



Elemental Scientific

Agilent Catalog



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ST Nebulizers

ES-4040-YY

PolyPro ST Nebulizer

HF-resistant, high-performance self-aspirating nebulizer with detachable sample capillary. Polypropylene nebulizer body. May be pumped from 0.1 to 3.0 ml/min. Includes one flanged Teflon PFA sample capillary, (See appendix B)



ES-2040-YY

PFA ST Nebulizer

High purity, HF-resistant, high performance self-aspirating nebulizer with detachable sample capillary. All fluoropolymer construction. May be pumped from 0.1 to 2.0 ml/min. Includes one flanged Teflon PFA sample capillary, (See appendix B)



A variety of alternate flanged Teflon sample capillaries and autosampler probes are available for the PolyPro ST Nebulizer and the PFA ST Nebulizer. Sample capillaries are securely attached to the nebulizer using a threaded, zero dead volume flanged fitting. The selection of sample capillaries and sampling probes appears on the following page.

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Sample Capillaries for ST Nebulizers

Part Number	i.d.	Measured self-aspiration rate (@1L/mAr)
ES-2045	0.15 mm	20 μ L/min ■
ES-2043	0.2 mm	50 μ L/min ■
ES-2042	0.25 mm	100 μ L/min ■
ES-2041	0.5 mm	400 μ L/min ■
ES-2044	0.8 mm	700 μ L/min ■



Colored markers indicate internal diameter. It is recommended that integrated capillary nebulizers (not ST-type) be used for flow rates < 100 μ L/min. For peristaltic pumping, either 0.25 mm i.d. (0.1 to 1 ml/min) or 0.5 mm i.d. (0.5 to 3ml/min) is recommended.

Autosampler Probes for ST Nebulizers

Part Number	i.d.	Measured self-aspiration rate (@1L/mAr)
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ST-Agilent IAS probes (80 cm)*

ES-5016-1301-080	0.15 mm i.d.	
ES-5016-1303-080	0.3 mm i.d.	
ES-5016-1305-080	0.5 mm i.d.	
ES-5016-1308-080	0.8 mm i.d.	

ST-Cetac ASX-100 probes (80 cm)*

ES-5016-0150-080	0.15 mm i.d.	20 μ L/min ■
ES-5016-0200-080	0.20 mm i.d.	50 μ L/min ■
ES-5016-0250-080	0.25 mm i.d.	100 μ L/min ■

ST-Cetac ASX-500/510 probes (120 cm)*

ES-5017-0150-120	0.15 mm i.d.	20 μ L/min ■
ES-5017-0200-120	0.2 mm i.d.	50 μ L/min ■
ES-5017-0250-120	0.25 mm i.d.	100 μ L/min ■
ES-5017-0500-120	0.5 mm i.d.	400 μ L/min ■
ES-5017-0800-120	0.8mm i.d.	700 μ L/min ■

ST-Manual sampling probes (80 cm)*

ES-5017-2150-080	0.15 mm i.d.	20 μ L/min ■
ES-5017-2200-080	0.2 mm i.d.	50 μ L/min ■
ES-5017-2250-080	0.25 mm i.d.	100 μ L/min ■
ES-5017-2500-080	0.5 mm i.d.	400 μ L/min ■
ES-5017-2750-080	0.8 mm i.d.	700 μ L/min ■



*Standard probe lengths indicated by the last three digits of the part number.

- 80 cm (-080)
- 100 cm (-100)
- 120 cm (-120)
- 150 cm (-150)

Contact ESI for custom length sampling probes.

PFA MicroFlow Nebulizers with Integrated Capillaries

PFA MicroFlow nebulizers are constructed entirely from chemically resistant fluoropolymers, ideal for strong acids, alkalis, organics, high salt solutions, and high solid concentrations. They are resistant to clogging, are reliably self-aspirated or pumped, and produce a fine aerosol for high transport efficiency and high sensitivity.

Part Number	Model	Measured self- aspiration rate (@ 1L/m Ar)
ES-2020-0002	PFA-20	20-35 $\mu\text{L}/\text{min}$
ES-2000-0002	PFA-50	45-65 $\mu\text{L}/\text{min}$
ES-2001-0002	PFA-75	65-95 $\mu\text{L}/\text{min}$
ES-2002-0002	PFA-100	90-150 $\mu\text{L}/\text{min}$
ES-2003-0002	PFA-200	150-250 $\mu\text{L}/\text{min}$
ES-2005-0002	PFA-400	300-400 $\mu\text{L}/\text{min}$



PFA MicroFlow Nebulizers with Integrated Sampling Probes

These nebulizers allow self-aspiration at low sample consumption rates with any autosampler while providing the same benefits of the PFA MicroFlow nebulizer. The integrated sampling probe is constructed by encapsulating a polyimide support between layers of Teflon to provide a chemically resistant probe that is mechanically stable and resilient.

Agilent IAS (80 cm)*

ES-2020-0700-080	PFA-20	20-35 $\mu\text{L}/\text{min}$
ES-2000-0700-080	PFA-50	45-65 $\mu\text{L}/\text{min}$
ES-2001-0700-080	PFA-75	65-95 $\mu\text{L}/\text{min}$
ES-2002-0700-080	PFA-100	90-150 $\mu\text{L}/\text{min}$
ES-2005-0700-080	PFA-400	300-400 $\mu\text{L}/\text{min}$

Cetac ASX-100 (80 cm)*

ES-2020-0100-080	PFA-20	20-35 $\mu\text{L}/\text{min}$
ES-2000-0100-080	PFA-50	45-65 $\mu\text{L}/\text{min}$
ES-2001-0100-080	PFA-75	65-95 $\mu\text{L}/\text{min}$
ES-2002-0100-080	PFA-100	90-150 $\mu\text{L}/\text{min}$

Cetac ASX-500/510 (120 cm)*

ES-2002-0500-120	PFA-100	90-150 $\mu\text{L}/\text{min}$
ES-2003-0500-120	PFA-200	150-250 $\mu\text{L}/\text{min}$
ES-2005-0500-120	PFA-400	250-400 $\mu\text{L}/\text{min}$

Manual Sampling Probes (80 cm)*

ES-2020-0200-080	PFA-20	20-35 $\mu\text{L}/\text{min}$
ES-2000-0200-080	PFA-50	45-65 $\mu\text{L}/\text{min}$
ES-2001-0200-080	PFA-75	65-95 $\mu\text{L}/\text{min}$
ES-2002-0200-080	PFA-100	90-150 $\mu\text{L}/\text{min}$
ES-2005-0200-080	PFA-400	300-400 $\mu\text{L}/\text{min}$



*Standard probe lengths indicated by the last three digits of the part number.

- 80 cm (-080)
- 100 cm (-100)
- 120 cm (-120)
- 150 cm (-150)

Contact ESI for custom length sampling probes.

Sampling Probes

Agilent IAS probes (80 cm)*

ES-5006-1301-080	0.15 mm i.d.
ES-5006-1303-080	0.3 mm i.d.
ES-5006-1305-080	0.5 mm i.d.
ES-5006-1308-080	0.8 mm i.d.



Agilent IAS probe

Cetac ASX-100 probes (80 cm)*

ES-5006-0150-080	0.15 mm i.d.
ES-5006-0200-080	0.20 mm i.d.
ES-5006-0250-080	0.25 mm i.d.



ASX-100 Probe

Cetac ASX-500/510 probes (120 cm)*

ES-5007-0150-120	0.15 mm i.d.
ES-5007-0200-120	0.2 mm i.d.
ES-5007-0250-120	0.25 mm i.d.
ES-5007-0500-120	0.5 mm i.d.
ES-5007-0800-120	0.8mm i.d.



ASX-500 Probe

Manual Sampling probes (80 cm)*

ES-5007-2150-120	0.15 mm i.d.
ES-5007-2200-120	0.2 mm i.d.
ES-5007-2250-120	0.25 mm i.d.
ES-5007-2500-120	0.5 mm i.d.
ES-5007-2800-120	0.8mm i.d.

*Standard probe lengths indicated by the last three digits of the part number.

- 80 cm (-080)
- 100 cm (-100)
- 120 cm (-120)
- 150 cm (-150)

Contact ESI for custom length sampling probes.

ST Nebulizer and Autosampler Probe Kits for Peristaltic Pumping

When peristaltic pumping a sample, it is important that the entire sample uptake line be of the same internal diameter. These kits combine the entire uptake line with a durable, long life PFA-ST or PolyPro-ST nebulizer and a PFA Teflon® autosampler probe, including all pump tubing and fittings in uniform dimensions for a variety of low, medium, and high uptake rates.

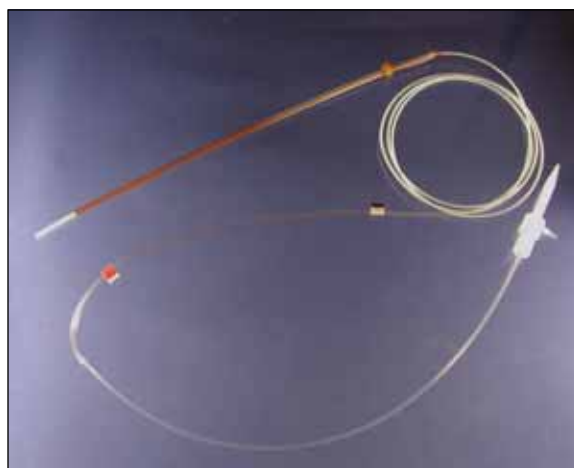
PFA-ST Nebulizer + Autosampler Probe Kit

Nebulizer plus autosampler probe kit includes MicroFlow PFA-ST nebulizer, autosampler probe, peristaltic pump tubing and fittings.

PolyPro-ST Nebulizer + Autosampler Probe Kit

Nebulizer plus autosampler probe kit includes MicroFlow PolyPro-ST nebulizer, autosampler probe, peristaltic pump tubing and fittings.

PFA-ST Kit Part Number	PolyPro-ST Kit Part Number	i.d.
<u>Agilent IAS kits</u>		
ES-2040-0710	ES-4040-0710	0.15 mm
ES-2040-0730	ES-4040-0730	0.3 mm
ES-2040-0750	ES-4040-0750	0.5 mm
ES-2040-0780	ES-4040-0780	0.8 mm
<u>Cetac ASX-100 kits</u>		
ES-2040-0110	ES-4040-0110	0.15 mm
ES-2040-0120	ES-4040-0120	0.2 mm
ES-2040-0130	ES-4040-0130	0.25 mm
<u>Cetac ASX-500/510 kits</u>		
ES-2040-0510	ES-4040-0510	0.15 mm
ES-2040-0520	ES-4040-0520	0.2 mm
ES-2040-0530	ES-4040-0530	0.25 mm
ES-2040-0550	ES-4040-0550	0.5 mm
ES-2040-0580	ES-4040-0580	0.8 mm



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Apex

Fully integrated, high sensitivity inlet system for ICP spectroscopy

Apex uses a heated cyclonic spray chamber coupled to a Peltier cooled desolvation system that provides about 10X enhancement in sensitivity using a much smaller sample uptake (300µl/min). It provides ppq BEC's, has a fast rinse-out time, is highly stable, and is compact and easy to use. The standard Apex kit includes:

- Apex High Efficiency Inlet System,
- Two Microflow PFA Nebulizers (See Appendix A),
- Integrated Peristaltic drain pump,
- Connectors to adapt to the ICPMS or ICPAES instrument.

Apex Q - Quartz inlet system

ES-4361-1000-xx for HP 4500

ES-4362-1000-xx for Agilent 7500

Apex HF - Polypropylene inlet system

ES-4461-1000-xx for HP 4500

ES-4462-1000-xx for Agilent 7500

Apex IR - Isotope Ratio

ES-4561-1000-xx for HP 4500

ES-4562-1000-xx for Agilent 7500



The Apex inlet system

Membrane Desolvation Modules for Apex

ES-4599-2000 ACM Module

Peltier cooled Nafion microporous fluoropolymer membrane desolvator attaches directly to any Apex for improved desolvation efficiency. The Nafion membrane reduces oxides and interferences without the loss of analytes.



ES-4599-0001 ApexAreo

Nafion fluoropolymer membrane desolvation module removes residual solvent vapor in the sample aerosol stream. Similar to the ACM without Peltier-cooling. May be used with any Apex model.



PC³ Peltier Cooler for Cyclonic Spray Chambers

PC³

The PC³ is a small, simple, and robust cooler for ICPMS and ICPAES cyclonic spray chambers. The PC³ cools the outer walls of the cyclonic spray chamber to a constant temperature enhancing long-term signal stability, reducing polyatomic ion interferences, such as oxides, and reducing solvent loading when volatile organic solvents are analyzed.

PC³ Inlet System ES-41zz-debu-aitg-xx
PC³ Peltier Cooler ES-4100



PC³-SSI

The PC³-SSI is an enhanced stability sample introduction system designed for isotope ratio analyses or any ICPMS analysis requiring high precision. The PC³-SSI is a single unit that combines the features of the PC³ cooled cyclonic spray chamber with ESI's Stable Sample Introduction (SSI) spray chamber to improve short-term and long-term stability and isotope ratio precision.

PC³ SSI Inlet System ES-42zz-111u-ait0-xx



Create a part number by selecting the instrument model (zz), spray chamber material (d), auxiliary gas port (e), baffle (b), choose the outlet for the ICP injector (u), electrical outlet configuration (a), injector type (i), torch type (t), choose the mounting bracket (g), and choose the nebulizer configuration (xx). (See Appendix)

zz = instrument

- zz = 61 Agilent 4500
- zz = 62 Agilent 7500

Spray Chamber Options (debu)

d = chamber material (normally 1 or 2)

- d = 1 quartz (High Purity)
- d = 2 polypropylene (HF resistant)
- d = 4 glass

e = auxiliary port (mixed gas & organic solvents)

- e = 0 no aux. port (standard)
- e = 1 threaded aux. port, 1/4-28 (oxygen or make up gas)
- e = 2 aux. port, 2mm x 4 mm

b = baffle type

- b = 0 non-baffled (ICP-AES)
- b = 1 baffled (ICP-MS)

u = outlet connector type

- u = 1 ESI injector connection
- u = 8 12/5 socket connection

a = electrical outlet configuration

- a = 1 North America and Japan
- a = 2 Europe
- a = 3 UK
- a = 4 China
- a = 5 India
- a = 6 Australia

i = injector type

- i = 0 No injector
- i = 1 ESI 1.5mm Quartz
- i = 2 ESI 2mm Quartz
- i = 4 ESI 1.8mm Sapphire
- i = 7 ESI 2mm Platinum
- i = 9 OEM Injector

t = torch type

- t = 0 no torch
- t = 1 OEM Torch
- t = 2 ESI o-ring-free specified
- t = 3 ESI (o-ring specified)
- t = 4 One-piece quartz

g = mounting bracket

- g = 0 no mounting bracket
- g = 1 with mounting bracket

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3100 Series O-ring-free Cyclonic Spray Chambers

ES-31zz-debu

Create a part number by selecting the instrument model (zz), spray chamber material (d), auxiliary gas port (e), baffle (b), and choose the outlet for the ICP injector (u).

The additional price for an auxiliary port and baffle are indicated below.



PolyPro Cyclonic Spray Chamber. Fits any 6mm nebulizer. May be used with PC³.

Spray Chamber Options

d = chamber material (normally 1 or 2)

- d = 1 quartz (High Purity)
- d = 2 polypropylene (HF resistant)
- d = 4 glass

e = auxiliary port (required for Agilent and for organic solvent applications)

- e = 0 no aux. port (standard configuration)
- e = 1 threaded aux. port, 1/4-28 (standard aux. port for oxygen or make up gas)
- e = 2 aux. port, 2mm x 4 mm

b = baffle type

- b = 0 non-baffled (recommended for ICP-AES)
- b = 1 baffled (recommended for ICP-MS)

u = outlet connector type

- u = 1 ESI injector connection
- u = 8 12/5 socket connection

zz = instrument

- zz = 61 Agilent 4500
- zz = 62 Agilent 7500

Note: All 3100 series Cyclonic Spray Chambers will fit the ESI PC³ Peltier Cooler.
3100 Series Cyclonic Spray Chambers may also be used stand-alone.

Endcap and Spray Chambers

ES-5010-0350 35mm PFA PureCap Endcap

Secure, o-ring free connection to quartz or PFA spray chambers. Second orthogonal gas port for adding an additional or mixed gas to spray chamber. Interfaces with any 6mm nebulizer. Includes addition gas line.



PFA spray chamber for HP 4500 and Agilent 7500

Durable, long-life PFA Teflon construction minimizes contamination and chemical compatibility issues. Fittings available to attach to both ESI and manufacturer's injectors. Includes one drain line.

ES-2122 35mm PFA spray chamber

ES-2122-5351 with PureCap endcap



ES-2122-8000 35mm PolyPro spray chamber.

ES-2122-8351 with PureCap endcap



ES-2122-1000 35mm quartz spray chamber

\$350

\$575

ES-2122-1351 with PureCap endcap

\$670

\$1,075



A variety of connectors for attaching spray chambers to injectors appears on the next page. All spray chambers include one drain line.

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Connectors for Spray Chambers and Injectors

PFA connector for 35mm PFA spray chamber and ESI injectors

ES-2122-4542 for HP 4500



ES-2122-7572 for Agilent 7500



PFA connector for 35mm PFA spray chamber and one-piece quartz torches

ES-2122-4546 for HP 4500



ES-2122-7576 for Agilent 7500



PFA connector for 35mm polypropylene spray chamber and ESI injectors

ES-2122-4544 for HP 4500



ES-2122-7574 for Agilent 7500



Quartz connector for 35mm quartz spray chamber and one-piece quartz torches

ES-2122-4541 for HP 4500



ES-2122-7571 for Agilent 7500



Injectors and Torches

O-ring-free injectors for Agilent ICPMS

Quartz injectors

ES-1323-0100	1mm i.d.	environmental
ES-1323-0150	1.5 mm i.d.	standard
ES-1323-0200	2mm i.d.	organics
ES-1323-0250	2.5mm i.d.	volatile organics



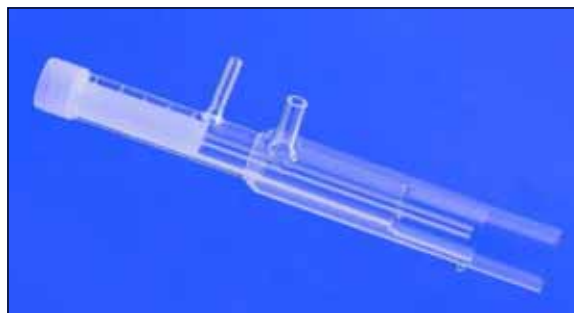
O-ring free Sapphire Injector for Agilent ICPMS

Sapphire injectors

ES-1303-0103	1 mm i.d.
ES-1303-0150	1.5 mm i.d.
ES-1303-0160	1.6 mm i.d.
ES-1303-0180	1.8 mm i.d.

Platinum injectors

ES-1313-0150	1.5mm i.d.
ES-1313-0180	1.8mm i.d.
ES-1313-0200	2.0 mm i.d.
ES-1313-0250	2.5 mm i.d.



Precision Quartz torch for Agilent 7500 shown with o-ring free injector

O-ring-free precision quartz torch

ES-1302-4500	for HP 4500
ES-1302-7500	for Agilent 7500

Shield Torch Bonnet

ES-1320-7500	for Agilent 7500
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O-ring-free seal

- reduces contamination
- easy to clean
- easy to insert

Precision alignment of torch and injector eliminates injector wobble and off-axis deflection.

One piece quartz torch

with 1.5 mm i.d. organic injector

ES-1302-4510	for HP 4500
ES-1302-7510	for Agilent 7500

with 2.5 mm i.d. aqueous injector

ES-1302-4511	for HP 4500
ES-1302-7511	for Agilent 7500



One-Piece quartz torch for Agilent 7500

Upgrade Kits

PFA Inert Kits

High purity, O-ring free upgrade package. Includes two PFA MicroFlow nebulizers (see Appendix A), PureCap endcap, 47mm PFA spray chamber, adapter, injector, and quartz torch.

PFA Kits for HP 4500

- ES-2160-4500-XX with 1.8mm sapphire injector
- ES-2160-4505-XX with 1.6mm organic sapphire injector
- ES-2161-4505-XX with 1.5mm platinum injector
- ES-2161-4500-XX with 2mm platinum injector
- ES-2161-4506-XX with 2mm organic platinum injector
- ES-2165-4500-XX with 1.5mm organic quartz injector

PFA Kits for Agilent 7500

- ES-2160-7500-XX with 1.8mm sapphire injector
- ES-2160-7505-XX with 1.6mm organic sapphire injector
- ES-2161-7505-XX with 1.5mm platinum injector
- ES-2161-7500-XX with 2mm platinum injector
- ES-2161-7506-XX with 2mm organic platinum injector
- ES-2165-7500-XX with 1.5mm organic quartz injector



Polypropylene Kit

High purity, O-ring free upgrade package. Includes two PFA MicroFlow nebulizers (user specified), PureCap endcap, 35mm polypropylene spray chamber, connector, 1.5mm Quartz o-ring free injector, and precision quartz torch.

- ES-2163-4500 for HP 4500
- ES-2163-7500 for Agilent 7500



Basic Quartz Kit

High purity, O-ring free upgrade package. Includes one PFA MicroFlow nebulizer (user specified) PureCap endcap, 35mm Quartz spray chamber, Quartz connector and One Piece Quartz Torch

Basic Quartz Kits for HP 4500

- ES-2162-4500 with 1.5mm i.d. Organic injector
- ES-2162-4511 with 2.5mm i.d. Aqueous injector

Basic Quartz Kits for Agilent 7500

- ES-2162-7500 with 1.5mm i.d. Organic injector
- ES-2162-7511 with 2.5mm i.d. Aqueous injector



Upgrade Kits

Quartz Cyclonic Kit

High purity, O-ring free upgrade package. Includes two PFA MicroFlow nebulizers (see Appendix A), O-ring free Quartz Cyclonic Spray Chamber, connector, 1.5mm Quartz o-ring free injector, and precision quartz torch.

ES-2164-4500 for HP 4500
ES-2164-7500 for Agilent 7500



Stable Sample Introduction (SSI) Kit

Enhanced stability sample introduction system for isotope ratio analyses. All-quartz, o-ring-free spray chamber employs an additional mixing chamber that homogenizes the nebulized sample aerosol prior to introduction to the ICPMS. Includes two PFA MicroFlow nebulizers (see Appendix A), quartz dual spray chamber, clamp and fittings.

ES-2101-4500-XX Stable Sample Introduction Kit for HP 4500
ES-2101-7500-XX Stable Sample Introduction Kit for Agilent 7500
ES-2101-2161 Quartz dual cyclonic spray chamber

Laser Ablation Kits

Includes two PFA-20A nebulizers, Quartz dual spray chamber with additional gas port, laser gas line kit, o-ring free quartz injector and two quartz torches.

Laser Ablation Kits for HP 4500

ES-2165-2451 without sampler and skimmer cones
ES-2165-2453 with Nickel sampler and skimmer cones
ES-2165-2454 with Platinum sampler and skimmer cones

Laser Ablation Kits for Agilent 7500

ES-2165-2751 without sampler and skimmer cones
ES-2165-2753 with Nickel sampler and skimmer cones
ES-2165-2754 with Platinum sampler and skimmer cones

PFA Super Pure Kit for Agilent

Includes typical sample introduction components and spares for at least 2 years of operation.

- 8 MicroFlow nebulizers
(2 each PFA-20, PFA-50 PFA-100 and PFA ST)
- 3 PFA spray chambers and PureCap endcaps
- 3 o-ring free sapphire injectors
- 1 o-ring-free Pt injector
- 3 ESI precision quartz torches
- Laser Ablation connector line.

ES-9081-4500 for HP 4500
ES-9081-7500 for Agilent 7500



2500 Series Inert Cyclonic Spray Chamber Kits

The 2500 series kit features the ESI Cyclonic Spray Chamber in quartz, polypropylene, or glass, and includes an O-ring-free 1.8 mm sapphire injector with quartz torch and two nebulizers (see Appendix A).

ES-25zz-debu-xx 2500 Series Inert Cyclonic Spray Chamber Kit



Cyclonic Spray Chamber Kit
for Finnigan Element

The above prices include two PFA MicroFlow nebulizers. Unless otherwise specified, 2500 series kits will include one PFA-100 nebulizer and one PFA-ST nebulizer (xx = 21).

Create a part number by selecting the instrument model (zz), spray chamber material (d), auxiliary gas port (e), baffle (b), choose the outlet for the ICP injector (u), and choose the nebulizer combination (xx).

Spray Chamber Options (debu)

d = chamber material (normally 1 or 2)

- d = 1 quartz (High Purity)
- d = 2 polypropylene (HF resistant)
- d = 4 glass

e = auxiliary port

- e = 0 no aux. port (normal configuration)
- e = 1 threaded aux. port, 1/4-28 (for oxygen or make up gas)
- e = 2 aux. port, 2mm x 4 mm

b = baffle type

- b = 0 non-baffled (ICP-AES)
- b = 1 baffled (ICP-MS)

u = outlet connector type

- u = 1 ESI injector connection (straight connection)
- u = 8 12/5 socket connection

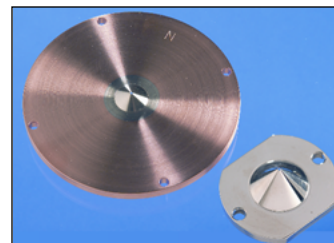
zz = instrument

- zz = 61 Agilent 4500
- zz = 62 Agilent 7500

ICPMS Cones

Part Number

ES-3000-1601	25mm insert Nickel Sampler Cone
ES-3000-1603	Nickel Skimmer Cone
ES-3000-1606	10mm Insert Platinum Sampler Cone
ES-3000-1607	18mm Insert Platinum Sampler Cone
ES-3000-1608	7.2mm Insert Platinum Skimmer Cone
ES-3000-1650	Platinum Shield Plate for 4500
ES-3000-1604	Nickel Skimmer Cone for 7500c
ES-3000-1609	Platinum Skimmer Cone for 7500c
ES-3000-1602	Nickel Sampler Cone for T-Mode
ES-3000-1605	Nickel Skimmer Cone for T-Mode



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Appendices

Appendix A

For alternate nebulizer combinations with the Apex, PC³, and Upgrade Kits please use the following reference table

xx = nebulizer options

xx = 10	PFA-20	PFA-20	
xx = 11	PFA-20	PFA-50	
xx = 12	PFA-20	PFA-100	
xx = 13	PFA-20	PFA-400	
xx = 14	PFA-20	PFA-ST	
xx = 15	PFA-50	PFA-50	
xx = 16	PFA-50	PFA-100	
xx = 17	PFA-50	PFA-400	
xx = 18	PFA-50	PFA-ST	
xx = 19	PFA-100	PFA-100	Standard for ICPMS system upgrade kits
xx = 20	PFA-100	PFA-400	
xx = 21	PFA-100	PFA-ST	Standard for Apex and PC ³ kits
xx = 22	PFA-400	PFA-400	
xx = 23	PFA-400	PFA-ST	
xx = 24	PFA-ST	PFA-ST	
xx = 25	PFA-20		
xx = 26	PFA-50		
xx = 27	PFA-100		
xx = 28	PFA-400		
xx = 29	PFA-ST		
xx = 40	PolyPro-ST	PolyPro-ST	
xx = 41	PolyPro-ST		

For example: If the part number is ES-4300-1002-XX, to specify two PFA-100 nebulizers, replace XX at the end of a part number with 19. The resulting part number would be ES-4300-1002-19.

Appendix B

For alternate capillary combinations with the PFA-ST or PolyPro-ST nebulizers please use the following reference table

yy = capillary combinations

yy = 10	20 µL/min	20 µL/min	
yy = 11	20 µL/min	50 µL/min	
yy = 12	20 µL/min	100 µL/min	
yy = 13	20 µL/min	400 µL/min	
yy = 14	20 µL/min	700 µL/min	
yy = 15	50 µL/min	50 µL/min	
yy = 16	50 µL/min	100 µL/min	
yy = 17	50 µL/min	400 µL/min	
yy = 18	50 µL/min	700 µL/min	
yy = 19	100 µL/min	100 µL/min	
yy = 20	100 µL/min	400 µL/min	
yy = 21	100 µL/min	700 µL/min	
yy = 22	400 µL/min	400 µL/min	
yy = 23	400 µL/min	700 µL/min	
yy = 24	700 µL/min	700 µL/min	
yy = 25	20 µL/min		
yy = 26	50 µL/min		
yy = 27	100 µL/min		
yy = 28	400 µL/min		Standard if no other combination specified
yy = 29	700 µL/min		