

# MicroMist™

## Industry Standard for ICP-MS Applications



Glass Expansion's MicroMist™ Direct Connect (DC) nebulizer is ideal for low-flow applications due to its excellent transport efficiency and precision. Backed by industry's tightest tolerances, precision manufacturing, and the proprietary VitriCone™ capillary have driven the MicroMist DC nebulizer to be the worldwide standard nebulizer for low-flow ICP-OES and ICP-MS applications.

- Material: Borosilicate glass
- High physical reproducibility ~ 1%
- TDS tolerance, typically up to 15%
- Tolerance to particulates, typically up to 100µm
- Low RSDs due to highly accurate construction
- Lowest dead volume for rapid washout
- Instrument Suitability: most commonly used with ICP-MS
- Standard available uptake: 0.05, 0.1, 0.2, 0.4, 0.5 & 0.6mL/min

### Benefits of the VitriCone Construction

- Sample channel is guaranteed uniform from entry point to nebulizer tip and thus resistant to clogging, in addition to providing a zero dead volume sample connection.
- Rugged precision-machined capillary resists vibration and delivers the best possible precision.
- Industry's tightest tolerances ensure that each nebulizer will perform to the same high standards as the previous one.

### Recommended Applications

- Applications requiring the highest sensitivity and precision, such as toxic metals in cannabis.
- ICP-MS applications where oxide interferences exist.
- Samples with limited volume, such as difficult to digest samples or biological.
- Radioactive samples that are expensive to dispose of.
- Volatile organic solvents that would otherwise cause an excessive load on the plasma.

For more information, contact your regional Glass Expansion office or visit us online.

#### ASIA PACIFIC

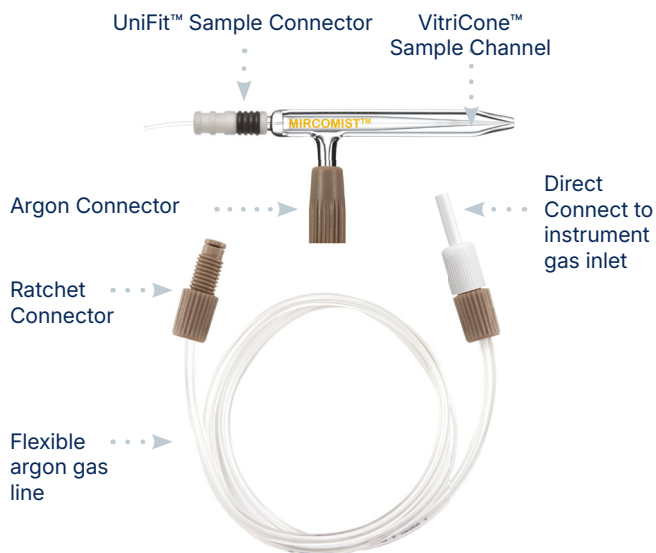
6 Central Boulevard,  
Port Melbourne, VIC,  
3207, Australia  
+61 3 9320 1111  
enquiries@geicp.com  
www.geicp.com

#### AMERICAS

31 Jonathan Bourne  
Drive, Unit 7, Pocasset,  
MA 02559, USA  
800 208 0097  
geusa@geicp.com  
www.geicp.us

#### EUROPE

Friedenbachstrasse  
9, 35781 Weilburg,  
Germany  
+49 6471 3778517  
gegmbh@geicp.com  
www.geicp.de



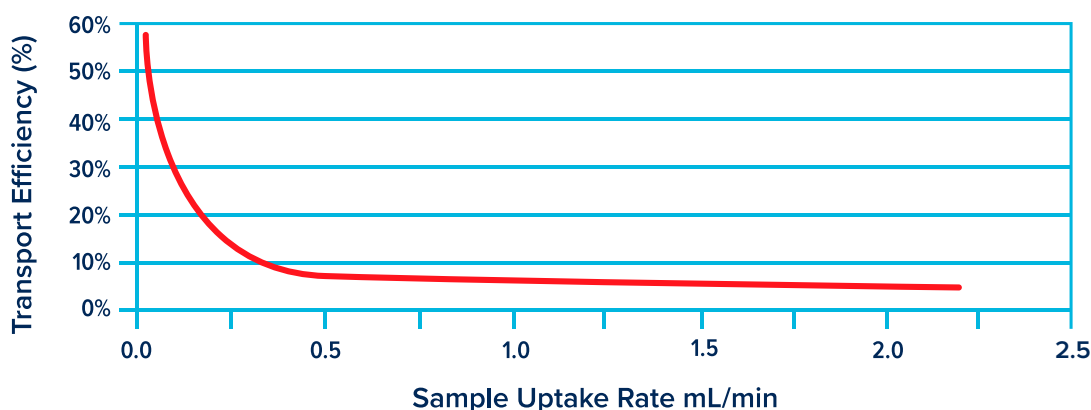
## A sample uptake rate for every low-flow application

The MicroMist product line includes models with natural sample uptake rates of 50, 100, 200, 400 and 600  $\mu\text{L}/\text{min}$ . With strong and consistent self-aspiration, these nebulizers can be used either with or without external pumping.

## Enhanced Efficiency

Although these nebulizers have lower uptake rates, their transport efficiency is higher than for standard flow nebulizers. The graph illustrates the relationship between uptake rate and nebulizer efficiency (the percentage of the sample that reaches the plasma as opposed to going down the drain).

## Transport Efficiency



The 50 $\mu\text{L}/\text{min}$  nebulizer has 50% efficiency and therefore injects 25 $\mu\text{L}/\text{min}$  into the plasma. On the other hand, the standard 2 $\text{mL}/\text{min}$  nebulizer has 2% efficiency, resulting in 40 $\mu\text{L}/\text{min}$  of sample injected into the plasma. This means that the MicroMist nebulizer can reduce sample consumption by a factor of 40 and yet the sensitivity is reduced by less than a factor of two.

## Reduced Interferences

The smaller droplet size of the MicroMist nebulizer has additional analytical advantages, including reduced matrix interferences and a more robust plasma.

## Tolerance to High Matrix

Although the MicroMist nebulizer is a low-flow nebulizer, it still provides a relatively high tolerance to total dissolved solids (TDS) at 15%. Providing the ability to handle a wide range of sample types, including challenging samples such as wastewater, soil, blood, serum, and urine. For the enhanced tolerance to TDS, consider adding an argon humidifier, such as our Elegra.

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