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



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Publication Number: KM4-3A.3-0606
US Patent Number: 6,284,198



Operating Instructions For Ammonia Monitor (Part Number: 382010)

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 | beige to black |

Sampling Parameters:

| | |
|-------------------------------------|-----------------|
| Exposure level | 4.0 ppm-hr |
| Minimum detectable limit (8 hours) | 0.50 ppm |
| Maximum recommended sampling time | 48 hours |
| Minimum recommended sampling time | 15 minutes |
| Relative humidity range | 15% - 90% |
| Face velocity range | 10 – 150 cm/sec |
| Temperature range | 50°F - 104°F |
| Light effect – UV (direct sunlight) | not recommended |
| Light effect – visible | no effect |
| Color stability | 4 weeks |

Applications:

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

Cross Interferences:

Primary aliphatic amines react with approximately the same sensitivity. No other interference is known.

Introduction

Ammonia is a colorless gas with a sharp, irritating odor. It is a typical respiratory and eye irritant. Depending on the concentration, it may cause burning sensations, coughing, wheezing, headaches and conjunctivitis. High exposures cause caustic skin burns, eye swelling with possible loss of vision, shortness of breath and nausea. Ammonia causes chemical pneumonitis (deep lung inflammation) and pulmonary edema (abnormal fluid build up in the lungs). OSHA exposure limit for ammonia is 50 ppm (TWA). NIOSH exposure limit for ammonia is 25 ppm (TWA).

Ammonia is a commonly used chemical. As a product of normal biodegradation of bioproducts, it is spread as a pollutant in poultry plants and animal farms. Ammonia is used in the production of nitric acid, ammonia salts, fertilizers, leather, cooling and freezing systems, cleaning liquids, etc.

Principle of Operation

The SafeAir ammonia badge is a monitoring system designed to indicate the presence of ammonia at concentrations below the permissible exposure limit. The SafeAir ammonia badge detects the presence of ammonia 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 ammonia 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 ammonia 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·hr) by the exposure time in hours (hr).

Storage

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

Benefits

1. **Accurate Detection:** The SafeAir ammonia badge is designed to react selectively with ammonia 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:**

| | | |
|---------------------------|-------------------|------------------|
| Aniline | Dimethyl Amine | Mercury |
| Aromatic Isocyanates | Formaldehyde | Nitrogen Dioxide |
| Carbon Dioxide | Hydrazine | Ozone |
| Carbon Monoxide | Hydrides | Phosgene |
| Chlorine | Hydrogen Chloride | Sulfur Dioxide |
| Chlorine/Chlorine Dioxide | Hydrogen Sulfide | UDMH |
2. **SafeAir Color Comparators:**

| | | |
|-----------------------------|---------------------|------------------------|
| Arsine ¹ | Hydrazine | Phosphine ¹ |
| Carbon Dioxide | Hydrogen Chloride | TDI ⁴ |
| Chlorine | MMH ³ | UDMH |
| Chloroformates ² | Phosgene | |
| Diborane ¹ | Phosgene ext. range | |

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 hydrides badges

² To be used with the SafeAir phosgene badges

³ To be used with the SafeAir hydrazine dual level badges

⁴ To be used with the SafeAir aromatic isocyanates badges