



GLASS EXPANSION

Quality By Design

TOF-ICP-MS Mass Cytometers Supplies & Accessories Catalogue

Issue 1



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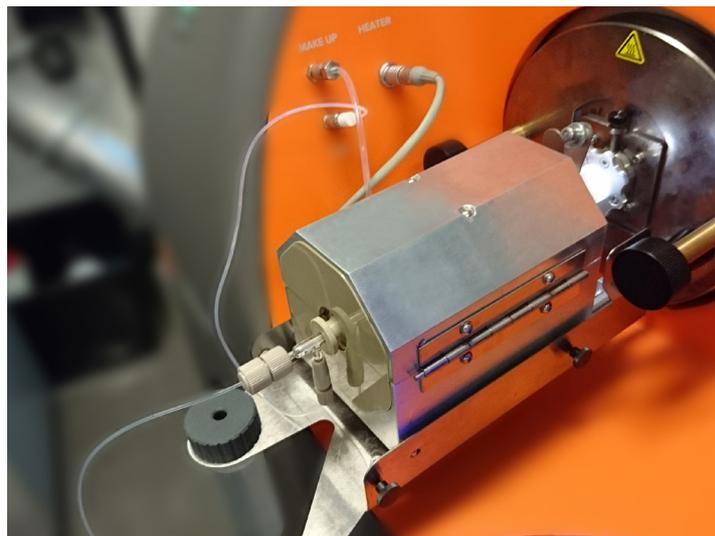
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Introduction to Glass Expansion Nebulizers

The nebulizer is a critical component of your ICP sample introduction system, so why not opt for the highest quality? Glass Expansion has been manufacturing ICP nebulizers since the early 1980s and continually updates nebulizer designs to improve performance and ease of use. Our proprietary designs include a thick walled VitriCone capillary, UniFit sample line connector and the Direct Connect (DC) product line.

Learn about the performance advantages and overall difference in construction quality that a Glass Expansion nebulizer can provide your ICP laboratory.

DC Nebulizer



All Glass Expansion concentric nebulizers use the unique VitriCone™ construction delivering the best possible precision.

The DC (Direct Connection) nebulizer has a UniFit sample connector which slides easily over the sample arm and an argon connector configured to connect directly to your ICP.

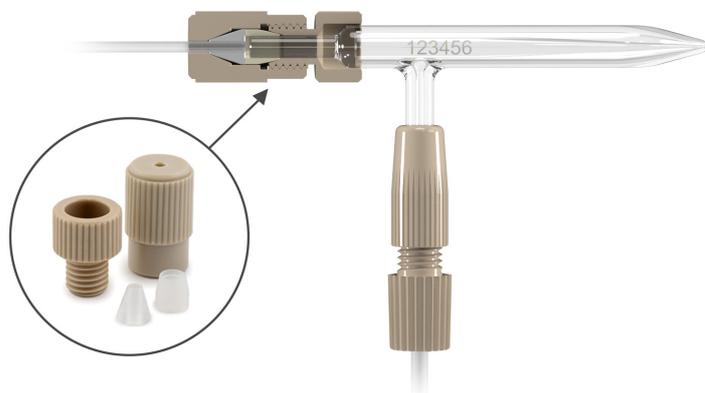
DC Nebulizer Benefits:

- Inert metal-free argon connector.
- Instrument-specific Direct Connect flexible argon line.
- Reliable ratchet fitting ensures leak-free gas connection.

In addition to these unique benefits, the DC nebulizer shares the following benefits with the U-Series nebulizer:

- Resists blockage: The sample channel is uniform from the entry point to the tip, so there is nowhere for particulates to be trapped.
- Fast washout: Since there is nowhere for sample to be trapped, the fastest possible washout and highest sample throughput is achieved.
- Simple to use: Our proprietary UniFit connector slides easily over the sample arm and creates an excellent seal.
- Full length VitriCone construction: With the VitriCone design, the sample channel is constructed from heavy glass capillary which is machined to very high tolerances.

MicroMist™ High Efficiency Nebulizer



Glass Expansion is the only manufacturer that takes thick walled constant-bore tubing and machines the outside to a uniform aerodynamic shape. This guarantees a uniform sample channel, assuring tolerance to high matrix samples and perfect reproducibility.

We have applied this technology along with over 30 years of nebulizer design expertise, to develop a version of our popular MicroMist nebulizer specifically for single cell applications.

Benefits Include:

- Superb transport efficiency at low sample uptake rates (15 to 45 $\mu\text{L}/\text{min}$) to ensure individual intact cells are transported into the plasma for measurement.
- Constant diameter, large bore sample channel minimizes blockages from sample build-up commonly experienced with biological samples.
- Rigid, precision machined thick-walled glass sample capillary gives the best analytical precision by resisting harmonic vibrations from the high linear velocity of the surrounding argon gas flow.
- Inert, metal-free DC gas fittings with ratchet mechanism give reliable, reproducible leak-free Ar connections.

Proper Nebulizer Maintenance



Eluo Nebulizer Cleaning Tool

Eluo for Glass concentric Nebulizers	70-ELUO
Eluo HF for OpalMist or DuraMist	70-ELUO-OPD
Eluo Barrel	703-0058
Eluo Plunger	70-703-0070
Eluo HF Nebulizer Holder	70-803-0932
Eluo Nebulizer Holder for Glass concentric Nebulizers	70-703-0069
O-ring Kit for Eluo (2 sets)	70-0806

With proper nebulizer maintenance you can prolong the performance and lifetime of your Glass Expansion nebulizer.

Our Eluo nebulizer cleaning tool is designed to efficiently deliver a cleaning solution through the nebulizer capillary to dislodge particle build-up and thoroughly clean the nebulizer.

Cleaning your nebulizer is as easy as 1, 2, 3.

1. Fill your Eluo with Methanol.
2. Insert your nebulizer, tip first, into the Eluo.
3. Clean your nebulizer by pressing the Plunger down.

Particle build-up in a nebulizer capillary and tip causes sample flow to be constricted, reducing nebulizer efficiency and performance. Now, blocked nebulizers can be safely and easily restored to optimum performance with a revolutionary cleaning instrument – the Eluo.

The Eluo is designed to efficiently deliver a cleanser through the nebulizer capillary to dislodge particle build-up and thoroughly clean the nebulizer. One simple action does it all. No more messy procedures or shattered nebulizers in ultrasonic baths. Use the Eluo regularly to maintain nebulizer performance and prolong nebulizer life. Every lab should have an Eluo.

We have found that using a dilute concentration of Fluka RBS-25 (manufactured by Sigma-Aldrich, and is available from most suppliers of laboratory chemicals) is the best cleaning solution. Stubborn clogs may require an overnight soak or additional cleaning with nitric acid.

Fixed Quartz Torches (One Piece)



Benefits Include:

- Precise quartz construction
- Simple to use
- Lowest initial cost

Care of Quartz Torches:

Glass Expansion quartz and ceramic torches are made from a high-quality materials, so you should exercise the same care that you would normally use for glass labware. In particular, don't knock a torch against hard objects or leave it unprotected when not in use.

Quartz should be treated with the care that is due to a brittle material. It can fracture and produce sharp, cutting edges, so handle all quartz objects with deliberate movements and don't apply large mechanical forces to them, especially when connecting gas tubes or installing in the torch holder. All quartz torches are supplied in a box with soft sponge foam. This should be used when the torch is placed in storage.

Don't touch quartz torches with bare hands as this can reduce the torch life, and don't use metal or ceramic brushes or scraping tools. Damage is quite likely to result from doing this.

RF Coils – more efficient energy transfer



Why Change your RF Coil?

- Regular replacement of corroded coils reduces the load on the RF generating system.
- Changing corroded coils increases energy transfer, resulting in a more robust plasma and generally higher analytical line intensities.

Advantages of Glass Expansion RF Coils

- High quality and consistent plating of our coils promotes extended coil life.
- Each coil is supplied on a plastic former ensuring correct dimensions and easier installation.
- Each coil is supplied in a special protective container to ensure correct dimensions are maintained, and the coil arrives corrosion free.
- Correct alignment of the RF Coil with respect to the torch body reduces devitrification of the outer tube.
- Reusable alignment tools ensure correct installation every time. Our Do-it-yourself instructions saves time.

Glass Expansion installation Kits for RF Coils

- Incorrect alignment of the torch in the coil will dramatically reduce torch life. The Glass Expansion Installation Kits help ensure correct alignment and maximum torch life.
- Correct alignment of the RF Coil with respect to the torch body reduces devitrification of the outer tube.
- Re-usable alignment tools are available separately to ensure correct installation of the coil every time.
- Our easy to follow Do-It-Yourself installation instructions save you time, and the cost of a service call.

All kits contain:

- An Installation Kit – Aligns coil to torch mounting bracket.
- Required Spanner/s – Designed specifically for each instrument.
- USB - Do-It-Yourself instructions.

Cones

Our TOF-ICP-MS interface cones are made from ultra-pure metals sourced from specialty smelters. Our highly experienced machinists use state of the art CNC machines and electron beam welding to provide cones with the finest tolerances for the highest quality.

We supply cones for all of the popular ICP-MS models and, to make sure you get all the support you need, we have a staff of technical experts and a fully equipped ICP-MS laboratory for testing and evaluation.

No-risk guarantee:

As with all of our products, our cones are backed by our complete satisfaction guarantee.



Laser Ablation

S13 (13 mm) cup Adaptors

P/N: 31-800-1007
ID: 4mm



P/N: 21-809-0965C
OD: 6mm
ID: 4mm



P/N: 31-808-3045
OD: 4mm
ID: 2mm



GazFit Connectors



Standard GazFit Connectors (for soft walled tubing)

GazFit Connectors for 4mm OD side arm (PKT.4)	GAZ-04
GazFit Connectors for 5mm OD side arm (PKT.4)	GAZ-05
GazFit Connectors for 6mm OD side arm (PKT.4)	GAZ-06
GazFit Connectors for 8mm OD arm (PKT.2)	GAZ-08
GazFit Connectors, 2 for 6mm OD side arms, 2 for 4mm OD side arms (PKT.4)	GAZ-0604
GazFit Connectors for 6mm OD side arm with connection for 1/8inch ID tubing (PKT.4)	GAZ-06-1/8

GazFit Union Connectors (for rigid walled tubing)

GazFit Union 4mm (PKT.2)	GAZ-04U
GazFit Union 6mm (PKT.2)	GAZ-06U
GazFit Union 8mm (PKT.2)	GAZ-08U

Nebulizers

MicroMist U-Series

200µL/min uptake C21-1-UFT02

Nebulizer Options:

Nebulizer Sample Connecting Line Kit 70-803-2109

Nexus Universal Nebulizer Connection Kit FT-16-8

DC Fitting Type 21 with Ratchet Connector 70-803-1070

Ratchet Connector 70-803-1350

Tefzel Ferrule 1.6mm (PKT 10) 70-803-1315

Tefzel Ferrule 1.8mm (PKT 10) 70-803-1316



Torches

Quartz Torch

Quartz Torch 30-808-8107



Injectors:

WB Quartz Injector with Ball Joint 1.5mm ID 31-808-4066



HT Quartz Injector with Ball Joint, 0.8mm ID 31-808-4116



Viton O-ring Kit (PKT 10) V-010



RF Coils

Copper 70-900-2006C



RF Coil Installation Tool 70-900-2006T



Cones

Sampler Cone

Nickel FL9001-Ni



Viton O-rings Sampler Cone (PKT 5) 70-803-1565



Skimmer Cone

Nickel FL9005



Viton O-rings Skimmer Cone (PKT 5) 70-803-1564



Maintenance Tools

Eluo Nebulizer Cleaner 70-ELUO



Magnifier Inspection Tool 70-803-1923



O-ring Removal Tool 50-100-1636





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