



Operating Instructions
Sulfur Dioxide Monitor
(Part Number: 382014)

Introduction

Sulfur dioxide is a colorless gas with a characteristic, irritating, pungent odor. It is corrosive and irritating to the upper and lower respiratory tracts, skin and eyes. Symptoms of mild exposure to sulfur dioxide include coughing, wheezing, shortness of breath, headache and vomiting. Exposure to high concentrations of sulfur dioxide is extremely destructive to the respiratory tract tissues. Exposure of the eyes to high concentrations may result in ulceration of the conjunctiva and cornea, whereas contact with skin causes severe burns. OSHA PEL (permissible exposure limit) for sulfur dioxide is 5 ppm (TWA). NIOSH REL (recommended exposure limit) for sulfur dioxide is 2 ppm (TWA).

Sulfur dioxide is a widely spread air pollutant. It is emitted as a byproduct in burning coal fuels in electric power generating plants, industrial boilers and molten sulfide ores in metallurgical plants. Sulfur dioxide is also used in the production and treatment of metals, sugar, cellulose, leather, fertilizers, ceramic, batteries, paper and many others.

Principle of Operation

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

Physical Specifications:

| | |
|-------------------------|------------------------------------|
| Dimensions | (74 ± 1 mm) x (41 ± 1 mm) x (1 mm) |
| Weight | 1.5 g |
| Refrigerated shelf life | 1 year |
| Color change | off-white to cranberry |

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 | 15 minutes |
| Relative humidity range | 15% - 90% |
| Face velocity range | 10 – 150 cm/sec |
| Temperature range | 59°F - 97°F |
| Light effect – UV (direct sunlight) | not recommended |
| Light effect – visible | no effect |
| Color stability | 2 weeks |
| Known Interferences | No interferences are known |

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 sulfur dioxide is present. Please note that the exclamation mark will appear underneath the printed exposure dose (sensitivity).

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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