA 200.8, 6020, and other internationally regulated requirements.

The software can be easliy tailored to meet specific QA/QC requirements and produce custom protocols by the addition of quality control samples and criteria.



## Features

- Customize to meet your QA/QC functionality needs
- Automate QA/QC checks
- Perform pre-selected action to attempt to remedy the problem - with no operator investigation
- Perform auto dilution as QC action on failure when used with the ISIS-DS
- Automatically generate custom QC reports that eliminate manual reporting procedures

ICP-OES torch, demountable, 1-slot, 8003-0344

ICP-OES torch, demountable, 1-slot, 8003-0346

ICP-OES torch, demountable, 3-slot, 8003-0347

ICP-OES torch, demountable, short, 8003-0348

O-ring kit, 8003-0360

O-ring kit, for vertical torch 8003-0361

# ICP-OES SUPPLIES

## ICP-OES Torches

Available in a wide range of styles from 0 to 3 slots, depending on instrument and application needs. The slots in the side of the torch allow the plasma to be viewed through the slot and not the quartz. This ensures the best performance, while maintaining optimum shielding of the plasma from entrained air. Torches without slots are recommended for fusions and high TDS samples. One-slot torches are the standard torch for aqueous solutions. Three-slot torches are typically used for organic analysis.

### Torches and Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 8x00 | Torch, demountable, 1-slot, using 1-piece quartz tubing for plasma and auxiliary gas flow | N0780130 | 8003-0344 |
| Optima 8x00 | Torch, demountable, 0-slot, using 1-piece quartz tubing for plasma and auxiliary gas flow | N0780133 | 8003-0470 |
| Optima 8x00 | Torch, demountable, 3-slot, using 1-piece quartz tubing for plasma and auxiliary gas flow | N0780132 | 8003-0345 |
| Optima 2/4/5/7x00 DV | Torch, demountable, 1-slot, using 1-piece quartz tubing for plasma and auxiliary gas flow | N0770338 | 8003-0346 |
| Optima 2/4/5/7x00 DV | Torch, demountable, 3-slot, using 1-piece quartz tubing for plasma and auxiliary gas flow | N0772005 | 8003-0347 |
| Optima 2/4/5/7x00 DV | Torch, demountable, 0-slot, short version, using 1-piece quartz tubing for plasma and auxiliary gas flow | N0770344 | 8003-0348 |
| Optima 8x00 | O-ring kit, complete, includes all O-rings used in the demountable torch | N0780437 | 8003-0359 |
| Optima 2/4/5/7x00 DV | O-ring kit, complete, includes all O-rings used in the demountable torch | N0770437 | 8003-0360 |
| Optima 4300V/ 5300V/7300V | O-ring kit, complete, for vertical torch | N0770916 | 8003-0361 |

*(Continued)*

## Torches and Supplies



Torch igniter tape, copper, 8003-0362



Torch igniter tape, copper, squares, 8003-0363

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 8x00 | Torch igniter tape, copper, 50 pcs | N0781097 | 8003-0362 |
| Optima 2/4/5/7x00 DV | Torch igniter tape, copper, 120 squares | N0775297 | 8003-0363 |
| Optima 2/4/5/7x00 DV | Torch bonnet for Optima, used as spacer between torch and RF coil | N0775289 | 8003-0364 |

# Quick Change Torch Modules

Complete torch and sample introduction module including single-slot demountable torch, mounting block, 2 mm alumina injector, spray chamber and nebulizer.

Having a second module provides a convenient and quick way to change the sample introduction system when switching between different sample types.

## Quick Change Torch Modules

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 8x00 | Quick-change torch module<br>Includes glass cyclonic spray chamber and concentric nebulizer | N0780607 | 8003-0336 |
| Optima 8x00 | Quick-change torch module<br>Includes inert Scott spray chamber and GemTip Cross-Flow II nebulizer | N0780606 | 8003-0339 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Mounting block, for quick-change torch, does not include torch, injector, spray chamber, or nebulizer | N0770600 | 8003-0338 |
| Optima 2x00/4x00/5x00/7x00 | Quick-change torch module<br>Includes inert glass cyclonic spray chamber and concentric nebulizer | N0770607 | 8003-0337 |
| Optima 2x00/4x00/5x00/7x00 | Quick-change torch module<br>Includes Scott spray chamber and GemTip Cross-Flow II nebulizer | N0770606 | 8003-0340 |
| Optima 4300V/5300V/7300V/DV | Quick-change torch module for HF analysis<br>Includes GemCone high dissolved solids nebulizer, alumina 2.0 mm id injector, quartz 3-slot torch, HF-resistant baffled cyclonic spray chamber. | N0770911 | 8003-0342 |
| Optima 4300V/5300V/7300V | Quick-change torch module for oil analysis. Includes GemCone nebulizer, alumina 1.2 mm id injector, quartz 3-slot torch, baffled cyclonic spray chamber. | N0770910 | 8003-0343 |

Injector, alumina, 1.2 mm id, 8003-0365

Injector, alumina, 2.0 mm id, 8003-0366

Top: Injector, quartz, 2.0 mm id, 8003-0374
Bottom: Injector, quartz, 0.8 mm id, 8003-0372

## Torch Injectors

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 8x00 | Injector, alumina, 2.0 mm id | N0781014 | 8003-0366 |
| Optima 8x00 | Injector, quartz, 2.0 mm id | N0781050 | 8003-0370 |
| Optima 8x00 | Injector, quartz, 3.0 mm id | N0781017 | 8003-0371 |
| Optima 8x00 | Injector, alumina, 1.2 mm id | N0781015 | 8003-0952 |
| Optima 8x00 | Injector, alumina, 1.2 mm id (entire length of tube) | N0781007 | 8003-0365 |
| Optima 8x00 | Injector, quartz, 1.2 mm id | N0781019 | 8003-0369 |
| Optima 8x00 | Injector, quartz, 0.8 mm id | N0781018 | 8003-0368 |
| Optima 2x00/4x00/ 5x00/7x00 DV | Injector, alumina, 2.0 mm id | N0775177 | 8003-0453 |
| Optima 2x00/4x00/ 5x00/7x00/DV | Injector, quartz, 2.0 mm id | N0775014 | 8003-0374 |
| Optima 2x00/4x00/ 5x00/7x00 DV | Injector, quartz, 3.0 mm id | N0775224 | 8003-0375 |
| Optima 2x00/4x00/ 5x00/7x00 DV | Injector, alumina, 1.2 mm id (entire length of tube) | N0776093 | 8003-0367 |
| Optima 2x00/4x00/ 5x00/7x00 DV | Injector, quartz, 1.2 mm id | N0775226 | 8003-0373 |
| Optima 2x00/4x00/ 5x00/7x00 | Injector, quartz, 0.8 mm id | N0775225 | 8003-0372 |

## Injector Support Adaptors

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 4300V/ 5300V/7300V | Injector support adaptor, bottom, for cyclonic spray chambers | N0771526 | 8003-0376 |
| Optima 4300V/ 5300V/7300V | Injector support adaptor, top, for cyclonic spray chambers | N0771527 | 8003-0377 |
| Optima 2x00/4x00/ 5x00/7x00/DV/8x00 | O-ring kit, for injector support adapter | N0770438 | 8003-0378 |

## TIPS & TOOLS

Alumina injectors are corrosion-resistant to all mineral acids, including HF and aqua regia, but they can also be used with less volatile organic solvents, e.g., xylene. The 2.0 mm id alumina injector is the standard injector, but a range of other sizes are available.

## TIPS & TOOLS

Quartz injectors are recommended for organic solvents and non-HF matrices. Use narrow-bore injectors for more volatile organic solvents such as gasoline.

OneNeb inert concentric nebulizer, 8003-0951



Nebulizer, GemCone, 8003-0321



Sample capillary adapter, 8003-0322



Nebulizer, GemTip, Cross-Flow II, 8003-0325

## Nebulizers and Supplies

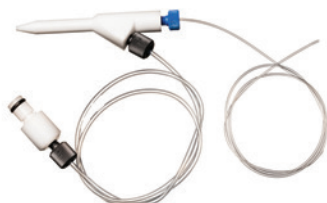| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 2x00/ 4x00/5x00/ 7x00 DV/8x00 | Nebulizer, OneNeb, inert concentric nebulizer<br>Includes sample connector and quick-release gas connector. Ideal for routine analysis of samples up to 25% TDS with good precision and better sensitivity than a SeaSpray; inert construction makes it suitable for most solution types. OneNeb nebulizer requires an end cap (8003-0335) for use with the Scott spray chamber | Not Applicable | 8003-0951 |
| Optima 2x00/ 3x00 XL/ 3x00 DV/ 3000SCX/ 4x00/5x00/ 7x00/8x00 | Nebulizer, Conikal<br>Includes Ezyfit sample connector (0.75 mm id x 700 mm) and EzyLok gas connector. For routine analysis of organic solvents and samples to 5% TDS. | N0777487 | 2010106800 |
| Optima 2x00/ 4x00/5x00/ 7x00/8x00 | Nebulizer, GemCone<br>GemCone nebulizers require an end cap for Scott spray chambers. | N0770358 | 8003-0320 |
| Optima 2x00/ 4x00/5x00/ 7x00/8x00 | Nebulizer, GemCone, high dissolved solids<br>For samples (up to 20%). Allows you to handle samples with higher dissolved solids concentration than a Cross-Flow nebulizer. GemCone nebulizers require an end cap (8003-0335) for use with Scott spray chambers. | N0690670 | 8003-0321 |
| Optima 2x00/ 4x00/5x00/ 7x00/8x00 | Sample capillary adapter, for GemCone nebulizer | N0371505 | 8003-0322 |
| Optima 2x00/ 4x00/5x00/ 7x00/8x00 | Tubing, quick-disconnect with Swagelok, for GemCone nebulizer | N0770336 | 8003-0324 |
| Optima 8000 | Nebulizer, GemTip, Cross-Flow II, for analysis of strong mineral acids and samples with less than 5% dissolved solids. Features chemically resistant GemTips made of sapphire and ruby in a chemically resistant end cap. | N0780546 | 8003-0325 |
| Optima 2x00/ 4x00/5x00/7x00 | Nebulizer, GemTip, Cross-Flow II, for analysis of strong mineral acids and samples with less than 5% dissolved solids. Features chemically resistant GemTips made of sapphire and ruby in a chemically resistant end cap. | N0770546 | 8003-0326 |

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## Nebulizers and Supplies



GemTip Cross-Flow II nebulizer tip kit, 8003-0328
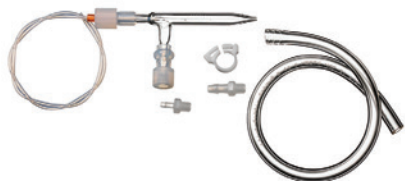


Nebulizer, type C1, for samples with high dissolved solids, for Optima 5/7/8x00, 1.0 mL/min uptake, 8003-0461



Nebulizer, Mira Mist, PEEK, 8003-0974

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 8x00 | Nebulizer, GemTip, Cross-Flow II tip kit Includes clear sapphire and red ruby argon tips for maximum corrosion resistance. The tips are constructed of PEEK with the gem insert. | N0780676 | 8003-0328 |
| Optima 2x00/ 4x00/5x00/7x00 | Nebulizer, GemTip, Cross-Flow II tip kit Includes clear sapphire and red ruby argon tips for maximum corrosion resistance. The tips are constructed of PEEK with the gem insert. | N0690676 | 8003-0327 |
| Optima | Replacement Cross-Flow nebulizer tips, GemTip Not compatible with Cross-Flow II nebulizers | N0580624 | 8003-0454 |
| Optima 5/7/8x00 | O-ring kit for GemTip, Cross-Flow II nebulizers Includes all O-rings used in the Cross-Flow and Cross-Flow II nebulizers. | N9300067 | 8003-0456 |
| Optima 2x00/ 3x00/4x00/ 5x00/7x00/8x00 | Nebulizer, type C1, 1.0 mL/min uptake For samples with high dissolved solids | 00472022 | 8003-0461 |
| Optima 2x00/ 3x00/4x00/ 5x00/7x00/8x00 | O-ring, small, for type A/C/K nebulizers | 00473194 | 8003-0464 |
| Optima 2x00/ 3x00/4x00/ 5x00/7x00/8x00 | Nebulizer, Mira Mist, PEEK Includes 0.5 m sample capillary (0.044 inch od x 0.018 inch id) and gas connector. For routine analysis of samples to 20% TDS (not recommended for aggressive acids or organic solvents). | N0775330 | 8003-0974 |
| Optima 2x00/ 3x00 XL/ 3x00 DV/ 3000SCX/ 4x00/5x00/ 7x00/8x00 | Nebulizer, concentric, U-series, SeaSpray, 2.0 mL/min uptake For routine analysis of samples to 20% TDS. Includes UniFit sample connector (0.75 mm id x 700 mm) and EzyLok gas connector. | N0775345 | G8010-60255 |

## Multimode Sample Introduction System (MSIS)

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 2x00/4x00/5x00/ 7x00 DV/8x00 | Multimode Sample Introduction System (MSIS) Provides simultaneous vapor generation of environmentally sensitive elements including As, Se, and Hg with low µg/L detection limits. It provides better performance than conventional nebulization through thin-film hydride technology, while offering a choice of three modes that eliminates changeover and allows routine and hydride elements to be determined using the same setup. | Not Applicable | 8003-0817 |
| | Peristaltic pump tubing, black/black, 12/pk. Required to pump reagents to MSIS. | Not Applicable | 3710027200 |
| | Peristaltic pump tubing, black/white, 12/pk. Required to pump waste from MSIS. | N8122012 | 3710068900 |

## Spray Chambers

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 2x00/4x00/5x00/7x00/8x00 | Tracey, single-pass, cyclonic spray chamber for high-sensitivity analyses, 50 mL, borosilicate glass, O-ring-free | N0775351 | 8003-0329 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Twister, double-pass, cyclonic spray chamber with helix nebulizer seal, 50 mL, borosilicate glass, O-ring-free | N0775352 | 8003-0330 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Tracey, single-pass, TFE cyclonic spray chamber for high-sensitivity analyses, with helix nebulizer seal, 50 mL, inert (HF-resistant), O-ring-free | N0777496 | 8003-0331 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Cyclonic spray chamber adapter | N0770614 | 8003-0332 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Drain cap assembly, for drain bottle assembly | N0690271 | 8003-0333 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Scott spray chamber assembly made from corrosion-resistant Ryton material, inert to most mineral acids including HF, aqua regia, and most organic solvents; helps to minimize pulsation from the peristaltic pump | N0770357 | 8003-0334 |
| Optima 2x00/4x00/5x00/7x00/8x00 | End cap, allows use of concentric nebulizers with Scott spray chamber | N0680504 | 8003-0335 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Spray chamber drain fitting with tubing and drain adapter, to pump out waste solution through spray chamber drain (does not include peristaltic pump tubing) | N0690268 | 8003-0457 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Tubing, PTFE, 1 mm id, for spray chamber drain, per meter, 12/pk | N8221152 | 8003-0460 |
| Optima 2x00/4x00/5x00/7x00/8x00 | Tracey single-pass, cyclonic spray chamber for high-sensitivity analyses, 50 mL, borosilicate glass, with bung fitting for nebulizer | N0776052 | 8003-0462 |
| Optima 2x00/4x00/5x00/7x00 DV/8x00 | Nebulizer adaptor, 16/6, for spray chambers that have a bung fitting for the nebulizer, not compatible with spray chambers that use the Helix seal | N0776006 | 8003-0953 |
| Optima 5/7/8x00 | End cap O-ring, for spray chamber with type A/C/K nebulizers | 09902033 | 8003-0463 |

Multimode Sample Introduction System (MSIS), 8003-0817

Scott spray chamber assembly, 8003-0334

End cap, for concentric nebulizers with Scott spray chamber, 8003-0335

Top: Window, radial, 8003-0472
Bottom: Window, axial, 8003-0385



Window tube, 8003-0386



O-ring, for dual-view radial purge tube, 8003-0388



O-ring for dual-view axial purge window, 8003-0389



O-ring for torch clamp on vertical torch module, 8003-0390



O-ring for dual-view radial purge tube, 8003-0391



O-ring for dual-view axial purge window, 8003-0392

# Purge Extension Windows

The axial view purge extension window fits into the purge extension between the torch and the optics.

The radial view purge extension is a replaceable tube that fits into the mount between the torch and the optics for the radial view.

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 2x00/7000/8000 | Window, dual-view, axial, quartz | 09992731 | 8003-0383 |
| Optima 2x00/7000/8000 | Window tube, dual-view, radial, short tube, quartz | N0690672 | 8003-0384 |
| Optima 3x00/4x 00/5x00/ 7100/7200/7300 DV/8300 | Window, dual-view, axial, quartz | N0771116 | 8003-0385 |
| Optima 5x00/7100/ 7200/7300 DV/8300 | Window tube, dual-view, radial, quartz | N0770944 | 8003-0386 |
| Optima 3000/3000 SCR/3x00 RL/4300V/5300V/7300V | Window tube, radial view | N0581497 | 8003-0387 |
| Optima 3000/3000 SCR/ 3x00 RL/4300V/ 5300V/7300V | Purge extension, ceramic | N0581455 | 8003-0394 |
| Optima 4x00 DV/5x00 DV Pre November 2004 | Window, dual-view radial | N0770322 | 8003-0472 |
| Optima 5x00/7100/7200/ 7300 DV/8300 | O-ring, for dual-view radial purge tube | 09200064 | 8003-0388 |
| Optima 5x00/7100/7200/ 7300 DV/8300 | O-ring, for dual-view axial purge window | 09902143 | 8003-0389 |
| Optima 5x00/7100/7200/ 7300 DV/8300 | O-ring, for torch clamp on vertical torch module | 09902155 | 8003-0390 |
| Optima 2100/7000/8000 | O-ring, for dual-view radial purge tube | 09921036 | 8003-0391 |
| Optima 2100/7000/8000 | O-ring, for dual-view axial purge window | 09921062 | 8003-0392 |
| Optima 2100/7000/8000 | O-ring, purge outlet | 09921057 | 8003-0393 |

## Peristaltic Pump Tubing

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 5/7/8x00 | Peristaltic pump tubing, black/black, 12/pk. Required to pump reagents to MSIS. | 09908587 | 3710027200 |
| Optima 5/7/8x00 | Peristaltic pump tubes, PVC, 2 stop, red/red, for drain, 12/pk | 09908585 | 8003-0459 |



Load coil, 8003-0379



Load coil, 8003-0380

## RF Load Coils and Accessories

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 2x00/4x00/5x00/7x00 DV | Load coil | N0775300 | 8003-0379 |
| Optima 4300V/5300V/7300V | Load coil | N0771536 | 8003-0380 |
| Optima 5/7/8x00 | Nylon igniter standoff | 09989859 | 8003-0381 |
|  | Igniter spark gap assembly, for type II demountable torch | N0680275 | 8003-0382 |

## Miscellaneous Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| Optima 3x00 | Filter, air, for RF generator inlet | 02509115 | 8003-0455 |
| Optima 2x00/3x00/ 4x00 /5x00/7x00 | Filter cartridge, cooling water | 09904846 | 8003-0469 |
| Optima | ICP-OES chiller coolant mix, 5 half-gallon bottles | N0776099 | 8003-0473 |

**TIPS & TOOLS**

For a listing of supplies for AS-90/90A/90plus/91/93plus/S10 Autosamplers, please see the *Agilent supplies for PerkinElmer AA spectrometers catalog*, publication number 5991-6431EN

# ICP-MS SUPPLIES

## Nebulizers and Supplies
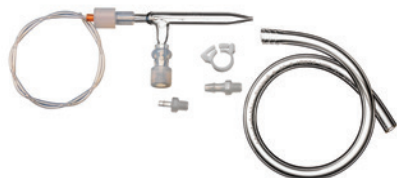


Nebulizer, glass, concentric, type K3, 8003-0476



Clip for type A/C/K nebulizers, 8003-0480



Sample inlet fitting for type A/C/K nebulizers, 8003-0481



Connector, low-dead-volume, PEEK, 8003-0482



Nebulizer, U-series, MicroMist micro-uptake,
8003-0489

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, glass, concentric, type C3, for samples that have high TDS, argon flow, 1 L/min, uptake 3 mL/min | N8102011 | 8003-0475 |
| | Nebulizer, GemClean Cross-Flow II with an end cap, a GemTip clear sapphire sample tip and a GemTip red ruby argon tip, optimized for ICP-MS (0.009 and 0.013 inch orifices), specially manufactured and cleaned for ultratrace analysis | N8120516 | 8003-0483 |
| ELAN 9000/ 6xX00/DRC | Nebulizer, quartz, type A3, high-sensitivity, for ultra-trace applications, argon flow, 1 L/min, uptake 3 mL/min | WE024371 | 8003-0477 |
| NexION | Nebulizer, quartz, type A0.5, high-sensitivity, for ultra-trace applications, argon flow, 1 L/min, uptake 0.5 mL/min | N8145011 | 8003-0478 |
| | Nebulizer, glass, type C0.5, for samples that have high TDS, argon flow, 1 L/min, uptake 0.5 mL/min | N8145012 | 8003-0479 |
| | Nebulizer, glass, concentric, type K3, for samples that have high TDS, argon flow, 1 L/min, uptake 3 mL/min | N0681574 | 8003-0476 |
| ELAN 9000/ 6xX00/DRC/ NexION | Clip for type A/C/K concentric nebulizers | N0777460 | 8003-0480 |
| | Sample inlet fitting for type A/C/K concentric nebulizers, 4 inch x 0.020 inch id, 0.062 inch od, flanged onto female CTFE fitting, with male barb CTFE fitting | N8145016 | 8003-0481 |
| ELAN 9000/ 6xX00/DRC | Connector, low-dead-volume, PEEK, for type A/C/K concentric nebulizer, requires 0.062 inch (1.59 mm) od tubing | WE024372 | 8003-0482 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, U-series, MicroMist micro-uptake, glass, concentric, uptake 0.4 mL/min, with EzyFit connector with 700 mm x 0.50 mm id x 1.3 mm od sample tubing | N0775341 | 8003-0489 |

*(Continued)*

Nebulizer, OpalMist PFA, concentric, 8003-0500



Nebulizer, PFA-ST PTFE ultra clean, 8003-0505



Nebulizer, MicroMist, micro-uptake, 8003-0589



Capillary, PTFE, for ST nebulizer, 8003-0509

## Nebulizers and Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, U-series, SeaSpray, concentric, uptake 2.0 mL/min, with EzyFit connector with 700 mm x 0.50 mm id x 1.3 mm od sample tubing | N0775340 | 8003-0490 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, U-series, SeaSpray, concentric, uptake 0.4 mL/min, with EzyFit connector with 700 mm x 0.50 mm id x 1.3 mm od sample tubing | N0777484 | 8003-0492 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, OpalMist PFA, concentric, uptake 0.4 mL/min, for high-precision analyses requiring high chemical resistance to HF, alkalis, and organics. Also ideal for trace analyses. | N0777485 | 8003-0500 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, PFA-ST3, PTFE, microflow, high performance, clog resistant and chemically inert nebulizer for ICP-MS | N8145101 | 8003-0507 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, PFA-ST PTFE ultra clean, with exchangeable capillaries to provide flow rates from 100-400 μL/min | N8122192 | 8003-0505 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, MicroMist, micro-uptake, glass, concentric, uptake 0.2 mL/min, high performance for small sample volumes, with EzyFit connector with 0.50 mm id x 700 mm x 1.3 mm od sample tubing | N0775342 | 8003-0589 |
| ELAN 9000/ 6xX00/DRC/ NexION | Nebulizer, concentric, U-series, SeaSpray, 1.0 mL/min uptake with EzyFit connector with 700 mm x 0.50 mm id x 1.3 mm od sample tubing | N0774069 | 8003-0964 |
| | Obstruction removal kit, for PFA nebulizers | N8145236 | 8003-0508 |
| | Capillary, PTFE, for ST nebulizer, 1.0 mm id, uptake 1 mL/min | N8145138 | 8003-0509 |
| | Capillary, PTFE, for ST nebulizer, 0.5 mm id, uptake 0.4 mL/min | N8122384 | 8003-0510 |
| | Sample inlet (UniFit) fitting for U-series concentric glass nebulizer, 0.75 mm id x 700 mm x 1.3 mm od | N0774077 | G8010-80035 |

*(Continued)*

Fitting, male barb, CTFE, 8003-0502

Fitting, female barb, CTFE, 8003-0503

Sample capillary, PTFE, 8003-0504

Union, CTFE, for PFA-ST nebulizer, 8003-0506

## Nebulizers and Supplies

| Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|
| EzyLok kit for nebulizer gas side arm<br>Includes EzyLok connector for 4 mm tubing, EzyLok 6 mm hose adaptor and nebulizer hose clip. | N0777413 | 9910127800 |
| Cross-Flow II replacement GemTips, constructed of PEEK for maximum corrosion resistance, orifice sizes color-coded, argon, 0.23 mm (0.009 inch) ruby red, sample, 0.34 mm (0.013 inch) clear sapphire | N8120515 | 8003-0484 |
| Ferrule kit, for Cross-Flow II nebulizer<br>Includes sample and argon ferrules, suits all GemClean Cross-Flow II nebulizers after September 1998. | N0680612 | 8003-0486 |
| Ferrule, argon, for Cross-Flow II nebulizer | 09920515 | 8003-0485 |
| Ferrule, sample, for Cross-Flow II nebulizer, suits all GemClean Cross-Flow II nebulizers after September 1998 | 09920518 | 8003-0488 |
| Sample inlet (UniFit) fitting for U-series concentric glass nebulizer, 0.75 mm id x 700 mm x 1/16 inch od | N0774080 | 8003-0493 |
| Clip, for nebulizer pressure hose, 10/pk | N0773197 | 8003-0495 |
| Fitting, male barb, chlorotrifluoroethylene (CTFE), for sample inlet fitting used with type A/C/K nebulizers | N8145017 | 8003-0502 |
| Fitting, female barb, chlorotrifluoroethylene (CTFE), for sample inlet fitting used with type A/C/K nebulizers | N8145018 | 8003-0503 |
| Sample capillary, PTFE, 0.062 inch od, 0.020 inch id, for sample inlet fitting used with type A/C/K nebulizers | CT-0022T-10 | 8003-0504 |
| Union, CTFE, for PFA-ST nebulizer, connects to UltraClean sampler probe | N8122355 | 8003-0506 |

Spray chamber drain fitting, 8003-0501

Spray chamber, baffled, glass, 8003-0515

O-ring, for baffled quartz cyclonic spray chamber, 8003-0516

Spray chamber, baffled, glass, 8003-0514

## Spray Chambers and Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| ELAN 9000/6xX00/DRC/NexION | Spray chamber drain fitting, 24 inch x 0.030 inch id, 0.062 inch od | N8145015 | 8003-0501 |
| ELAN DRC/DRC Plus/DRC II | Spray chamber, baffled, glass, cyclonic, with ball-joint, for ball-joint injectors | N0773196 | 8003-0515 |
| ELAN 9000/6xX00/DRC/NexION | O-ring, for baffled quartz cyclonic spray chamber (PTFE O-ring type) with ball-joint | 09210011 | 8003-0516 |
| ELAN 9000/6xX00/DRC/NexION | End cap, for Cross-Flow II nebulizer, suits all GemClean Cross-Flow II nebulizers after September 1998 | N8122239 | 8003-0487 |
| ELAN | Spray chamber with auxiliary gas port, 7 mm baffle, quartz, cyclonic, drain line included, connects directly to ESI injectors | N0777034 | 8003-0519 |
| ELAN 9000/6x00/5x00/DRC-e | Spray chamber, glass, cyclonic, O-ring-free | N0775350 | 8003-0520 |
| ELAN 9000/6x00/5x00/DRC-e | Spray chamber, water-cooled, glass, cyclonic, O-ring-free | N0775354 | 8003-0521 |
| ELAN 9000/6x00/5x00/DRC-e | Connector, EzyLok, for jacketed spray chamber | N0774101 | 8003-0496 |
| NexION/ELAN 9000/6x00/5x00/DRC-e | Scott spray chamber, HF-resistant | N8120124 | 8003-0522 |
| NexION/ELAN 9000/6x00/5x00/DRC-e | O-ring, large, for Scott spray chamber | WE013060 | 8003-0523 |
| NexION/ELAN 9000/6x00/5x00/DRC-e | Retaining ring, for Scott spray chamber | WE014081 | 8003-0524 |
| ELAN 9000/6x00/DRC | Mounting for cyclonic spray chamber | WE014034 | 8003-0588 |
| NexION | Drain tubing, 1/16 inch od, 0.038 inch id PTFE tubing | 02506495 | 8003-0605 |
| NexION | Spray chamber, baffled, glass, cyclonic, with ball-joint, for ball-joint injectors | N8145014 | 8003-0514 |
| NexION | Spray chamber, high purity, quartz, cyclonic, O-ring-free, provides excellent sensitivity and stability with low background | N8145120 | 8003-0517 |

## Spray Chambers and Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| NexION | Spray chamber, borosilicate glass, cyclonic, O-ring-free | N8145119 | 8003-0518 |
| NexION | Spray chamber, baffled quartz, cyclonic (PTFE O-ring type) with ball-joint | N8145013 | 8003-0614 |
| NexION | Spray chamber, UltraClean, low volume Scott-style PFA spray chamber, for concentric nebulizers with PFA end cap | N8142000 | 8003-0946 |
| NexION | Spray chamber, UltraClean, low volume Scott-style PFA spray chamber, for concentric nebulizers. Requires PFA injector assembly and PFA end cap | N8122356 | 8003-0947 |
| NexION | End cap, for low volume Scott-style PFA spray chamber, for concentric nebulizer | N8122357 | 8003-0948 |
| NexION | IsoMist temperature controlled spray chamber. Provides the benefits of a temperature-controlled ICP sample introduction system in a compact, convenient package. Temperature range is between -10 °C and +60 °C in 1 °C increments. Includes software, polymer coated PFA double-pass spray chamber, torch interface, and mounting kit. | N8141426 | 8003-0963 |
| | Helix seal for O-ring-free spray chamber, suits any ICP spray chamber that uses the Helix fitting to secure the nebulizer in the side arm | N0777439 | G8010-80042 |
| | Helix locking screw for O-ring-free spray chamber, suits any ICP spray chamber that uses the Helix fitting to secure the nebulizer in the side arm | N0777438 | G8010-80043 |



IsoMist temperature controlled spray chamber, 8003-0963

## Torch Injectors



Injector, alumina, 8003-0530



Injector, alumina, 8003-0532



Injector, quartz, 2.0 mm id, 8003-0590



Injector, quartz ball-joint, 8003-0535



Injector, ball-joint twist-type, 8003-0536



Injector, ball-joint cassette-type, 8003-0537

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector, alumina, 2.0 mm id | N8126041 | 8003-0530 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector, alumina, 1.5 mm id | N8126040 | 8003-0531 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector, alumina, 0.85 mm id | N8126039 | 8003-0532 |
| NexION/ELAN DRC/ DRCplus/DRC II | Injector, quartz ball-joint, 2.0 mm id, general purpose, for pass-through ball-joint injector support adapter | WE023948 | 8003-0533 |
| NexION/ELAN DRC-e/ 9000/6x00/5000 | Injector, quartz, 2.0 mm id | N8125029 | 8003-0590 |
| NexION/ELAN DRC/ DRCplus/DRC II | Injector, quartz ball-joint, 1.5 mm id, for organics, for pass-through ball-joint injector support adapter | WE027005 | 8003-0534 |
| NexION/ELAN DRC/ DRCplus/DRC II | Injector, quartz ball-joint, 0.85 mm id, for volatile organics, for pass-through ball-joint injector support adapter | WE027030 | 8003-0535 |
| ELAN DRC/DRCplus/ DRC II | Support adaptor, for twist-type ball-joint injector | WE023951 | 8003-0536 |
| ELAN DRC II/NexION | Support adaptor, for cassette-type ball-joint injector | W1012406 | 8003-0537 |

*(Continued)*

### TIPS & TOOLS

Alumina injectors are compatible with twist-type and cassette torch mounts. They are corrosion-resistant to all mineral acids, including HF and aqua regia, but can also be used with less volatile organic solvents, e.g., xylene. The 2.0 mm id alumina injector is the standard injector, but a range of other sizes are available.

### TIPS & TOOLS

Quartz injectors are compatible with twist-type and cassette torch mounts. They are recommended for organic solvents and non-HF matrices. Use narrow-bore injectors for more volatile organic solvents such as gasoline.

Injector tube, sapphire, 8003-0538

Injector assembly, PFA-Quartz, 8003-0539

Injector assembly, PFA-Quartz, 8003-0540

Injector assembly, PFA-Sapphire twist-type, 8003-0541

Injector assembly, PFA-Sapphire cassette-type, 8003-0542

Injector assembly, PFA-Platinum twist-type, 8003-0543

Injector assembly, PFA-Platinum cassette-type, 8003-0544

## Torch Injectors

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| NexION/ELAN DRC-e/ 9000/6x00/5000 | Injector tube, sapphire, 2.0 mm id, demountable injector, for HF-resistant sample introduction system | N0695495 | 8003-0538 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector assembly, PFA-Quartz twist-type, 1.5 mm id | N8122394 | 8003-0539 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector assembly, PFA-Quartz, cassette-type, 1.5 mm id | N8122413 | 8003-0540 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector assembly, PFA-Sapphire twist-type, 1.8 mm id, for high matrix geochemistry and HF applications where low ppt Al is not required | N8122358 | 8003-0541 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector assembly, PFA-Sapphire cassette-type, 1.8 mm id, for environmental, geochemistry and HF applications | N8122411 | 8003-0542 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector assembly, PFA-Platinum twist-type, 2.0 mm id | N8122359 | 8003-0543 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector assembly, PFA-Platinum cassette-type, 2.0 mm id | N8122412 | 8003-0544 |

Injector support adapter, twist-type, 8003-0545

Injector support adapter, twist-type, 8003-0546

O-ring kit, for injector support adapter, 8003-0547

Injector support adapter, 8003-0548

O-ring, for injector support adapter, external twist/cassette-type, 8003-0549

O-ring, for injector support adapter, internal twist/ cassette-type, 8003-0551

## Torch Injectors

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| ELAN DRC-e/ 9000/6x00/5000 | Injector support adapter, twist-type, for corrosion-resistant torch and Ryton Scott spray chamber and twist-type torch mounts before April 2005 | N8122007 | 8003-0545 |
| ELAN DRC-e/ 9000/6x00/5000 | Injector support adapter, twist-type, assembled with O-rings, for corrosion-resistant torch and Ryton Scott spray chamber and twist-type torch mounts before April 2005 | N8120116 | 8003-0546 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | O-ring kit, for injector support adapter | N8120100 | 8003-0547 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | Injector support adapter, for cassette-type non-ball-joint injectors | W1013266 | 8003-0548 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | O-ring, for injector support adapter, internal, twist/cassette-type, 4/pk | 09210011 | 8003-0549 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | O-ring, for injector support adapter, external (large) cassette-type | W1013545 | 8003-0550 |
| NexION/ELAN DRC-e/ 9000/6x00/5000/500 | O-ring, for injector support adapter, external, twist/cassette-type | 09210012 | 8003-0551 |
| ELAN 9000/6x00/DRC | Fitting, Swagelok, stainless steel nut, 1/4 inch | 09903464 | 8003-0593 |
| ELAN 9000/6x00/DRC | Tube fitting | 09903465 | 8003-0594 |

Torch, demountable, quartz, 8003-0552



Torch, demountable, quartz, high-efficiency, 8003-0553

## Torches and Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| NexION/ELAN | Torch, quartz, demountable, used with a fully replaceable sample injector made of fused alumina, quartz, or sapphire (supplied separately) | N8122006 | 8003-0552 |
| ELAN 9000/ 6x00/DRCs/NexION | Torch, demountable, quartz, high-efficiency, for reduced argon gas flow, requires the high-efficiency torch kit for first-time installation | W1008384 | 8003-0553 |
| ELAN 9000 and 6x00 | Torch kit, high-efficiency Includes high-efficiency torch and flow restrictors to enable operation with reduced argon gas flow. | W1007468 | 8003-0554 |
| NexION/ELAN 9000/ 6x00/DRCs | Torch alignment tool, to align the torch in the load coil | WE015554 | 8003-0555 |
| NexION | Mount, for cassette torch, excludes demountable torch and injector | W1037485 | 8003-0556 |
| ELAN 9000/6x00/DRC | O-ring kit, for type II torch | 09903094 | 8003-0591 |

Sampler cone, nickel, large-orifice, 8003-0571
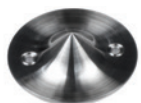
Skimmer cone, nickel, 8003-0572

Skimmer cone, nickel, 1.1 mm orifice, 8003-0573

Skimmer cone, nickel, 0.9 mm orifice, 8003-0574

Hyper skimmer cone, 8003-0579

Screw, for hyper skimmer cone, 8003-0581

O-ring, for sampler cone, 8003-0582

O-ring, for skimmer cone, 8003-0583

Tool, for cone removal, 8003-0586

## Interface Cones and Supplies

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| NexION | Sampler cone, nickel, large-orifice, for high and low sample-uptake conditions | W1033612 | 8003-0571 |
| NexION | Skimmer cone, nickel | W1026356 | 8003-0572 |
| NexION | Sampler cone, platinum | W1033614 | 8003-0575 |
| NexION | Skimmer cone, platinum | W1026907 | 8003-0576 |
| NexION | Hyper skimmer cone | W1033995 | 8003-0579 |
| NexION | O-ring, for hyper skimmer cone | 09902123 | 8003-0580 |
| NexION | Screw, for hyper skimmer cone | 09919737 | 8003-0581 |
| NexION | Sampler gasket for hyper skimmer cone | W1040148 | 8003-0584 |
| NexION | Tool, for cone removal | W1034694 | 8003-0585 |
| ELAN 9000/6x00/DRC | Sampler cone, nickel, 1.1 mm orifice, not compatible with NexION | WE021140 | 8003-0573 |
| ELAN 9000/6x00/DRC | Skimmer cone, nickel, 0.9 mm orifice, not compatible with NexION | WE021137 | 8003-0574 |
| ELAN 9000/6x00/DRC | Sampler cone, platinum, not compatible with NexION | WE027802 | 8003-0577 |
| ELAN 9000/6x00/DRC | Skimmer cone, platinum, not compatible with NexION | WE027803 | 8003-0578 |
| ELAN 9000/6x00/DRC | O-ring, for sampler cone, 5/pk | N8120511 | 8003-0582 |
| ELAN 9000/6x00/DRC | O-ring, for skimmer cone, 5/pk | N8120512 | 8003-0583 |
| ELAN 9000/6x00/DRC | Tool, for cone removal | WE017142 | 8003-0586 |

### TIPS & TOOLS

Nickel interface cones provide the most economical operation as it is a rugged and long-lasting material. They are recommended for the majority of sample types.

Platinum interface cones provide better resistance to chemical attack and are required for analysis of aggressive acids (e.g. hydrofluoric acid) and other more corrosive sample types.

# AGILENT SUPPLIES FOR PerkinElmer ICP-MS



Ion lens, Series II, 8003-0564

## Ion Lenses

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| ELAN 9000/6x00/DRCs manufactured after January 1998 | Ion lens, Series II | WE018034 | 8003-0564 |
| ELAN 9000/DRCs manufactured after April 2005 | Cassette lens shadow stop | W1013361 | 8003-0566 |

## Detectors

| Instrument | Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|---|
| NexION | SimulScan dual-stage detector | N8145000 | 8003-0561 |
| ELAN 9000/6x00/DRCs* manufactured prior to April 2005 | SimulScan dual-stage detector, original | N8125001 | 8003-0562 |
| ELAN 9000/6x00/DRCs manufactured after April 2005 | SimulScan dual-stage detector, improved | N8125050 | 8003-0563 |

## Sample Introduction Kits

| Description | Similar to OEM Part No. | Agilent Part No. |
|---|---|---|
| Sample introduction kit (PFA-Platinum), for NexION, HF-resistant. Recommended for analysis of semiconductor-grade chemicals and Si wafer samples. Includes 2 PFA MicroFlow nebulizers, PFA endcap with additional gas port, PFA spray chamber, Pt injector, Pt Shield, and quartz torch. | N8142001 | 8003-0511 |
| Sample introduction kit (PFA-Sapphire), for NexION, HF-resistant. Provides a chemically inert and clean introduction system. Includes a PFA-ST nebulizer, PFA endcap with additional gas port, PFA spray chamber, Sapphire injector, Pt Shield, and quartz torch. | N8142002 | 8003-0512 |
| Sample introduction kit (HF-resistant), for NexION. Includes Scott spray chamber with a Cross-Flow II nebulizer, 2 mm alumina injector, injector support adapter, O-rings, tubing, and connectors. | N8140507 | 8003-0513 |

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**TIPS & TOOLS**

For a listing of supplies for AS-90/90A/90plus/91/93plus/S10 Autosamplers, please see the *Agilent supplies for PerkinElmer AA spectrometers catalog*, publication number 5991-6431EN