

The Hydra-C

Direct Mercury Analysis



New
Enhanced
Performance
Detection Limit
0.005 ng

Universal Calibration and No Sample Preparation



TELEDYNE LEEMAN LABS
A Teledyne Technologies Company

Mercury Analysis

without the mess



Hydra-C



Large capacity autosampler with 70 sample locations provided



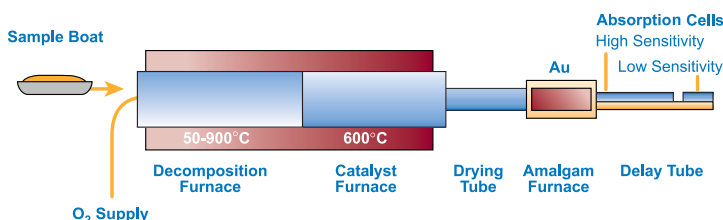
Easy furnace access for maintenance



Modular design for easy transport and maintenance

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.



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

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.

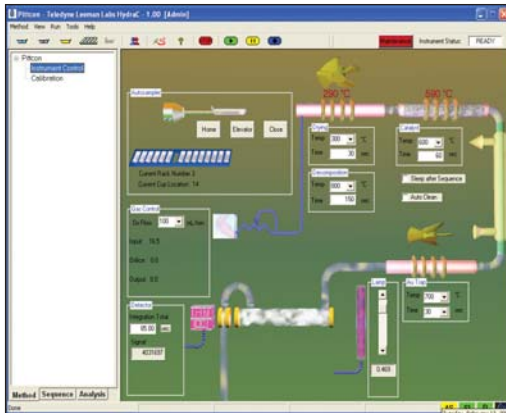
Typical Applications

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

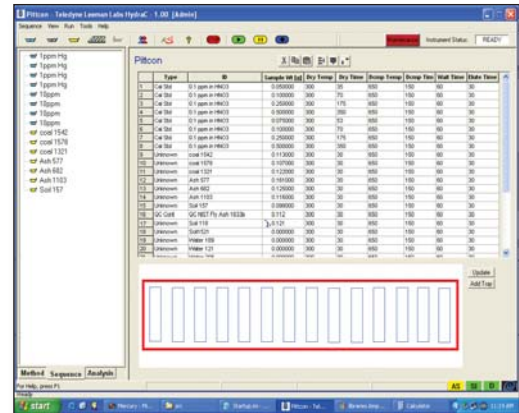
SAMPLE	NO.	CERTIFICATE (ppm)	MEASURED (ppm)	RECOVERY (%)
Bovine Liver	1577	0.016	0.0178	111.7
Blood	Lypho 1	9.60	9.08	94.8
Dogfish	Dorm-2	4.64	4.34	93.5
Oyster	1566	0.057	0.061	107.0
Soil	8406	0.06	0.061	101.7
Coal	HC-35150	0.176	0.177	100.6

Powerful...

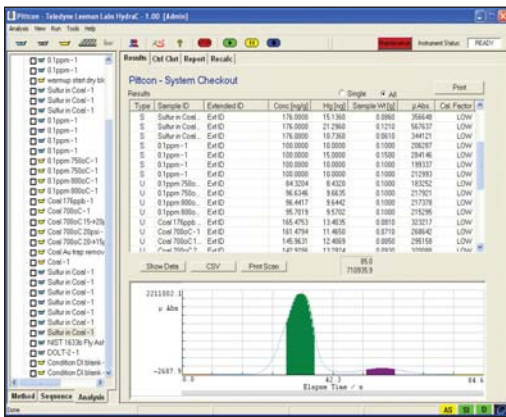
yet easy-to-use software



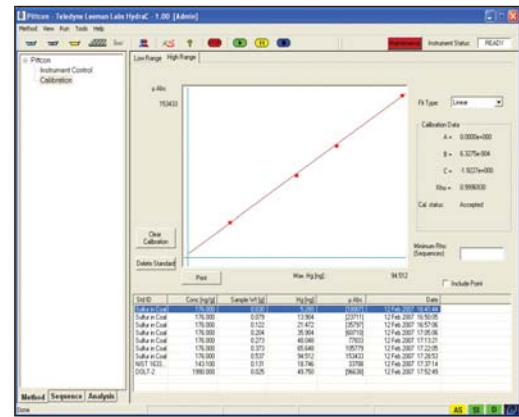
Instrument control graphically displays system parameters and controls



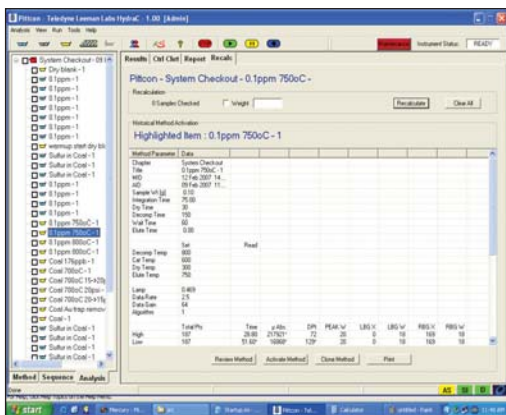
Easy to build automated sample sequences for unattended analysis



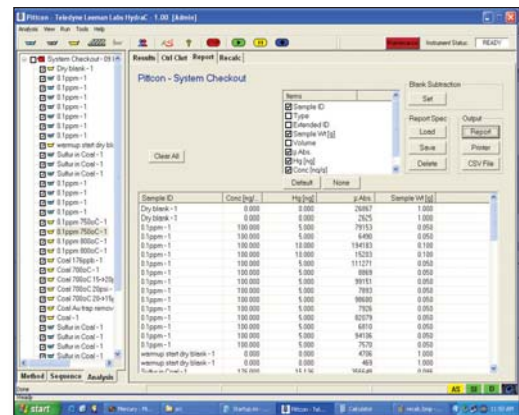
Analyses reported sequentially, each with full graphical detail available



Calibration using aqueous standards or certified reference materials



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



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 <i>Drying time</i> <i>Decomposition time</i> <i>Waiting time</i>	Adjustable from 1 – 999 s 1 – 999 s 1 – 999 s
Calibration <i>Number of standards</i>	Standard solution or CRM <i>Minimum 2 (blank & high), maximum 33</i>

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 <i>Input pressure</i> <i>Peak flow</i>	Oxygen 15 Psi (100 kpa) 200 ml/min
Energy consumption <i>Peak (W)</i> <i>Standby (W)</i>	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
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Operating conditions

Temperature	16 – 35 °C
Relative humidity	Maximum 80 % non-condensing



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