



Operating Instructions Ammonia Badge (Part Number: 382010)

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 buildup in the lungs). OSHA PEL (permissible exposure limit) for ammonia is 50 ppm (TWA). NIOSH REL (recommended exposure limit) for ammonia is 25 ppm (TWA).

Ammonia is a commonly used chemical. As a product of normal degradation of bio products, 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 from beige to black in the shape of an exclamation mark inside the triangle. This indication is produced by a color-forming reaction that occurs when ammonia 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	beige to tan to black*

**Final color is humidity dependent. Low humidity final color is black, high humidity final color is green/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	10°C - 40°C (50°F - 104°F)
Light effect – UV (direct sunlight)	not recommended
Light effect – visible	no effect
Color stability	4 weeks
Known Interferences	primary aliphatic amines

Operating Instructions

1. Allow the badge to warm to room temperature prior to removing the badge from its protective pouch.
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 ammonia is present. The exclamation mark will appear underneath the printed exposure dose (sensitivity). **Please note that additional color development may occur for up to five minutes after the end of the sampling period.**

WARRANTY EXCLUSIONS AND LIMITATION OF LIABILITY

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

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



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Publication Number: 01-382010A.-0921
US Patent Number: 6,284,198