

MerPAS

Natural Gas: Industrial Health Air Mercury Monitoring

Rev. 071125

Human Mercury Exposure and Risk

Workers can unwittingly be exposed to gaseous elemental mercury well above occupational exposure standards over the entire natural gas production process, maintenance and decommissioning. For example, worker mercury exposure can occur during pipeline pig launching and receiving operations, orifice meter inspections, routine waste handling, routine plant operations, turnarounds/shutdowns, and process operations. Chronic exposure (OSHA PEL = 0.1 mg/m^3) can lead to permanent damage to the nervous system and kidneys. Acute exposure (NIOSH IDLH = 10 mg/m^3) can lead to death. Mercury is heavier than air and thus can accumulate in poorly ventilated and low-lying areas.



Description

MerPAS (Mercury Passive Air Sampler) is a major breakthrough for low cost, high quality, industrial health mercury air monitoring. *MerPAS* is robust and easy to use. The range of sample times and concentrations provides the means for accurate, short term human exposure monitoring or long-term area monitoring. The quality of *MerPAS* has been repeatedly documented by scientists at the University of Toronto.[#] The *MerPAS* device functions using a carbon-based trapping media housed inside a diffusive sleeve. The sampler is integrated into a container for easy deployment, collection, and shipping. It can also be mounted on a support clip to be worn in the breathing zone of a field worker.



Deployed MerPAS sampler

Features

- No power or infrastructure required
- No technical skill needed for deployment
- Multiple mounting options
- Low-cost long-term integrated sampling
- Exceptionally wide application range (0.0005 ug/m³ to 1 mg/m³)
- Wide range of exposures intervals: hours to one year deployment time
- Immune to wind and temperature effects
- Use of well-known and patented radial diffusive barrier
- Highly tested and characterized





MerPAS used for worker mercury human exposure monitoring

Analysis

Tekran is able to offer both the sampler and analysis as a complete package. The *MerPAS* carbon-based sorbent has a well-defined particle size that makes it well suited for direct thermal analysis using EPA Method 7473. Alternatively, the carbon may be analyzed by traditional wet chemical techniques such as EPA Method 1631. If analytical services are needed, contact Tekran or your Tekran representative for analysis options.

Sample Deployment

The *MerPAS* sample kit includes the sample media and jar sealed tightly with a plastic lid. A second screened lid is included for use during deployment. Each sample jar is labeled with a weather-proof sticker for recording site and sample collection information, and a barcode for reliable sample tracking. The sample kit contains additional items needed for handling, mounting and return shipping. It is highly recommended to mount the *MerPAS* on the reusable mounting brackets shown above.

MERPAS-WJ	
PROJECT/SITE ID _____	
START DATE (YYYY-MM-DD HH:MM) _____	
STOP DATE (YYYY-MM-DD HH:MM) _____	
 SN - WJ00001	

MerPAS sample label

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