

# IsoMist XR Temperature Controlled Cyclonic Spray Chamber With Extended Temperature Range

The IsoMist XR programmable temperature controlled cyclonic spray chamber now features an improved thermodynamic design providing an extended temperature range and faster cool-down, so your ICP is ready to go sooner. IsoMist XR is a compact, convenient and maintenance-free temperature controlled sample introduction system for all ICP's.



## Improved Analytical Stability with Precise Temperature Control

On the IsoMist XR, the spray chamber temperature is accurately controlled through an improved thermodynamic design using a multi-stage peltier device. The spray chamber temperature is settable in 1°C increments from -25°C to 80°C guaranteeing optimum conditions can be used for any application. The improved cooling efficiency of the new dual-stage peltier design means it is ready, sooner and the cool-down time is reduced.

## Reduce Oxide Interferences in ICP-MS

Using the IsoMist XR spray chamber at sub-ambient temperatures on an ICP-MS, the sample is cooled, less water vapor is transferred to the plasma resulting in lower oxide formation and reduced polyatomic (ArO, ArOH) interferences (*Figure 1.*). Less oxides in the plasma mean fewer interferences, improving accuracy and detection limits.

## Perfect for Naphtha and Gasoline Analysis

For volatile solvents, a lower sample introduction temperatures reduces nebulization efficiency avoiding quenching of the plasma from solvent over-loading (see *figure 2 reverse side.*). Now with a minimum operating temperature of -25°C, analyzing volatile organic solvents such as naphtha and gasoline by ICP is even easier.

Figure 1. Effect of IsoMist XR Temperature on ICP-MS Oxide Ratio. Data Courtesy of David Jones, ALS Chemex

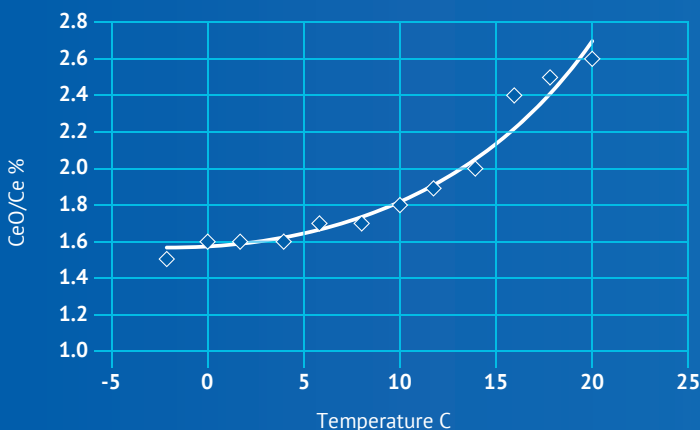
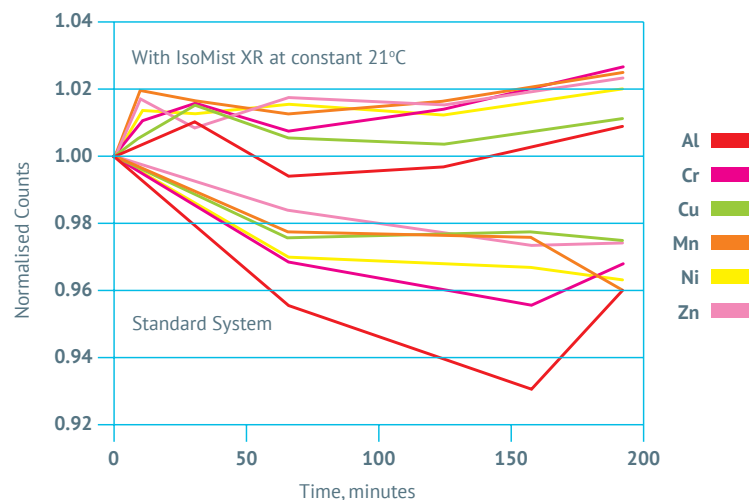


Figure 2. Reproducibility results for undiluted naphtha at -10°C (measurements at 90 minute interval)

	Conc, ug/L	Conc, ug/L
Cd	57	55
Cr	31	32
Cu	35	33
Fe	24	23
Mn	11	12
Ni	589	517
Pb	451	424
Sn	216	213
Ti	22	22
V	107	104

Figure 3. Effect of constant temperature on signal stability



## Improve Analytical Stability with Constant Spray Chamber Temperature

Fluctuations in the lab temperature affects sample viscosity and nebulization efficiency. Maintaining the sample introduction system at a constant and stable temperature improves analytical reproducibility, enhances throughput and lowers operating costs by reducing the need to re-run samples when a calibration verification check standard (see figure 3 above.) drifts outside the acceptable upper or lower limits.

## Elevated Sample Introduction Temperatures Enhances Sensitivity

The sensitivity for many analyses can be enhanced by operating the spray chamber at elevated temperatures - especially important for limited sample volumes. Heating the spray chamber also helps with the analysis of viscous samples such as lubricants and edible oils.

## A Spray Chamber Optimized for Analytical Performance

The IsoMist XR incorporates a proven cyclonic spray chamber design in glass, quartz and HF resistant PFA with Helix™ interface. Compared to a Scott type spray chamber, cyclonic spray chambers give are more sensitive and have better washout. The IsoMist XR includes an O-ring free, Helix™ nebulizer interface, which eliminates sample contamination and ensures easy nebulizer removal for routine nebulizer cleaning. The Helix™ nebulizer interface also has zero dead volume, reducing carry-over and improving washout between samples. With a positive stop built-in, Helix™ ensures correct and reproducible nebulizer insertion depth for constant nebulizer performance.

## Easy to Use Software

For maximum convenience, the IsoMist XR can be controlled from a PC via USB or Bluetooth wireless interface. The spray chamber temperature can be monitored during an analytical run with time vs temperature plot on your PC screen.

## Elegant, Ergonomic and Compact

The IsoMist XR is an elegant, compact, stand-alone system manufactured from materials resistant to attack from acids and solvents commonly used in ICP analysis. By using a peltier to maintain the spray chamber temperature, the messy, noisy and high-maintenance refrigerated circulating baths used with jacketed spray chambers has been eliminated. The compact design means all IsoMist XR Programmable Temperature Controlled Spray Chambers are compatible with virtually any ICP-OES or ICP-MS.

**Contact [enquiries@geicp.com](mailto:enquiries@geicp.com) for details on connecting IsoMist XR to your specific ICP-OES or ICP-MS model.**

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