Operating Instructions
Formaldehyde Monitor
(Part Number: 382011)

Introduction
Formaldehyde is a colorless gas with a pungent, suffocating odor. It is a potent
irritant to eyes, nose and throat. The most common effects of low level formaldehyde
inhalation are eye, nose and upper respiratory irritation. Chronic symptoms of
exposure are itching eyes, dry and sore throat, and possible difficulty in sleeping and
unusual thirst after awakening. OSHA PEL (permissible exposure limit) for
formaldehyde is 0.75 ppm (TWA). NIOSH REL (recommended exposure limit) is
0.016 ppm (TWA). NIOSH also recommends that formaldehyde be handled as a
potential occupational carcinogen in the workplace.

Formaldehyde workplace exposure occurs because of its extensive use as an
industrial chemical in the manufacturing of resins for adhesives, plastics, coatings and
fabrics. Additional exposure to formaldehyde emissions comes from its use as a
fumigant and sterilant. The major source of atmospheric discharge of formaldehyde is
from combustion processes, specifically from the photo-oxidation of hydrocarbons in
auto emissions.

Principle of Operation
The SafeAir formaldehyde badge is a monitoring system designed to indicate the
presence of formaldehyde at concentrations below the permissible exposure limit.
The SafeAir formaldehyde badge detects the presence of formaldehyde 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 formaldehyde 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 yellowish-brown to dark brown

Sampling Parameters:
Exposure level 0.2 ppm∙hr
Minimum detectable limit (8 hours) 0.025 ppm
Maximum recommended sampling time 16 hours
Minimum recommended sampling time 15 minutes
Relative humidity range 20% - 80%
Face velocity range 10 - 150 cm/sec
Temperature range 59°F - 95°F
Light effect – UV (direct sunlight) no effect
Light effect – visible no effect
Color stability 18 hours
Known Interferences acrolein, cigarette smoke

Operating Instructions
1. Allow the badge to warm to room temperature prior to removing the badge from
its protective pouch.
2. Remove activation label before monitoring.
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.

WARRANTY EXCLUSIONS AND LIMITATION OF LIABILITY
IF THE USER DOES NOT ACCEPT THE FOLLOWING TERMS, THE USER SHOULD
NOT USE THE SAFEAIR BADGES.

Seller warrants that, for the lesser of one (1) year or the shelf-life provided on the Seller’s
product, its packaging or its literature, its products shall conform to the description of such
products as provided on the Seller’s product, its packaging or its literature. THIS
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FITNESS FOR ANY PARTICULAR PURPOSE. Seller’s warranties made in connection with
this sale shall not be effective if Seller has determined, in its sole discretion, that Buyer has
misused the products in any manner, has failed to use the products in accordance with safe
industry standards and practices, or has failed to use the products in accordance with
Seller’s written operating instructions, or other instructions furnished by Seller to Buyer.

Seller’s sole and exclusive liability and Buyer’s exclusive remedy with respect to products to
Seller’s satisfaction to be defective or nonconforming shall be replacement of such products
without charge or refund of the purchase price, in Seller’s sole discretion, upon the return of
such products in accordance with Seller’s instructions. All claims must be brought within
one (1) year of shipment, regardless of their nature.

SELLER SHALL NOT IN ANY EVENT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL
OR SPECIAL DAMAGES OF ANY KIND RESULTING FROM ANY USE OR FAILURE OF
THE PRODUCTS, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE INCLUDING, WITHOUT LIMITATION, LIABILITY FOR LOSS OF USE,
LOSS OF WORK IN PROGRESS, DOWN TIME, LOSS OF REVENUE OR PROFITS,
FAILURE TO REALIZE SAVINGS, LOSS OF PRODUCTS OF BUYER OR OTHER USE OF
ANY LIABILITY OF BUYER TO A THIRD PARTY ON ACCOUNT OF SUCH LOSS, OR
FOR ANY LABOR OR ANY OTHER EXPENSE, DAMAGE OR LOSS OCCASIONED BY
SUCH PRODUCT INCLUDING PERSONAL INJURY OR PROPERTY DAMAGE UNLESS
SUCH PERSONAL INJURY OR PROPERTY DAMAGE IS CAUSED BY SELLER’S GROSS
NEGREGANCE.

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