



Reducing Carryover and Contamination: Discover an Efficient and High Purity Sample Introduction System



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ICP ALLEY

Analytica USA

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Booth # 1400

Webinar Outline

- Quick Introduction to Glass Expansion.
- Introduction to Peltier Cooled Cyclonic (PCC) Spray Chamber Kits.
- Highlight of the high purity PFA PCC Kit.
- New high purity semi-demountable torch.
- Two inert nebulizer options.
- Summary of Key Benefits.

Introduction

Glass Expansion has been designing and manufacturing ICP sample introduction components **for over 40 years**. We are globally recognized for its **quality** and **reliability**.

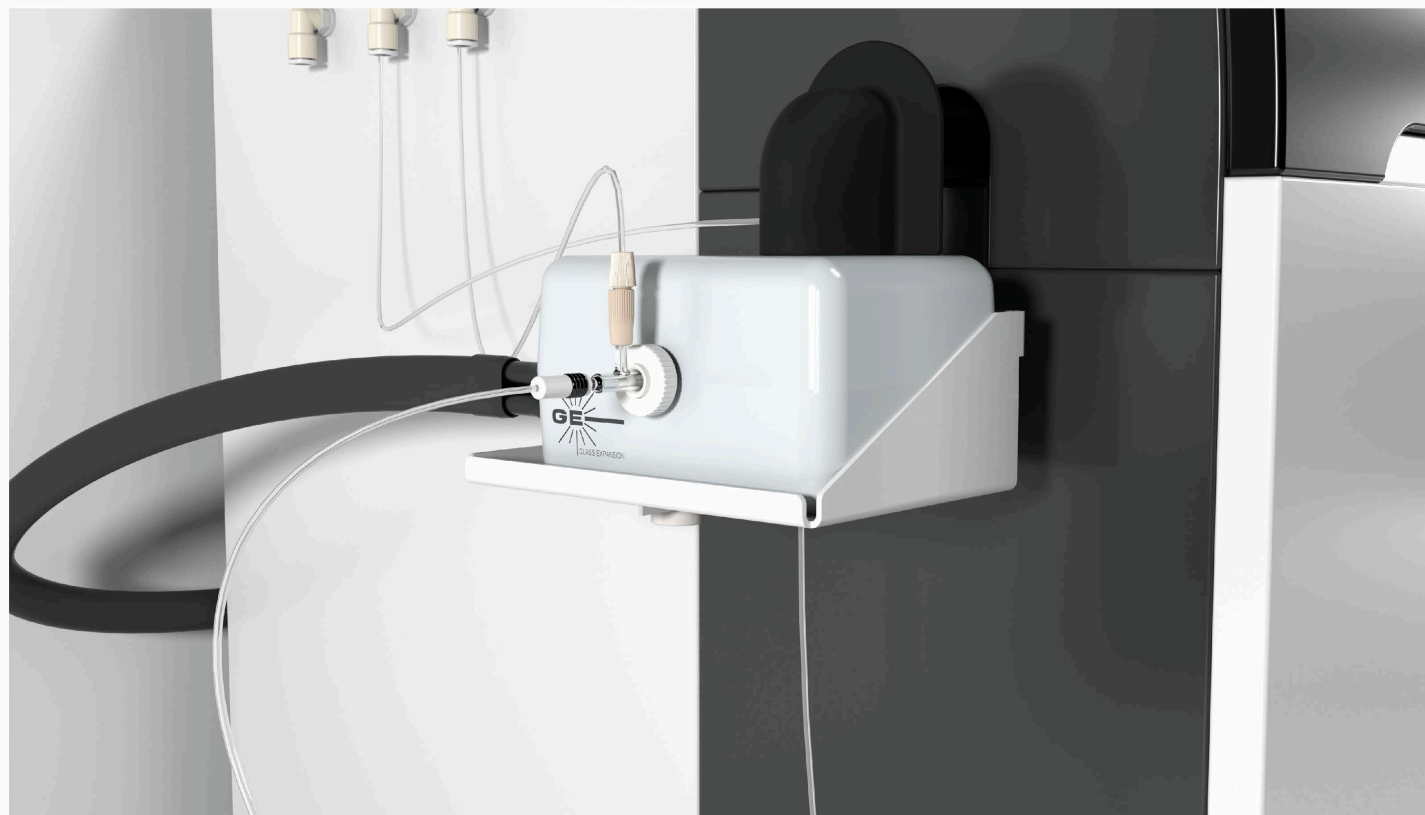
- Autosampler Probes
- Pump Tubing
- Nebulizers
- Cyclonic Spray Chambers
- Torches & Injectors
- RF Coils
- Cones
- Tools & Accessories



Introducing the Revolutionary PCC™ Kit



Enables the switch from a standard Scott style... to Glass Expansion's Tracey™ Cyclonic Spray Chamber



**Scott Style
Spray Chamber**



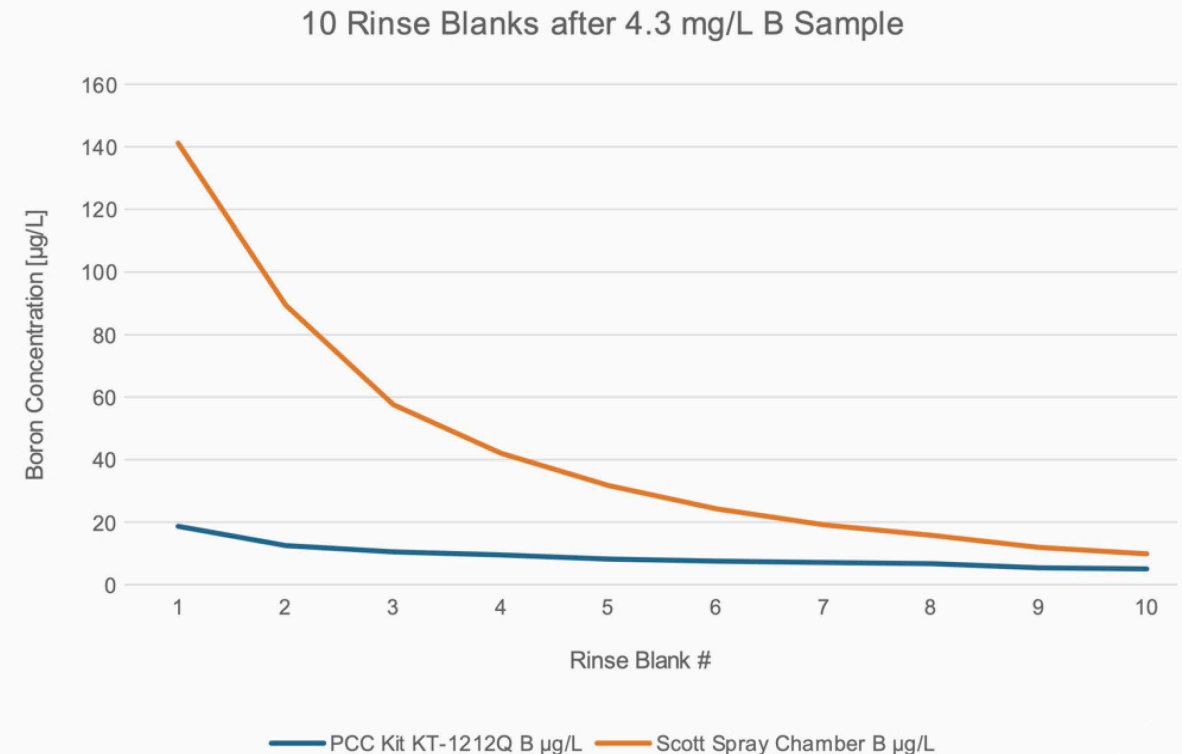
**Tracey™
Spray Chamber**

Washout Efficiency

✓ In this example, a **61% improvement** in B washout time, resulted in a much higher throughput and much lower potential for any carryover.



[View Webinar](#)



Key Advantages of the PCC™ Kit Spray Chamber

1. Improved Washout Efficiency:

- Distinctive design of the cyclonic spray chamber minimizes washout time.

2. Helix CT™ Interface:

- All Glass Expansion cyclonic spray chambers feature the Helix CT™ locking screw and seal.

3. Interchangeable Materials:

- The PCC Kit allows easy interchangeability between different spray chamber materials:
 - **Borosilicate Glass:** Cost-effective option for routine analyses not requiring low-level boron measurements.
 - **Quartz:** Required for precise low-level boron detection.
 - **PFA:** Ideal for applications with a hydrofluoric acid matrix and **ultra-trace ICP-MS analyses** (paired optimally with Glass Expansion's DuraMist™ DC or OpalMist™ DC Nebulizer).
- The Tracey PFA spray chamber interior features the proprietary Stediflow surface treatment, improving wettability and efficient drainage.

4. Fast and Simple Installation:

- The PCC Kit connects directly to the existing electronics and water-cooling system.
- A convenient mounting bracket ensures swift installation on the Agilent® ICP-MS systems.

5. Jet Vortex Interface (JVI™) - Aerosol Filtration:

- Compatible with your existing method settings for HMI or UHMI (7850/7900/8900).



Glass Tracey™ Spray Chamber with Helix CT

P/N 21-809-4368



Quartz Tracey™ Spray Chamber with Helix CT

P/N 21-809-4448



PFA Tracey™ Spray Chamber with Helix CT

P/N 21-809-2985



GLASS EXPANSION
Quality By Design



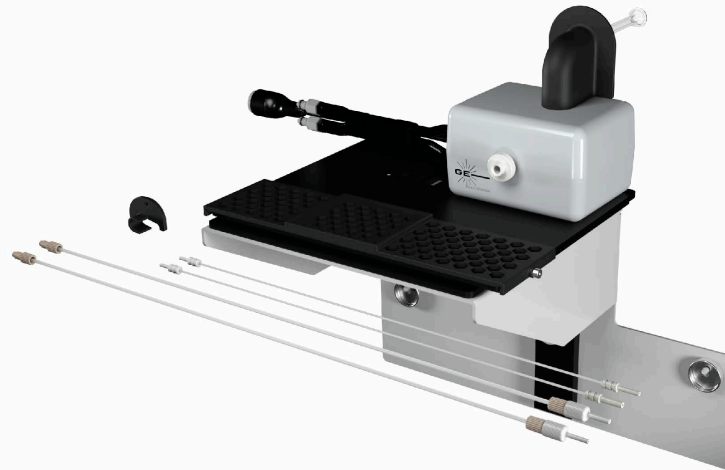
PCC™ Kit Models



PCC™ Quartz Spray Chamber for Agilent® 7850, 7900, 8900, (P/N KT-1116Q)*



PCC™ Quartz Spray Chamber for Agilent® 7850, 7900, 8900 with Actuator Mount (P/N KT-1212Q)*



PCC™ Quartz Spray Chamber for Agilent® 7700, 7800, 8800, (P/N KT-1206Q)*



- All of these PCC™ Kit models can accommodate Glass, Quartz or **PFA spray chambers**
- KT-1116 and KT-1206 are compatible with other brands of OEM switching valves.
- KT-1212Q designed specifically to accommodate Agilent® switching valve.



High Purity PCC™ Kit (P/N KT-1116P)

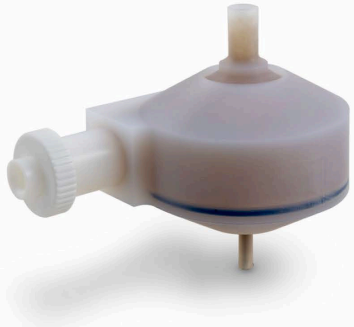
- Compatible with Agilent® 7850/7900/8900
- Compatible with Agilent® HMI or UHMI conditions.
- Interfaces direct to the existing electronics and water cooling system of the Agilent® ICP-MS.
- A convenient mounting bracket allows for fast and simple installation while reducing the nebulizer path length.
- Minimizes washout time with highly concentrated samples and troublesome elements, such as B, Hg, Pb and Sb; compared to the standard Scott-style spray chamber.
- **Lower background and detection limits compared to Standard Inert Kit for several elements.**

Customer Comments

- Our preferred configuration for ultra trace analysis. The PFA PCC Kit made resolving aluminum background easier and helped to achieve lower limits of detection for several elements.
 - GFS Chemicals - USA



Inert PCC Kit Components



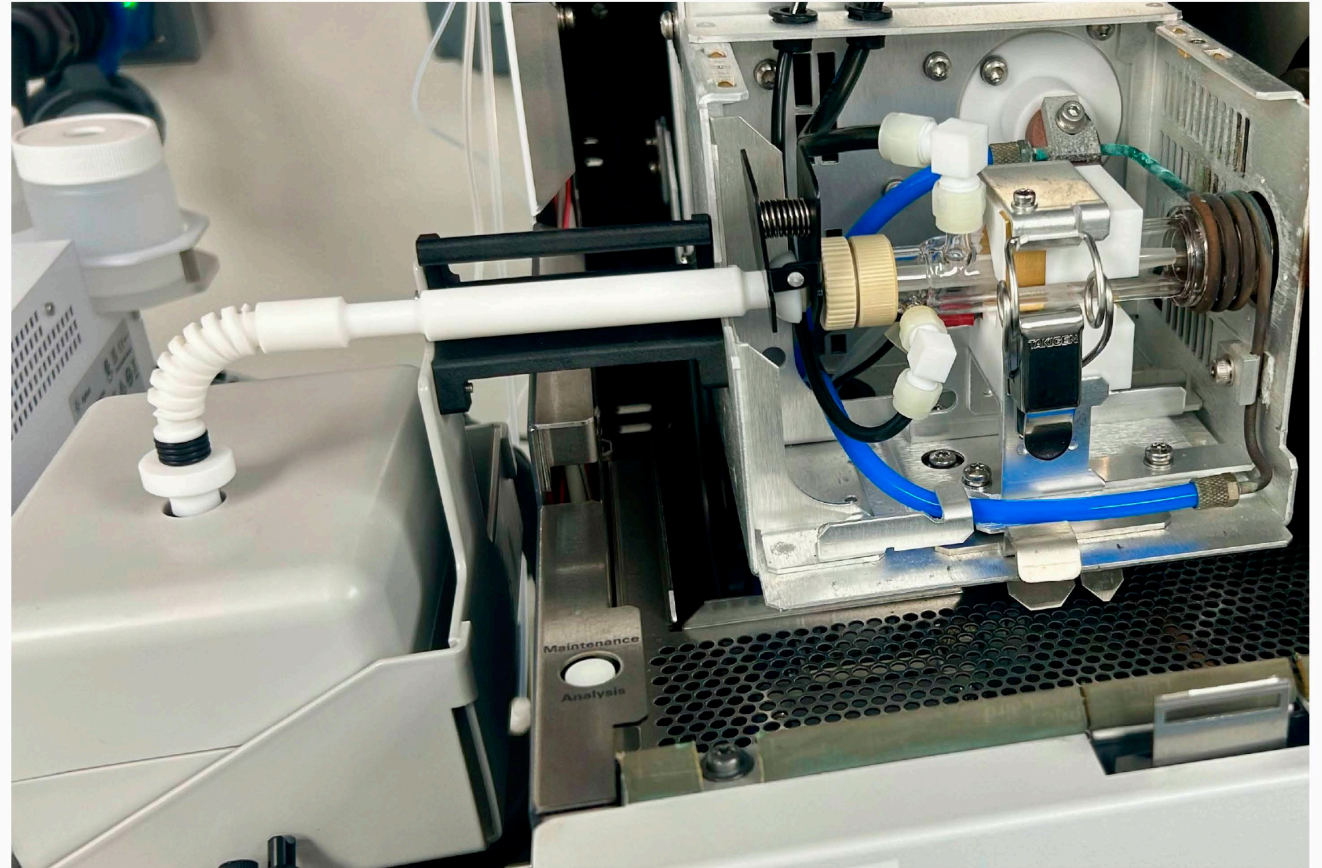
PFA Tracey™



JVI™



PTFE Transfer Tube

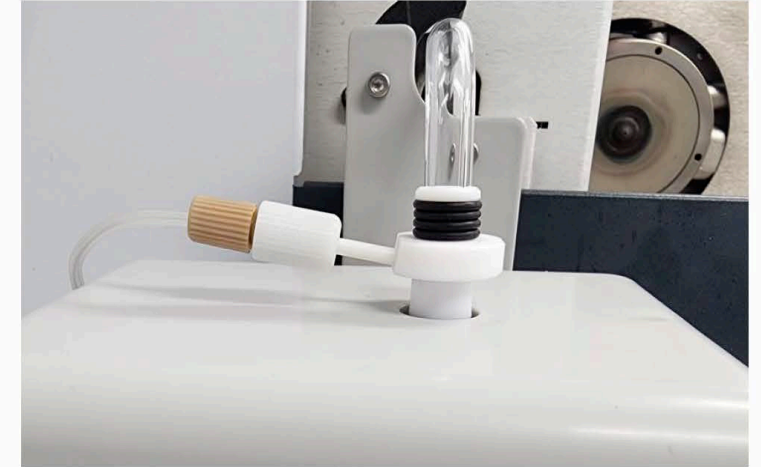


Jet Vortex Interface (JVI™) – Aerosol Filtration

A patent pending, novel design, providing highly efficient Aerosol Filtration. Simple and straightforward installation, the JVI works in conjunction with the existing “Make-Up” or “Dilution/Auxiliary” gas option of your ICP-MS.

Benefits

- Compatible with your existing method settings for HMI and UHMI (7850/7900/8900).
- Chemically inert, made from Teflon® (PTFE).
- Secure connection to gas supply, spray chamber and transfer tube.
- Improved life of torch & interface cones.
- Reduce build-up on injector & interface cones.
- More robust plasma conditions.



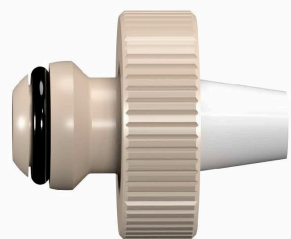
JVI™




GLASS EXPANSION
Quality By Design



High Purity Semi-demountable Torch



Injector Adaptor

Quartz 

Ceramic 

Sapphire 

Interchangeable Injectors

*Platinum injector also available by special request

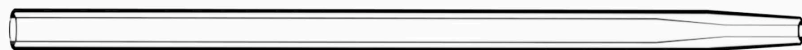


High Purity Quartz Torch Body

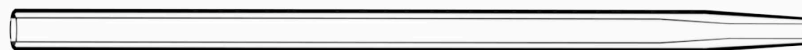
Multiple Applications with a Single Torch



- Narrow bore quartz, **1.0mm** or less for volatile organics



- **1.5 to 2.0mm** quartz for standard aqueous matrices



- Large bore quartz, **2.0mm** or greater for high TDS



- High grade **alumina** for **HF** containing samples



- Sapphire for ultra high purity and HF

* **Platinum injector** for ultra-trace analysis of ultra-pure HF-containing, semiconductor-grade process chemicals, solvents, and other demanding applications where the lowest detection limits for Al, Si, B, Na, K etc. are necessary.

Inert Nebulizer Selection

OpalMist™ DC – Best for High Purity



- High purity PFA
- Resistant to HF and aggressive solvents
- Great choice for semiconductors, geological and soil/sediment with HF.
- Best precision and % Oxide Ratio (lowest sensitivity)
- Up to 15% TDS

DuraMist™ DC – Best for Higher TDS



- PEEK – completely inert construction
- Great choice for aqueous solutions with <5% HF, brines, seawater, and mining
- High performance.
- Up to 30% TDS

Detection Limits

Element	Standard Inert Kit	GE PFA PCC Kit
	Detection Limit (ppt)	Detection Limit (ppt)
Aluminum	8.20	0.19
Boron	10.7	3.15
Calcium	14.4	4.12
Potassium	8.00	0.52
Magnesium	9.11	0.05
Sodium	30.9	0.05

Summary of Key Benefits

- Quick and easy installation with very short leaching times compared to standard inert kit.
 - » Trace level backgrounds after just 1 day of leaching.
 - » Ultra-trace levels after 7 days of leaching.
- Several key elements outperform standard inert kit, notably Al, B, Ca, K, Mg, and Na.
- HMI and UHMI compatible JVI provides the ability to utilize HMI or UHMI conditions with an inert cyclonic spray chamber, not possible with the standard inert kit.
- Semi-demountable Torch provides application flexibility with interchangeable injectors, with sapphire and platinum options for ultra-trace.
- DuraMist selected for versatility, durability, and better overall analytical performance. Stable self-aspiration uptake for improved precision.

Want a **FREE** review of your Sample Introduction System?

Please contact me by email (geusa@geicp.com) to:

- Optimize your sample introduction system components.
- Take advantage of this PCC Kit.
- Identify other performance enhancing accessories available for your ICP.
- Discuss any sample introduction challenges.
- Explore ways to reduce operating costs.
- Obtain quotes.

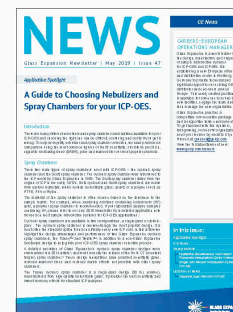
Glass Expansion ICP Resources



- Fully equipped R&D laboratory
- Expert technical staff
- Application notes
- Newsletters
- Catalogs
- Product flyers
- Product care guides
- Operating instructions
- Videos
- Webinars & installation guides



Flyers



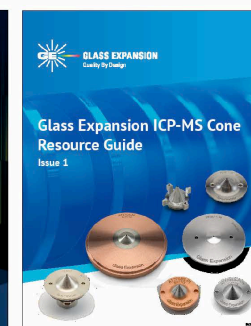
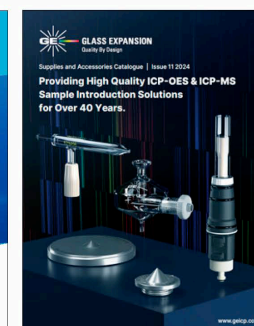
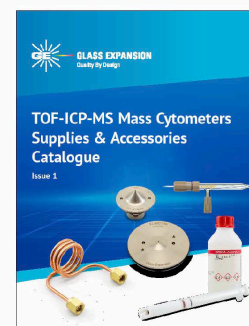
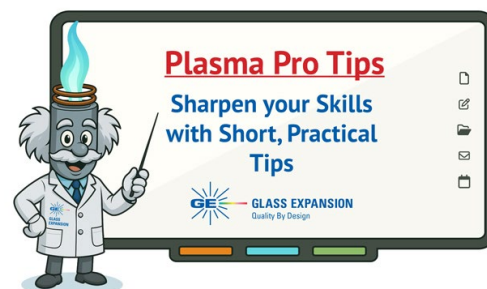
Newsletters



Instructions



Application Notes



Catalogs

Thank You

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