

Tekran Model 2537Xi Industrial Hygiene Mercury Monitor **With Optional Multi-Port Sampling** Rev. 102120

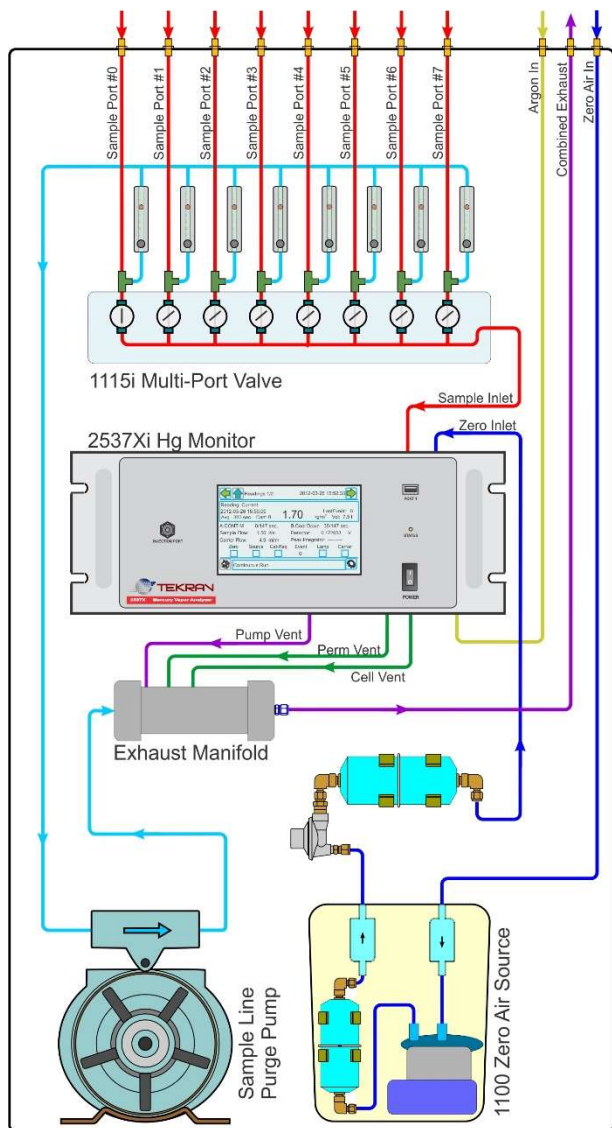


Human Mercury Exposure and Risk

Inhalation of vapor is the primary route of elemental mercury toxicity in the workplace environment. Inhaled mercury vapor is readily absorbed by the lungs (80% efficiency), therefore prolonged exposure above regulatory limits in workplace air is of significant concern (OSHA 8-hr limit of 0.1 mg/m³, NIOSH 10-hr limit of 0.05 mg/m³). The typical method for documenting worker exposure to mercury vapor is the use of badge dosimeters. These devices must be sent out for commercial laboratory analysis after worker Hg vapor exposure has occurred. Hand-held air mercury monitoring devices are also employed for spot checks, however these devices have known interferences and lack continuous, automated monitoring. Industrial and indoor air mercury levels are normally very inhomogeneous so small sample volumes of hand-held devices create additional variability, especially combined with device movement. Hand-held instruments often have limited analytical intervals before regeneration is required, and calibration is lacking or limited to an integrity check, so accuracy is a concern.

The Tekran 2537Xi Industrial Hygiene Monitor overcomes all of these issues and provides continual analysis of Hg levels in workplace air. The system has a built-in mercury permeation source used to automatically confirm the instrument response remains accurate at all times. The 2537Xi employs the widely-used and accepted gold amalgamation mercury collection technology with CVAFS detection. This method virtually eliminates all interferences and the selectivity and sensitivity are unmatched.

The 2537Xi is capable of air mercury monitoring at up to 8 unique locations when paired with a multiplexer valve unit. The valve switching parameters for each unique sample location can be programmed in a number of ways – See [Tekran Model 1115i Brochure](#) for additional details. Tekran can also provide turn-key units specifically for industrial monitoring – see diagram below. This system can be further customized according to customer needs including audible alarm at user-defined limits, and visual display units to report the current concentration at each sample location.



2537Xi Electronics Platform

- Network enabled with remote access & control
- Touch screen interface
- Local data storage and front panel USB port
- Multiple data logging options
- Additional functionality via optional s/w plugins (standard additions, remote valve control, etc.)

Detector

- Lamp stabilizer and detector electronics
- Easy servicing of optical bench components
- Improved instrumental stability
- Digital PMT control and display

Mercury Permeation Source

- Low dead volume permeation chamber
- Valve improvements to reduce pressure effects
- Digital perm source set point and display

Cartridge / Valve Assembly

- Low dead volume valve assembly
- Constant power heater control insures consistent temp over heater life
- Fast cool down time with independent high-velocity channelled fans

Specifications

Analyte:	TGM (Total Gaseous Mercury)
Principle:	Gold pre-concentration with atomic fluorescence detection (CVAFS)
Range:	Selectable from < 0.1 ng/m ³ to 0.250 mg/m ³ , higher levels possible
Sampling Cycle:	2.0 – 10 min
Sample Flow:	0.2 – 0.5 L/m
Flow Totalization:	Precision mass flowmeter (MFM)
Carrier Gas:	Argon with mass flow controller (MFC) for superior stability
Calibration:	Automatic using internal permeation source.
Physical:	Self-contained. 19" rack mountable (4U height)