



Operating Instructions
Acetone Monitor*
(Part Number: 380020)

*May also be used to monitor for **methyl ethyl ketone (MEK)** and **methyl isobutyl ketone (MIBK)** by applying a multiplication factor

Introduction

Acetone is a colorless liquid with a sharp specific odor (the odor threshold is 4 ppb). It is narcotic in mild concentrations with toxic effects on the central nervous system. Chronic exposure causes mucous membrane irritation, heavy eyes and overnight headache. Acetone is a cumulative poison and can be found in the blood long after exposure. OSHA PEL (permissible exposure limit) for general industry is 1,000 ppm (TWA). NIOSH REL (recommended exposure limit) for acetone is 250 ppm (TWA).

Principle of Operation

The ChromAir passive monitor is a patented direct-read autogenic exposimeter. The device is constructed from three cells attached on one side to a flat indicator layer and on the other side to a series of different diffusive resistances. The third cell is connected to the diffusion path with length-of-stain properties. Acetone vapor diffuses to the cells through the different diffusive resistances and reacts with the indicator layer producing color change from yellow to pink. After saturation of the third cell, the color change creeps along the length-of-stain diffusion path producing a sharp diffusion front. The color produced on the indicator layer, as spots and length-of-stain, is a direct measure of the exposure dose. Visual color comparison is achieved by: (1) observing the formation of the pink threshold color on the individual cell and reading the corresponding exposure dose, or (2) for doses exceeding 1,500 ppm•hr reading the length-of-pink-stain from the scale.

Physical Specifications:

Dimensions	10.5 cm x 5.5 cm x 0.25 cm
Weight	11 g
Refrigerated shelf life	1 year
Color change	yellow to pink

Sampling Parameters:

Exposure range	20 - 24,000 ppm•hr
Maximum recommended sampling time	24 hours
Minimum recommended sampling time	1 minute
Relative humidity range	15% - 95%
Face velocity range	10 - 165 cm/sec
Temperature range	10°C - 45°C (50°F - 113°F)
Light effect - UV (direct sunlight)	not recommended
Light effect - visible	no effect
Known Interferences	acrolein, acetic acid

Operating Instructions

1. Allow the badge to warm to room temperature prior to removing the badge from its protective pouch
2. Enter all pertinent information on the label before monitoring is started (i.e. name, location, date and start time).
3. For personnel monitoring, attach the badge near the user's breathing zone (i.e. 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. Check the back side of the badge periodically to determine the exposure dose (ppm•hr).
6. To read the badge, locate the highest level cell with pink threshold color. If the exposure dose exceeds 1,500 ppm•hr, locate the pink color front in the length-of-stain diffusion path.
7. **For MEK exposure dose, multiply the dose printed on the badge by 0.9.**
8. **For MIBK exposure dose, multiply the dose printed on the badge by 0.8.**
9. To obtain the average concentration (ppm) in the surrounding atmosphere, divide the exposure dose (ppm•hr) by the exposure time in hours. EXAMPLE: If the sampling time is 2 hours and the badge reads 400 ppm•hr, the average concentration is determined by:
$$\frac{400 \text{ ppm}\cdot\text{hr}}{2 \text{ hr}}$$
Therefore the average concentration is 200 ppm.

WARRANTY EXCLUSIONS AND LIMITATION OF LIABILITY

IF THE USER DOES NOT ACCEPT THE FOLLOWING TERMS, THE USER SHOULD NOT USE THE CHROMAIR 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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