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



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SAFEAIR® SYSTEM

Operating Instructions For Dimethyl Amine (DMA) Monitor (Part Number: 382019)

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 yellow

Sampling Parameters:

Exposure level	5.0 ppm-hr
Minimum detectable limit (8 hours)	0.6 ppm
Maximum recommended sampling time	48 hours
Minimum recommended sampling time	5 minutes
Relative humidity range	20% - 85%
Face velocity range	10 – 150 cm/sec
Temperature range	60°F - 95°F
Light effect – UV (direct sunlight)	no effect
Light effect – visible	no effect
Color stability	2 weeks

Applications:

The SafeAir DMA badge may be used for personnel or area monitoring for exposure times ranging from 5 minutes to 48 hours.

Cross Interferences:

Other secondary aliphatic amines react with approximately the same sensitivity. No other interferences are known.

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Introduction

Dimethyl amine (DMA) is a colorless, flammable gas with a pungent, fishy, or ammonia-like odor at room temperature. DMA is irritating to the eyes and can cause redness and pain. Severe inhalation exposure causes runny nose, coughing, sneezing, burning of the nose and throat, and shortness of breath. Delayed pulmonary effects may occur in the form of tracheitis, bronchitis, pulmonary edema, and pneumonitis, which may be associated with persistent cough, increased bronchial secretions, shortness of breath at rest, fever, and respiratory distress. OSHA and NIOSH exposure limit for dimethyl amine is 10 ppm.

DMA is used as raw material in the synthesis of agricultural insecticides, insect attractants, and fungicides, vulcanization accelerators for sulfur-cured rubber, softeners and lubricants, textile water-proofing agents; tanning and dehairing, cationic surfactants, pharmaceuticals, detergents and soaps. It is also used as a general solvent, an acid gas absorbent and flotation agent in manufacture of dyes in electroplating. It is also used as a component of missile fuel and rocket and pesticide propellants.

Principle of Operation

The SafeAir DMA badge is a monitoring system designed to indicate the presence of DMA at concentrations below the permissible exposure limit. The SafeAir DMA badge detects the presence of DMA 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 DMA 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 DMA 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 DMA badge should be refrigerated in its sealed bag at all times.

Benefits

1. **Accurate Detection:** The SafeAir DMA badge is designed to react selectively with DMA 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	Chlorine/Chlorine Dioxide	Mercury
Aniline	Formaldehyde	Nitrogen Dioxide
Aromatic Isocyanates	Hydrazine	Ozone
Carbon Dioxide	Hydrides	Phosgene
Carbon Monoxide	Hydrogen Chloride	Sulfur Dioxide
Chlorine	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