

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

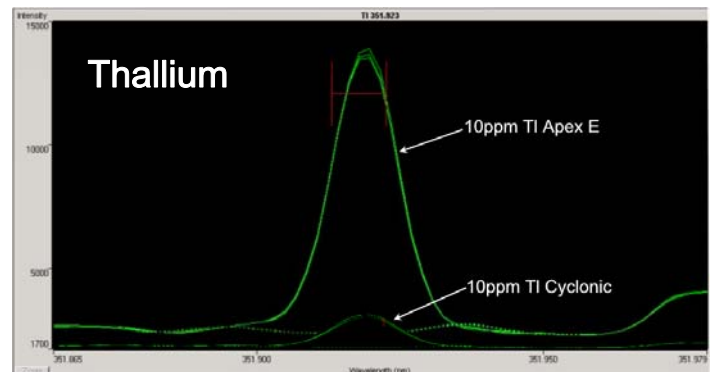
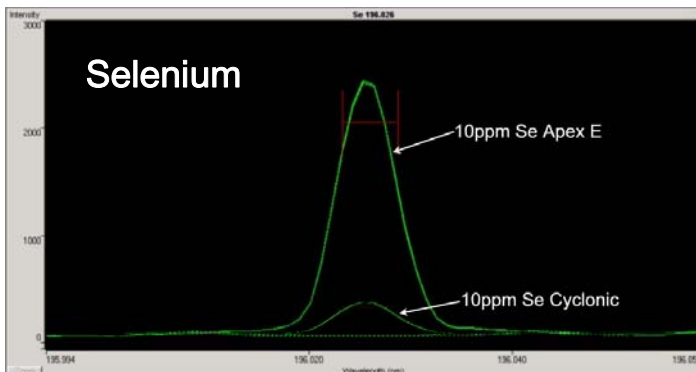
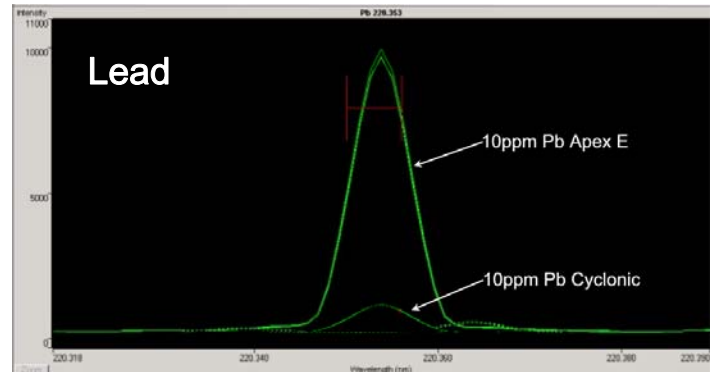
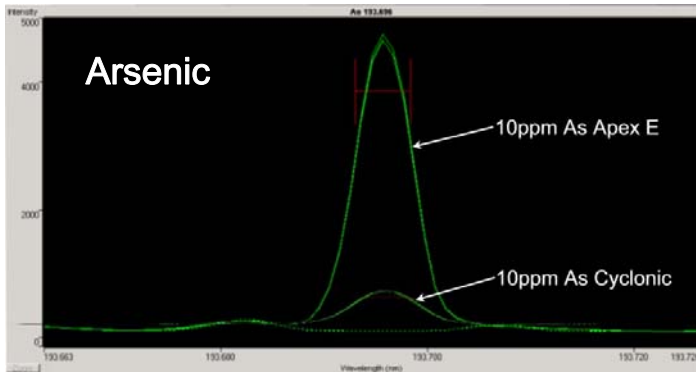
Apex E Advantages

- 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.

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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

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