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



2557 Production Rd.
Virginia Beach, VA 23454
Phone: (757) 431-2260 Fax: (757) 216-6209
E-mail: customerservice@morphtec.com



Operating Instructions For Phosgene Dura-Badge (Part Number: 382065)

Technical Summary

Physical Specifications:

Dimensions	(74 ± 1 mm) x (41 ± 1 mm) x (1 mm)
Weight	1.5 g
Shelf life	1 year at 25°C
Color change	white to red

Sampling Parameters:

Exposure dose:	
Badge	1.2 ppm·min
Badge with color comparator	1.2 – 450 ppm·min
Maximum recommended sampling time	5 consecutive days
Minimum recommended sampling time	1 minute
Relative humidity range	20% - 95%
Face velocity range	5 - 168 cm/sec
Temperature range	12°C to 37.5°C
Light effect – Indirect sunlight	no effect
Light effect – Artificial light	no effect

Applications:

The SafeAir phosgene badge may be used for personnel or area monitoring for exposure times ranging from 1 minute to 5 days. For higher resolution, the SafeAir phosgene Dura-Badge may be used in conjunction with the SafeAir phosgene Dura-Badge Color Comparator (part number: 388065).

Cross Interferences:

Acyl halides, benzoyl chloride, cyanuric chloride, carbonyl bromide, chlorine monoxide and chloroformates are known interferences. No other interferences are known.

Introduction

Phosgene is a colorless, highly toxic gas with an odor resembling moldy hay. It is an insidious poison. There is no immediate irritation even when fatal concentrations are inhaled. It may cause severe pulmonary edema (abnormal fluid build up in the lungs) or pneumonia. Inhalation of high concentrations causes choking, coughing and painful breathing. OSHA PEL (permissible) exposure limit for phosgene is 0.1 ppm (averaged over an 8-hour work shift). NIOSH IDLH (immediately dangerous to life or health) exposure limit for phosgene is 2 ppm.

Phosgene is used in the manufacturing of numerous organic chemicals. It is also used in the production of glass, resins, dyes and plastics.

Principle of Operation

The SafeAir Phosgene Dura-Badge is a monitoring system designed to indicate the presence of phosgene. The SafeAir Phosgene Dura-Badge detects the presence of phosgene 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 phosgene reacts with a flat indicator layer.

Operating Instructions

1. Remove the badge from its protective pouch.
2. Remove activation label prior to use.
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. **Between work shifts, store the badge in a sealed bag in a cool, dark environment.**
5. The exclamation mark appears within the triangle when phosgene is present. Please note that the exclamation mark will appear underneath the printed exposure dose (sensitivity).
6. To obtain the average concentration, divide the exposure dose (ppm·min) by the exposure time in minutes (min).

Storage

The SafeAir Phosgene Dura-Badge should be stored at 25°C in its sealed bag at all times. **Store the badge in a cool, dark, sealed environment between work shifts.**

Benefits

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

Other Available Monitors

1. **SafeAir Badges:**

Ammonia	Formaldehyde
Aromatic Isocyanates	Hydrazine
Carbon Monoxide	Hydrogen Sulfide
Chlorine	Mercury
Chlorine/Chlorine Dioxide	Ozone
2. **SafeAir Color Comparators:**

Chlorine	Hydrazine
Chloroformates ¹	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