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Warning: Keep out of reach of children, if ingested seek medical attention immediately.



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Operating Instructions For Mercury Dual Level Monitor (Part Number: 382005)

Technical Summary

Physical Specifications:

| | |
|-------------------------|------------------------------------|
| Dimensions | (74 ± 1 mm) x (41 ± 1 mm) x (1 mm) |
| Weight | 1.5 g |
| Refrigerated shelf life | 1 year |
| Color change | white to purple |

Sampling Parameters:

| | Front | Back |
|-------------------------------------|-----------------------------|-----------------------------|
| Exposure level | 0.25 mg/m ³ · hr | 0.08 mg/m ³ · hr |
| Minimum detectable limit (8 hours) | 0.031 mg/m ³ | 0.01 mg/m ³ |
| Maximum recommended sampling time | 48 hours | 48 hours |
| Minimum recommended sampling time | 15 minutes | 15 minutes |
| Relative humidity range | 10% - 86% | 10% - 86% |
| Face velocity range | 10 - 150 cm/sec | 10 - 150 cm/sec |
| Temperature range | 50°F - 104°F | 50°F - 104°F |
| Light effect - UV (direct sunlight) | no effect | no effect |
| Light effect - visible | no effect | no effect |
| Color stability | 2 days | 2 days |

Applications:

The SafeAir mercury badge may be used for personnel or area monitoring for exposure times ranging from 15 minutes to 48 hours.

Cross Interferences:

Arsine, phosphine and other hydrides cause a positive interference. No other interferences are known.

Introduction

Mercury is a silver-white, heavy, mobile, liquid metal with no specific odor. It is readily absorbed through the skin, the gastrointestinal tract and the respiratory tract. Chronic exposure may cause inflammation of the mouth and gums, kidney damage, muscle tremors, depression and nervousness. Mercury spills and heated mercury are particularly hazardous. OSHA and NIOSH exposure limit for mercury is 0.1 mg/m³ (ceiling).

Mercury is used in barometers, thermometers, hydrometers, pyrometers, and in mercury arc lamps producing ultraviolet rays. It is also used in pharmaceuticals, agricultural chemicals and antifouling paints.

Principle of Operation

The SafeAir mercury badge is a monitoring system designed to indicate the presence of mercury at concentrations below the permissible exposure limit. The SafeAir mercury badge detects the presence of mercury by forming a color change in the shape of an exclamation mark inside the triangle. This indication is produced by a color-forming reaction which occurs when mercury reacts with a flat indicator layer.

Operating Instructions

1. Remove the pouch from the refrigerator and allow it to warm to room temperature.
2. Remove the badge from its protective pouch.
3. For personnel monitoring, attach the badge near the user's breathing zone (i.e. the collar) with the front side exposed to the surrounding atmosphere.
4. For area monitoring, attach the badge to a stand and mount in a centralized area with the front side exposed to the surrounding atmosphere.
5. The exclamation mark appears within the triangle when mercury is present. Please note that an exclamation mark may appear on either the back or the front and the back of the badge.
6. To obtain the average concentration, divide the exposure dose (mg/m³·hr) by the exposure time in hours (hr).

Storage

The SafeAir mercury badge should be refrigerated in its sealed bag at all times.

Benefits

1. Accurate Detection: The SafeAir mercury badge is designed to react selectively with mercury with minimum interference from other substances.
2. Applications: The SafeAir badge may be used for personnel screening and for area monitoring or area mapping.
3. Ease of Use: The SafeAir badge is a direct-read device that gives immediate, on-site results.

Other Available Monitors

1. SafeAir Badges:

| | | |
|---------------------------|-------------------|----------------|
| Ammonia | Formaldehyde | Phosgene |
| Aromatic Isocyanates | Hydrazine | Phosgene Dura |
| Carbon Monoxide | Hydrogen Chloride | Phosgene Medi |
| Chlorine | Hydrogen Sulfide | Sulfur Dioxide |
| Chlorine/Chlorine Dioxide | Ozone | |
2. SafeAir Color Comparators:

| | | |
|-----------------------------|---------------------|------------------|
| Chlorine | Hydrogen Chloride | Phosgene Dura |
| Chloroformates ¹ | Phosgene | Phosgene Medi |
| Hydrazine | Phosgene ext. range | TDI ² |

If you require SafeAir monitors for a chemical hazard not listed, please contact Morphix Technologies® for a free compound consultation at (800) 808-2234.

¹ To be used with the SafeAir phosgene badges

² To be used with the SafeAir aromatic isocyanates badges