

CHLOR-ALKALI II

CHLORINE LEAK RESPONSE PROCEDURE

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REVISED:
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AREA: SAFETY

TYPE: PROCEDURE

- I. OBJECTIVE: The objective of this procedure is to provide a standard method for locating and identifying a chlorine leak. The procedure includes the expected means by which personnel are expected to locate a leak as well as the proper respiratory protection that must be used while locating and repairing the leak.
- II. FREQUENCY: This procedure shall be used each time a leak is detected in the plant. A leak might initially be detected by the area chlorine monitors which are displayed in the control room, or by the presence of a chlorine odor.
- III. RESPONSIBILITY: It is the responsibility of each employee in the plant to understand and adhere to this procedure.
- IV. REVISIONS: N/A
- V. REFERENCES: N/A
- VI. REQUIREMENTS:
- A. NOTIFICATION: If chlorine is detected in the plant via the area chlorine monitors, then the board operator would notify the appropriate outside operator. The chlorine concentration data and required respiratory protection shall be passed on to the outside operator at this initial contact.
- If an individual out in the plant operating area detects a chlorine odor, then he or she shall notify the board operator of the observation.
- B. DOCUMENTATION: If the chlorine leak is detected on the area chlorine monitors and the concentration exceeds the trigger level as per the chlorine spill calculation procedure, then the board operator shall initiate a incident investigation write-up (green sheet).

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C. REGULATIONS: Occupational Safety and Health Administration (OSHA) regulations which refer to the American National Standards (ANSI) practices prohibit personnel exposure to concentrations of chlorine greater than the set limits below:

1. Permissible Exposure Limit (PEL) of 0.5 ppm on an 8 hour time-weighted average
2. Short Term Exposure Limit (STEL) of 1.0 ppm on a 15 min time-weighted average.
3. Immediately Dangerous to Life or Health (IDLH) of 30 ppm on an instantaneous basis.

VII. PREPARATION:

A. SAFETY/ENVIRONMENTAL

1. EQUIPMENT: Block Safety Equipment

The required respiratory equipment is determined by the concentration of the chlorine in the area of the work. The type of respiratory protection required is specifically stated in the ANSI standards which, in the case of respiratory protection, are enforced by OSHA. For the stated chlorine concentrations, the following types of respirators shall be used. The respirator types stated are the minimum that must be used. A respirator with a greater capacity may be used instead of the one listed. For example, if a half-face respirator is the minimum required, then a full-face may be substituted. A MOUTHBIT RESPIRATOR MAY BE USED FOR ESCAPE PURPOSES ONLY. NEVER USE A MOUTHBIT RESPIRATOR FOR ANY TYPE OF WORK!

5 ppm or less - Half-face respirator
10 ppm or less - Full-face respirator with
cartridges
30 ppm or less - Full-face respirator with
canister
greater than 30 ppm - Self-contained breathing
apparatus (Scott Air Pack)
or
Breathing air with egress
attachment

2. HAZARDS: Cl₂ inhalation/Cl₂ skin or eye exposure.

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3. PRECAUTIONS: Observe the wind direction before attempting to locate or repair a chlorine leak. It is important to approach chlorine leaks from an upwind direction.

B. EQUIPMENT:

1. Squirt bottle of ammonia water solution
(1:4 ammonia solution out of the jug that must be diluted with water 1:4)
2. Portable chlorine sensor

VIII.

PROCEDURE:

1. Any indication of loss of containment requires immediate response to verify the leak. The indications will most often be from the area chlorine monitor system. Notification may come from an employee (Dow or contract) in the field.
2. Board operator will announce over the intercom that chlorine has been detected in the area and that personnel should leave the area.

"Attention in the block. We are picking up some chlorine in Area ____ use your respirator and leave the area."
3. Board operator will call the outside operator by radio, intercom, or in person. The board operator shall inform responding operator what the chlorine concentration is based on available knowledge. The board operator shall remind the responding operator what respiratory protection is required based on the best knowledge of the chlorine concentration.

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