

# apex E

## High Sensitivity ICP-AES Sample Introduction System

The apex E is a compact, simple-to-use liquid introduction system that increases ICP-AES sensitivity by up to an order of magnitude.

Sample transport efficiency is enhanced by nebulizing liquid samples into a heated cyclonic spray chamber using a special version of the PFA-ST nebulizer.

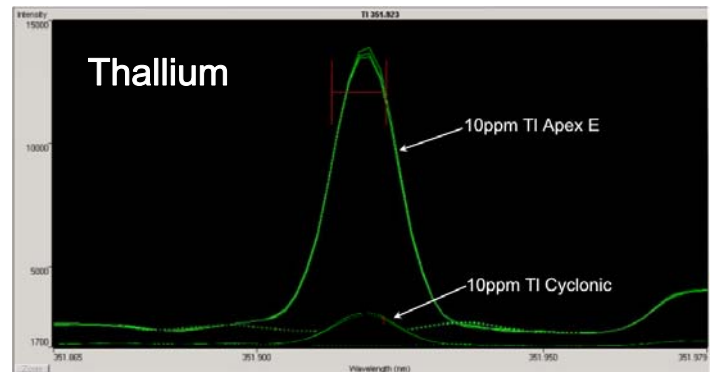
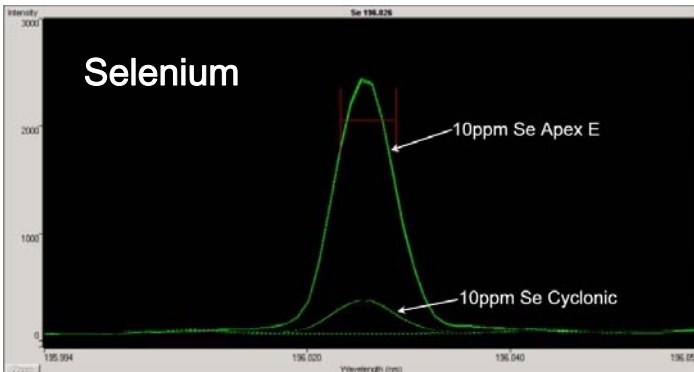
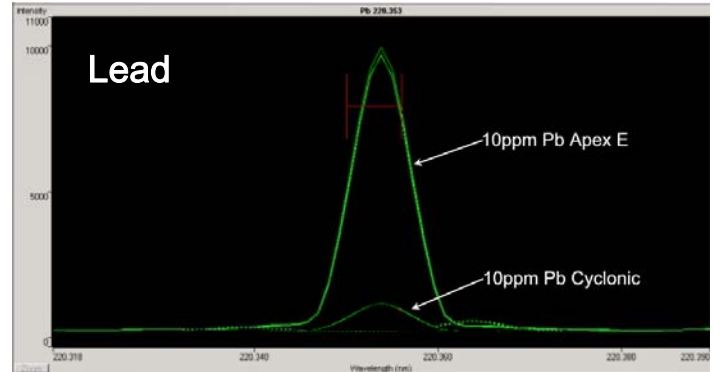
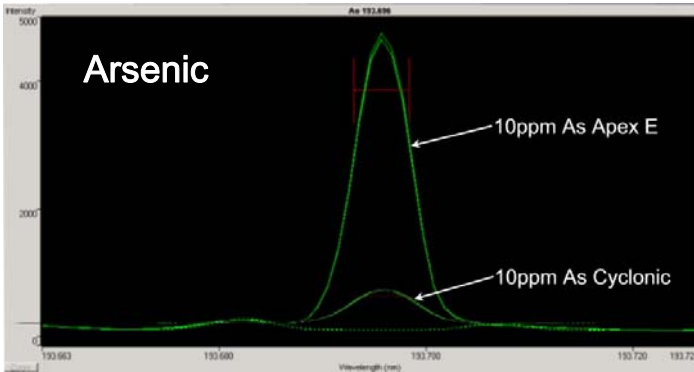
A low-volume three-stage Peltier-cooled desolvation system is incorporated for on-line removal of solvent vapor.



apex E Sample Introduction System

### apex E Advantages

- Increases sensitivity 6 to 10 fold.
- One switch operation.
- Pumped or self-aspirated nebulizer.
- Consumes less sample than standard introduction systems.
- Fast-rinsing.
- Small size—fits into even cramped laboratories.
- Integrated 4 channel peristaltic pump for waste removal.
- Designed for easy cleaning and low maintenance.



Wavelength scans from a radial ICP-AES of 10ppm solution of As, Pb, Se and Tl introduced with both standard cyclonic spray chamber and the apex E sample inlet system.

| Radial ICP-AES Sensitivity Enhancement (apex E vs. Cyclonic) |                    |            |                    |
|--|--------------------|------------|--------------------|
| Line   | Enhancement factor | Line       | Enhancement factor |
| Ag 328.068   | 8                  | K 766.491  | 6                  |
| Al 396.152   | 8                  | Mg 285.213 | 8                  |
| As 193.696   | 8                  | Mn 257.610 | 9                  |
| Ba 493.408   | 7                  | Ni 231.604 | 8                  |
| Be 313.042   | 9                  | Pb 220.353 | 8                  |
| Cd 226.502   | 9                  | Se 196.026 | 8                  |
| Co 238.892   | 8                  | Sr 407.771 | 8                  |
| Cr 267.716   | 9                  | Tl 276.789 | 7                  |
| Cu 327.395   | 8                  | V 309.310  | 8                  |
| Fe 238.204   | 9                  | Zn 202.548 | 10                 |

The apex E improves sensitivity in comparison to a conventional cyclonic spray chamber.

The data in the table were collected using a radial ICP-AES at a flow rate of 0.6 mL/min (apex) and 1mL/min (cyclonic).

The apex E enhanced the signal 6 to 10 fold.

apex system covered by US Patent # 6864974