



Operating Instructions
Chlorine Monitor
(Part Number: 382009)

Introduction

Chlorine is a greenish-yellow gas with a pungent, irritating odor. Generally, chlorine is a potent respiratory system irritant. Mild exposures to chlorine cause burning of eyes, nose and mouth. Exposure to high concentrations (e.g. 1000 ppm) is likely to be fatal. The OSHA PEL (permissible exposure limit) for chlorine is 1 ppm (ceiling), whereas the NIOSH REL (recommended exposure limit) is 0.5ppm (TWA).

Chlorine is an important chemical commodity widely used in the production of safe drinking water. It is used extensively in the production of paper products, dyestuffs, textiles, petroleum products, chlorinated solvents, etc.

Principle of Operation

The SafeAir chlorine badge is a monitoring system designed to indicate the presence of chlorine at concentrations below the permissible exposure limit. The SafeAir chlorine badge detects the presence of chlorine by forming a color change in the shape of an exclamation mark inside the triangle. This indication is produced by a color-forming reaction that occurs when chlorine 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	2 years
Color change	yellow to orange

Sampling Parameters:

Exposure dose:	
Badge	0.18 ppm·hr
Badge with color comparator	0.03 - 3.0 ppm·hr
Minimum detectable limit (8 hours)	0.023 ppm
Maximum recommended sampling time	48 hours
Minimum recommended sampling time	15 minutes
Relative humidity range	30% - 90%
Face velocity range	10 – 150 cm/sec
Temperature range	60°F - 91°F
Light effect – UV (direct sunlight)	no effect
Light effect – visible	no effect
Color stability	4 weeks
Known Interferences	bromine, iodine and hydrogen chloride

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 chlorine is present. Please note that the exclamation mark will appear underneath the printed exposure dose (sensitivity).
5. A color comparator is available for use with this badge. To obtain the average concentration, divide the exposure dose (ppm·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 seek medical attention immediately.



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