



# IsoMist Programmable Temperature Spray Chamber

## Enhanced Performance for ICP-MS and ICP-OES

The IsoMist Programmable Temperature Spray Chamber, provides the benefits of a temperature-controlled ICP sample introduction system in a compact, convenient package.

### Precise Temperature Control

The temperature is electronically controlled using a powerful inbuilt Peltier device. You can select any temperature between  $-10^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$  in  $1^{\circ}\text{C}$  increments to provide the optimum conditions for any application. The rapid response of the Peltier device allows a spray chamber temperature of  $-5^{\circ}\text{C}$  to be reached within 15 minutes. Once set, the temperature is maintained to within  $0.1^{\circ}\text{C}$ .

### Versatile Computer Interface

For maximum convenience, the IsoMist can be controlled from your PC via a Bluetooth<sup>®</sup> wireless interface or a standard USB network connection. The spray chamber temperature can be monitored through a temperature versus time plot on your PC screen. And, for regulatory compliance, the temperature versus time data file can be saved with your results. If these features are not required, once the temperature has been programmed, the IsoMist can be run in stand-alone mode without a PC connection.

### Reduced Oxide Interferences in ICP-MS

By introducing the sample at low temperature, the IsoMist reduces oxides as shown in Figure 1, resulting in fewer interferences and improved detection limits.

### Perfect for Volatile Organics

The temperature can be set as low as  $-10^{\circ}\text{C}$  to reduce the solvent load on the plasma and allow the straightforward ICP-MS or ICP-OES analysis of even the most volatile organic solvents, as shown in Figure 2.

### Constant Temperature Improves Stability

By holding the spray chamber at a constant temperature, the IsoMist significantly improves long-term signal stability, increasing the likelihood of calibration checks passing. Figure 3 shows the emission signal over 3 hours with the temperature held at a constant  $21^{\circ}\text{C}$  compared with a standard system at ambient temperature.

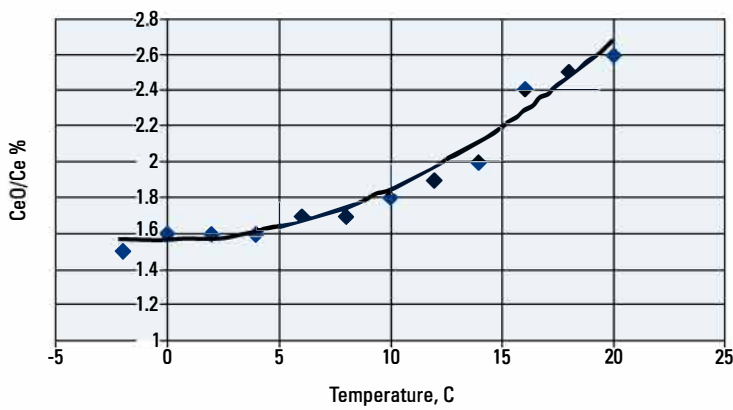


Figure 1. Effect of IsoMist Temperature on ICP-MS Oxide Ratio. Data Courtesy of David Jones, ALS Chemex

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

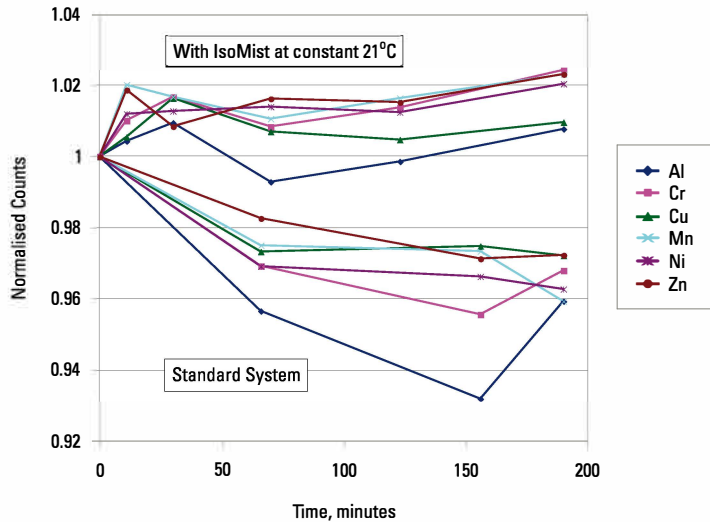


Figure 3. Effect of constant temperature on signal stability.

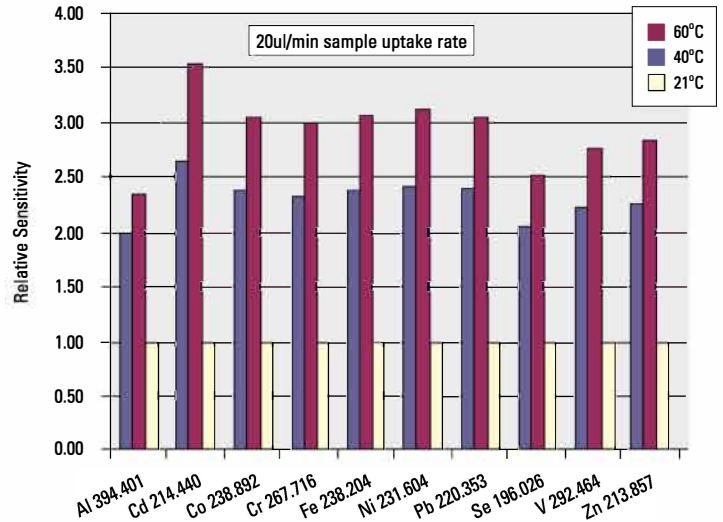


Figure 4. Effect of spray chamber temperature on sensitivity.

## Heating Mode Enhances Performance

The sensitivity for many analyses is enhanced by running the spray chamber at an elevated temperature, a feature that is particularly important for samples with limited volume (Figure 4). The heating mode also facilitates the analysis of viscous samples such as engine oils and edible oils.

## Optimum Cyclonic Spray Chamber for your Application

The IsoMist incorporates the proven cyclonic spray chamber design, available in glass, quartz or PFA, so that optimum performance is achieved for any application. The Helix nebulizer interface has zero dead volume and provides for convenient nebulizer insertion and removal. This system is compatible with the full range of Glass Expansion nebulizers.

## Completely Self-Contained Ergonomic Package

The compact design includes a rugged, low maintenance, chemically-resistant polypropylene housing. It provides a much more convenient alternative to a jacketed spray chamber with an external chiller because it does not require an external source of coolant. It is compatible with almost all ICP-MS and ICP-OES models.

Contact enquiries@geicp.com for details on connecting the IsoMist to your specific model of ICP-MS or ICP-OES.



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