




## Introduction to Glass Expansion Spray Chambers


The spray chamber is a crucial component of the ICP sample introduction system since it has a profound effect on transport efficiency, precision, and washout. Glass Expansion revolutionized the spray chamber design for the ICP industry with the Tracey and Twister cyclonic spray chamber, providing improved efficiency and reduced washout. Glass Expansion's unique Helix CT nebulizer interface, provides a zero dead volume seal that results in higher throughput compared to non-Glass Expansion designs.

### Spray Chamber Types


Tracey		Internal Volume, mL:	50
		Internal Baffle:	No
		HF-resistant:	No
		Precision:	Very Good
		Purity:	Good
		Material:	Glass


Twister		Internal Volume, mL:	50
		Internal Baffle:	Yes
		HF-resistant:	No
		Precision:	Excellent
		Purity:	Good
		Material:	Glass

Cinnabar		Internal Volume, mL:	20
		Internal Baffle:	No
		HF-resistant:	No
		Precision:	Very Good
		Purity:	Good
		Material:	Glass

Twinnabar		Internal Volume, mL:	20
		Internal Baffle:	Yes
		HF-resistant:	No
		Precision:	Very Good
		Purity:	Good
		Material:	Glass

Tracey TFE		Internal Volume, mL:	50
		Internal Baffle:	No
		HF-resistant:	Yes
		Precision:	Good
		Purity:	Good
		Material:	PTFE

Twister TFE		Internal Volume, mL:	50
		Internal Baffle:	Yes
		HF-resistant:	Yes
		Precision:	Very Good
		Purity:	Good
		Material:	PTFE

Tracey PFA44		Internal Volume, mL:	44
		Internal Baffle:	No
		HF-resistant:	Yes
		Precision:	Good
		Purity:	Excellent
		Material:	PFA

## Helix CT - The Modern Interface Between Nebulizer and Spray Chamber



Traditionally, ICP-OES and ICP-MS sample introduction systems have relied on o-rings to form a gas-tight seal between the nebulizer and spray chamber. There are several drawbacks with an o-ring seal, such as:

- Potential for contamination due to dead volume around the o-ring seal
- Chemical resistivity of strong acids and organic solvents
- The o-rings are difficult to replace, often requiring tools
- Bonding to the nebulizer can result in breakage

Glass Expansion Helix CT spray chamber with ConstantTorque technology, provides a constant, reproducible, inert, gas-tight seal between the nebulizer and spray chamber.

The main feature of the Helix CT spray chamber is the Helix locking screw with built-in torque control mechanism that allows for a consistent seal of the PTFE ferrule against the nebulizer –making it impossible to overtighten or undertighten while ensuring a gas-tight seal each and every time.

A PressFit PTFE ferrule provides a chemically inert seal around the nebulizer, which is immune to strong acids and organic solvents routinely used in ICP sample preparation.

The Helix CT cyclonic spray chamber by Glass Expansion, therefore, eliminates all the drawbacks of the o-ring nebulizer seal, while improving user safety by preventing broken nebulizers.

