SAFEAIR

Operating Instructions
Hydrazine Badge
(Part Number: 382002)

Introduction

Hydrazine is a colorless liquid with a penetrating odor resembling that of ammonia. It is extremely destructive to the tissues of the mucous membranes and upper respiratory tract. Symptoms of exposure may include coughing, wheezing, laryngitis, and shortness of breath, headache, nausea and vomiting. OSHA PEL (permissible exposure limit) for hydrazine is 1 ppm (TWA). NIOSH REL (recommended exposure limit) for hydrazine is 0.03 ppm (2 hour ceiling). NIOSH recommends that hydrazine be handled as a potential occupational carcinogen in the workplace.

Hydrazine is used predominantly as a fuel for rocket and jet engines and in the manufacturing of pharmaceuticals. Hydrazine salts are used in refining and as corrosion inhibitors.

Principle of Operation

The SafeAir hydrazine badge is a monitoring system designed to indicate the presence of hydrazine at concentrations below the permissible exposure limit. The SafeAir hydrazine badge detects the presence of hydrazine 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 hydrazine reacts with a flat indicator layer.

Physical Specifications:

Dimensions	74 mm x 41 mm x 1 mm
Weight	1.5 g
Refrigerated shelf life	1 year
Color change	orange to maroon

Sampling Parameters:

Exposure dose:	
Badge	8 ppb·hr
Badge with color comparator	4.5 – >300 ppb·hr
Minimum detectable limit (8 hours)	1 ppb
Maximum recommended sampling time	2 days
Minimum recommended sampling time	5 minutes
Relative humidity range	23% - 83%
Face velocity range	5 – 168 cm/sec
Temperature range	17°C - 35°C (63°F - 95°F)
Light effect – UV (direct sunlight)	no effect
Light effect – visible	no effect
Color stability	4 weeks
Known Interferences	Monomethyl hydrazine, and aromatic amines

Operating Instructions

1. Prior to opening and removing a badge from its inner silver pouch, allow the badges to warm to room temperature. Store the remaining badges in the inner silver pouch zip-closed inside the white outer pouch.
   Once the silver pouch is opened, the remaining badges must be used within 30 days.
2. 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.
3. For area monitoring, attach the badge to a stand and mount in a centralized area with the front side exposed to the surrounding atmosphere.
4. The exclamation mark appears within the triangle when hydrazine is present. Please note that the exclamation mark will appear underneath the printed exposure dose (sensitivity).
5. To determine the exposure dose, a SafeAir hydrazine color comparator (PN: 383001) is available for use with this badge. To obtain the average concentration, divide the exposure dose (ppb·hr) by the exposure time in hours (hr).

WARRANTY EXCLUSIONS AND LIMITATION OF LIABILITY

IF THE USER DOES NOT ACCEPT THE FOLLOWING TERMS, THE USER SHOULD NOT USE THE SAFEAIR BADGES AND COLOR COMPARATORS.

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Warning: Keep out of reach of children. If ingested seeks medical attention immediately.

MORPHIX TECHNOLOGIES

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