## Gaseous Chlorine Awareness

1. **Purpose**

The purpose of this procedure is to advise employees in areas where gaseous chlorine is being used and to provide information about the properties and hazards of gaseous chlorine.

1. **Exposure**

Exposure to chlorine could occur from an accidental spill or release. The most harmful route of exposure is from breathing chlorine gas. Exposure may also result from skin contact or eye contact with chlorine gas or by swallowing chlorine-contaminated food or water.

Possible locations where employees may be exposed to chlorine during their job functions are, but not limited to:

1. Water treatment facilities
2. Chlorine injection facilities
3. Water pre-treatment areas
4. Oil Refineries
5. Sewage Wastewater
6. Pharmaceuticals Production
7. Pulp/Paper Bleaching
8. Agricultural Pesticides
9. Food & Beverage
10. **Characteristics**

Chlorine is a powerful disinfectant and bleaching agent. In both gas and liquid forms, chlorine is a toxic substance that presents a number of hazards. Gaseous chlorine refers to chlorine purchased in its elemental form, occurring in the gaseous or-liquid state.

Chlorine is a greenish-yellow gas under normal conditions. It can be a liquid at extremely low temperatures or high pressure. It has a distinct pungent odor. Chlorine is heavier than air therefore will be found in low lying areas unless wind or other conditions provide air movement.

1. **Health Effects**

When chlorine enters the body as a result of breathing, swallowing, or skin contact, it reacts with water to produce acids. The acids are corrosive and damage cells in the body on contact. Chlorine burns the eyes, nose, and throat--eventually causing bronchial inflammation, respiratory tract damage, and death.

Chlorine is a respiratory irritant, and under conditions of sufficient concentration and exposure, can cause vomiting and death by suffocation. Chlorine, especially when combined with even small amounts of water, is highly corrosive, and can cause severe frostbite burns when brought into contact with skin and eyes.

1. **Emergency Procedures**

If you have been exposed to a release of chlorine, take the following steps:

1. Quickly move away from the area where you were exposed.
2. If exposure indoors, shut and lock all doors and windows, turn off air conditioners, fans and heaters, and close fireplace dampers.
3. Quickly remove any clothing that may have chlorine on it. If possible, clothing that is normally removed over the head (like t-shirts and sweaters) should be cut off the body to prevent additional contact with the agent.
4. Place your clothing inside a plastic bag and seal the bag tightly.
5. Quickly wash any chlorine from your skin with large amounts of soap and water, and flush your eyes with large amounts of water.
6. Remove and dispose of contact lenses.
7. Wash eyeglasses with soap and water before wearing.
8. If needed, seek medical attention right away.
9. **Contingency Plan**

The facility for which work is to be performed, shall notify us of any known potential fire, explosion or toxic release hazards related to our work and the process. They shall explain the applicable provisions of their contingency plans and provisions such as escape routes, procedures to account for employees, means of reporting emergencies, and alarm system.

Employees must be informed of where chlorine is used in the host facility and made aware of additional plant safety rules, contingency plans and provisions.