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



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## Operating Instructions For Aniline Monitor (Part Number: 382021)

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### 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	orange to maroon

#### Sampling Parameters:

Exposure level	0.2 ppm-hr
Minimum detectable limit (8 hours)	0.025 ppm
Maximum recommended sampling time	48 hours
Minimum recommended sampling time	5 minutes
Relative humidity range	23% - 83%
Face velocity range	5 – 168 cm/sec
Temperature range	63°F - 95°F
Light effect – UV (direct sunlight)	no effect
Light effect – visible	no effect
Color stability	4 weeks

#### Applications:

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

#### Cross Interferences:

Other aromatic amines react with approximately the same sensitivity. Hydrazine and monomethylhydrazine show color formation at 8.5 ppb-hr. Unsymmetrical dimethylhydrazine shows color formation at 60 ppb-hr. No other interferences are known.

## Introduction

Aniline is a colorless oily liquid with a characteristic taste and odor. Acute inhalation of high levels of aniline may result in upper respiratory tract irritation and congestion. The major effect from chronic (long-term) exposure to aniline is the formation of methemoglobin, which can cause cyanosis (interference with the oxygen-carrying capacity of the blood). Aniline is severely irritating to mucous membranes and affects the eyes, skin, and upper respiratory tract. Potential symptoms include headache, weakness, lethargy, dizziness, drowsiness, confusion, disorientation, unconsciousness, ataxia, eye irritation, respiratory irritation (dryness of throat, coughing, wheezing), jaundice, nausea, sometimes vomiting, ringing in the ears, anorexia, weight loss, anemia, skin lesions, symptoms of bladder cancer (painful urination, blood in the urine, lumps in groin or lower abdomen, pain in lower abdomen or back). The OSHA permissible exposure limit for aniline is 5 ppm (TWA).

Aniline is predominantly used as a chemical intermediate for the dye, agricultural, polymer, and rubber industries. It is also used as a solvent and has been used as an anti-knock compound for gasolines.

## Principle of Operation

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

## Benefits

1. Accurate Detection: The SafeAir aniline badge is designed to react selectively with aniline 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	Dimethyl Amine	Ozone
Formaldehyde	Nitrogen Dioxide	Phosgene
Aromatic Isocyanates	Hydrazine	Sulfur Dioxide
Carbon Dioxide	Hydrides	UDMH
Carbon Monoxide	Hydrogen Chloride	
Chlorine	Hydrogen Sulfide	
Chlorine/Chlorine Dioxide	Mercury	
2. SafeAir Color Comparators:

Arsine <sup>1</sup>	Hydrazine	Phosphine <sup>1</sup>
Carbon Dioxide	Hydrogen Chloride	TDI <sup>4</sup>
Chlorine	MMH <sup>3</sup>	UDMH
Chloroformates <sup>2</sup>	Phosgene	
Diborane <sup>1</sup>	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.

<sup>1</sup> To be used with the SafeAir hydrides badges

<sup>2</sup> To be used with the SafeAir phosgene badges

<sup>3</sup> To be used with the SafeAir hydrazine dual level badges

<sup>4</sup> To be used with the SafeAir aromatic isocyanates badges