Mercury Measurements Using Sorbent Traps
For Natural Gas and Other Gaseous Fuels

Suitable for ASTM Methods D5954 and D6350

The complete solution for measuring mercury in natural gas and other gaseous fuels consists of four components. These components can be utilized independently or together depending on the application. They include:

1. Gold Sorbent Traps
2. Sorbent Trap Sampling System
3. Pressure Reduction Module
4. Sorbent Trap Analysis

Applications

- Natural Gas Plants
- Natural Gas Storage Facilities
- Refineries
- Natural Gas Pipelines
- Chemical Plants
- Boiler MACT

1. Gold Sorbent Traps

Gold Sorbent Traps are designed to perform ASTM Methods D5954 or D6350. The most common application for these methods is to measure mercury concentration in natural gas and other gaseous fuels. It is especially important to selectively capture mercury while excluding organic compounds, which can bias the results.

Key Features

- Selectively captures mercury without interfering compounds
- Ability to quantify extremely low concentrations of mercury
- Zeroing process during manufacturing to remove all background mercury
- Compatible with Ohio Lumex Sorbent Trap Sampling System that is suitable for hazardous areas

Complies with ASTM Methods

2. Sorbent Trap Sampling System SS-GF-GT-100SC

This sampling system is specifically designed for use with Gold Sorbent Traps for ASTM Methods D5954, D6350, or other similar applications. Simply insert two Gold Sorbent Traps into the heated chamber, start the system, and wait until the mass flow controller totalizer displays the desired sample volume.

Key Features

- Suitable for Class 1 Division 2 hazardous areas
- Accurately control flow with simple-to-use mass flow controller
- Heated sorbent trap pocket to prevent condensation
- Compact and portable
- Wetted surfaces coated with SilcoNert® 2000

Options

- Mounted in transportable enclosure
- Combined with Pressure Reduction Module on one panel or in one transportable enclosure

Technical Specifications			
Max Inlet Pressure	5 psig	**Maximum Totalizer Range**	9999.999 L
Max Flow	2 lpm	**Preloaded Gas Calibrations**	98
Uncertainty	±0.4% of reading or 0.2% full scale	**Ingress Protection**	IP40
Repeatability	±0.2% full scale	**Set Temperature**	60 C
Zero and Span Shift	0.02% full scale/Celsius/atm	**Electrical Connection**	Conduit (CSA) GHR1/2" female NPT, Cable OD 3/8 (10 mm)
Response Time	100 ms	**Power Requirements**	110-265 VAC, 80 W
Warm-up Time	15 min	**Gold Trap Size**	6 mm OD
Mass Reference Conditions	STP 25 C & 14.696 psia (adjustable)	**Wetted Surfaces**	Coated with SilcoNert® 2000
Operating Temperature	-10 to +60 C		

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3. Pressure Reduction Module SS-GF-PR-100

The Sample Reduction Module is designed to be used in conjunction with the Sorbent Trap Sampling System or for other applications such as filling Tedlar® Gas Sampling Bags. The module reduces incoming sample pressure from as high as 6,000 PSIG to an acceptable lower pressure.

Key Features

- Suitable for Class 1 Division 2 hazardous areas
- Compact and portable
- Convenient for quick field operation or permanent installation
- Inlet and outlet isolation ball valves
- Particulate filter
- A multi-power intake electrical heating system controls the regulator temperature to compensate for Joule-Thomson effect; while a proportional temperature controller allows for precise control
- The regulator is designed with a long, spiral flow path, including pre- and post-regulation heat exchangers that provide heat transfer to preserve sample integrity and prevent condensation

Options

- Mounted in transportable enclosure
- Valve & flow meter (for use with Tedlar® Gas Sampling Bags)
- Combined with Sorbent Trap Sampling System on one panel or in one transportable enclosure (see image to right)
- Wetted surfaces coated with SilcoNert® 2000

Technical Specifications	
Max Inlet Pressure	6000 PSIG (lower if non-standard fittings requested)
Outlet Pressure	Adjustable
Outlet Flow	Adjustable
Temperature Range	-20 to +60 C, non-condensing humidity 0 to 100%
Port Sizes	¼"
Maximum Flow Rate	10 lpm
Wetted Surfaces	316/316 L stainless steel NACE compliant, PFA, Fluoroelastometer (SilcoNert® 2000 coating optional upon request)
Set Temperature	60 C (adjustable)
Warm-up Time	15 min
Electrical Connection	Conduit (CSA) GHR ½" female NPT Cable OD 3/8" (10 mm)
Power Reqirements	110-265 VAC, 80W
Ingress Protection	IP65