

AMA254

Mercury Analysis

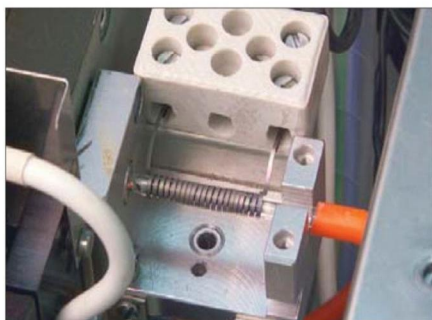


AMA254 determines trace amounts of mercury in various materials—including coal, combustion residues, soils, biological samples, and other solid/liquid samples.

The AMA254 technique of direct combustion features a combustion/catalyst tube that decomposes the sample in an oxygen-rich environment and removes interfering elements. A gold amalgamator trap collects all mercury from the evolved gases and a dual-path length cuvette/spectrophotometer specifically determines mercury over a wide dynamic range.

With method approvals by the EPA and ASTM, the AMA254 offers a fast, cost-effective alternative to conventional CVAAS or ICP. This unique system combusts various matrices without sample pre-treatment or concentration steps—saving you valuable time. The instrument requires no hazardous chemicals, providing a mercury determination in approximately five minutes.

Features Include



Amalgamator

Traps all mercury vapor on a gold-plated ceramic tube; doses the mercury to the cuvette system through flash heating.

Cuvette System

Detection system based on a standard atomic absorption spectrophotometer at a specific wavelength (253.7 nm). Dual-path length cuvette expands the dynamic range from the ppb level to the ppm level.

Direct Combustion System

Various liquid and solid samples. The oxygen-rich combustion tube is heated to 750°C.



Optional Autoloader

Rotating carousel holds up to 45 nickel sample boats; boats are automatically inserted into the combustion/catalyst tube.



AMA 254 Specification Sheet

Principle:	atomic absorption spectrometry, EPA 7473 and ASTM D-6722 compliant
Arrangement:	single beam, serial arrangement of cuvettes
Control of instrument functions:	Windows PC
Light source:	low pressure mercury lamp
Wavelength:	253.65 nm
Interference filter:	254 nm, half-width 9 nm
Detector:	silicon UV diode
Detection limit:	0.01 ng Hg (0.002 ng Hg with HS cuvette)
Working ranges:	automatic switching; switching point A = 0.8000
1st range:	0.05 (0.015 with HS cuvette) - 40* ng Hg
2nd range:	40* - 600 ng Hg
Reproducibility:	< 1.5%
Typical analysis time:	5 min's
Sample treatment:	programmable
drying period:	1 - 999 s
decomposition period:	1 - 999 s
waiting period:	1 - 999 s
Calibration:	solution, reference material, linear and quadratic curve type
Sample characteristics:	solution, solid material
Dosing volume:	
external sampling, max.:	500 µl, 1500 µl (big boat)
internal sampling:	depended on sampling device
Weight of sample, max.:	500 mg, 1500 mg (big boat)
Possibility of preconcentration:	max. 10 times
Carrier gas:	oxygen
	inlet pressure: 200 - 250 kPa
	flow rate: approx. 160 ml/min (approx. 90 ml/min HS version)
	optional carrier gas: air (oil free compressor)
Power voltage:	230 V, 50 Hz
Power consumption, max.:	900 VA
standby:	100 VA
Operating conditions:	
temperature:	0 - 35 °C
pressure:	86 - 106 kPa
rel. humidity:	80 %
protection:	IP2X
optional:	mercury trap at exhaust
Dimensions:	w: 723 mm h: 227 mm d: 460 mm
Weight:	46 kg (transport weight: 54 kg)

* 2nd range is used when absorbance measured on 1st range is higher than 0.8000

Autosampler ALS 254

Arrangement:	Autosampler for liquid samples based on motor driven precise syringe, auto clean and blank cycles
Working range:	10 µl - 1500 µl
Number of samples:	42 (+ zero calibration solution + bulk standard + cleaning solution)
Reproducibility:	better than 1.5% for volume over 50 µl
Accuracy:	+/- 1.5% +/- 3 µl
Sample characteristics:	liquid, the diameter of dispersed solid material should not exceed 300 µm
Rinsing solution:	non-flammable liquid containing acids up to 3%

Autosampler ASS 254

Arrangement:	Autosampler for solid and/or liquid samples, auto clean and blank cycles
Working range:	up to 1500 µl or 1500 mg
Number of samples:	44 (small boats), 35 (big boats)
Sample characteristics:	Any kind of solid/liquid sample that can be analysed by the AMA 254