The Hydra-C Direct Mercury Analysis



Universal Calibration and No Sample Preparation





Hydra-C



Large capacity autosampler with 70 sample locations provided



Easy furnace access for maintenance



Modular design for easy transport and maintenance

Mercury Analysis without the mess

Thermal Decomposition Process

- The Hydra-C employs the thermal decomposition process described in U.S. EPA Method 7473. This process heats the sample to release its mercury, capturing the mercury vapor as it evolves on a gold trap. Subsequent heating of the trap releases the mercury for measurement by atomic absorption.
- This technique permits the use of a single calibration for a wide range of matrices such as fish, coal, soil, water, and biological fluids.
- With the Hydra-C, samples are deposited in native form directly into the instrument without any chemical pretreatment required.



With the Hydra-C

- A 25 cm optical path provides high sensitivity and a 2 cm cell provides a wide dynamic range.
- Catalyst and gold traps are easily maintained without the need for tools.
- A 70 position autosampler is included for high sample throughput during unattended operation.
- Furnace temperatures are continuously monitored with real time display.
- Includes an automatic sample weight entry (with optional balance).
- A full set of diagnostic tests are provided to ensure consistent optimum performance.

SAMPLE	NO.	CERTIFICATE (ppm)	MEASURED (ppm)	RECOVERY (%)
Bovine Liver	1577	0.016	0.0178	111.7
Blood	Lypho 1	9.60	9.08	94.8
Dogfish	Dorm-2	4.64	4.34	93.5
Oyster	1566	0.057	0.061	107.0
Soil	8406	0.06	0.061	101.7
Coal	HC-35150	0.176	0.177	100.6

Advantages of the Hydra-C

- ✓ Results in 5 minutes
- ✓ No sample preparation
- No corrosive chemicals used
- No hazardous waste produced
- Applicable for both solid and liquid samples
- Many sample matrices processed identically

Typical Applications

- Coal
- Fly Ash
- Soil
- Sludge
- Sediment
- Water
- Wastewater
- Effluent
- Ore
- Minerals
- Foods
- Feed
- Fertilizer
- Beverages
- Blood
- Urine
- Hair
- Petrochemical



Powerful...

yet easy-to-use software



Instrument control graphically displays system parameters and controls

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rin Coal-1 Piesuts	e	Income	Langer	1.0.1	ngle (* Al		telle stille
rin Coel-1	Seruse D	Cabled to	Conc [reg/g]	1922491	Sentrale Wt[0]	JLADS.	Califactor
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	Sultur in Cold.	EHD	176.0000	212960	0.1210	\$67637	LOW
	Sufur in Com.	Ento	1/6.0000	10/360	0.0610	30022	LUW
	u ippe-i	END	100.0000	10.0000	6.1000	206287	LOW
6-1	0.1ppm-1	EAS	100.0000	15,0000	0.1500	204146	LOW
C-1	0.1ppm-1	EAD	100.0000	10.0000	0.1000	1883327	LOW
	u ippre-1	EALD	100.0000	10,0000	0.1000	212993	LUW
S	0.1ppm /300	ERE	84,5204	84328	0.1000	183252	LITW
	0.1ppm/500	E4D	36.5.745	216.72	0.1000	21/361	LOW
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	Cost Mappo	EAD	185 4/53	13 4035	4.4712	32.5217	LUW
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85k-98	2537.5	A	C 1	43.3			
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Analyses reported sequentially, each with full graphical detail available



All analytical parameters for each sample are displayed with audit trail for any recalculation data

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🖝 1ppm Hg	1.0	Ce Shi	10.5 ggm in H\$403	0.050000	300	16	853	150	160	30
ef 10pm	1200	64.04	01 pages in 14803	0 100000	300	72	1850	100	100	30
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and crowd 1547	5	04.24	0.1 ppm in 149403	0.108000	.300	72	(655)	160	60	30
1 mm 11 M	2.0	04/94	10.5 ppm in 149403	0.250600	300	178	850	150	60	30
AND INTE	2.0	Car bis	10.1 ppm 21 PB803	0.500000	300	380	1850	150	100	30
006 1321	8.1	interes.	004 1942	0.113000		38	1050	100	100	30
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defined Sequence Instyle										

Easy to build automated sample sequences for unattended analysis



Calibration using aqueous standards or certified reference materials



Built-in custom report generator allows users to select desired data fields and appearance order

Specifications

Principle	Atomic Absorption with Thermal Decomposition
Source of light	Low pressure mercury lamp
Instrument control	External PC computer system
Hg wavelength	253.65 nm
Detectors	UV enhanced photodiodes (2)
Detection limit	0.005 ng Hg
Working ranges	Automatic scale change Dynamic range 0.05 ng – 600 ng Hg
Repeatability	<1.5 % @ 10 ng Hg
Average analysis time	5 minutes
Sample treatment Drying time Decomposition time Waiting time	Adjustable from 1 – 999 s 1 – 999 s 1 – 999 s
Calibration Number of standards	Standard solution or CRM Minimum 2 (blank & high), maximum 33

Sample type	Liquid or solid
Maximum injection volume	500 μl (refractory boat), 1400 μl (nickel boat)
Maximum sample weight	500 mg (refractory boat), 1500 mg (nickel boat)
Pre-concentration capability	10 time maximum
Carrier gas Input pressure Peak flow	Oxygen 15 Psi (100 kpa) 200 ml/min
Energy consumption Peak (W) Standby (W)	600W <100W
Dimensions w/AS	19.5"w x 19"d x 18.5"h (495w x 482d x 470h mm)
Weight (kg) w/AS	44 lbs (20 kg)
Autosampler (AS)	
Number of samples	70 with small or large boats
Sample types	Liquid or solid
Others	
Power	110/220 VAC, 50/60 Hz
Operating conditions	
Temperature	16 − 35 °C
Relative humidity	Maximum 80 % non-condensing



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