WINGER companies

WEEKLY SAFETY MEETING

CHLORINE AWARENESS

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 has a characteristic penetrating and irritating, pungent odor. The gas is greenish yellow in color and the liquid is clear amber. Gaseous chlorine is 2.5x heavier than air and will initially remain in low-lying areas unless wind or other conditions provide air movement.

HOW CAN PEOPLE BE EXPOSED TO GASEOUS CHLORINE?

Chlorine has a variety of uses. It is used to disinfect water and is part of the sanitation process for sewage and industrial waste. During the production of paper and cloth, chlorine is used as a bleaching agent. It is also used in cleaning products, including household bleach which is chlorine dissolved in water. Chlorine is used in the preparation of chlorides, chlorinated solvents, pesticides, polymers, synthetic rubbers, and refrigerants.

Chlorine is found in many industrial processes such as those used to make plastics, vinyl, and nylon, oil refineries, clean water treatment, sewage wastewater treatment, pulp/paper bleaching, pharmaceuticals, agricultural pesticides and the food/beverage industry, too. The electronics industry relies on chlorine in the production of microprocessors and computers. Chlorine supports the manufacture of gasoline additives, brake fluid, and antifreeze, as well as popular metals such as titanium, magnesium, and aluminum.

DANGERS OF GASEOUS CHLORINE EXPOSURE

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.

Because of its widespread use in industrial and commercial locations, exposure to chlorine could occur from an accidental spill or release, or from a deliberate terrorist attack. 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.

Chlorine reacts with many organic compounds to form chlorinated derivatives. Some reactions can be extremely violent, especially those with hydrocarbons, alcohols and ethers. Proper methods must be followed, whether in laboratory or plant, when organic materials are reacted with chlorine.

EMERGENCY AID OF CHLORINE EXPOSURE

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

- The first step is to prevent an injury from happening in the first place. Take all engineering and administrative actions before resorting to PPE. If that is not possible, prepare yourself and read the SDS for the product you are working with and follow the guidelines.
- In the event of an accidental spill or release, follow the emergency action plan at the facility you are working in.
- Quickly move away from the area where you think you were exposed. If the release was indoors, go outdoors.
- If it is safe indoors, shut and lock all doors and windows, turn off air conditioners, fans and heaters, and close fireplace dampers.
- 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.
- Place your clothing inside a plastic bag and seal the bag tightly. Do not handle the plastic bag, and wait for instructions on proper disposal. Disposing of your clothing in a sealed bag helps protect you and other people from additional exposure. Store the bagged clothing in a secure location away from people, especially children.
- Quickly wash any chlorine from your skin with large amounts of soap and water, and flush your eyes with large amounts of water for at least 15 minutes.
- Remove and dispose of contact lenses.
- Wash eyeglasses with soap and water before wearing again.
- If needed, seek medical attention right away.

There is no antidote for chlorine poisoning, but chlorine's effects are treatable, and most people recover. People who experience serious health effects (such as severe eye or airway irritation, severe coughing, difficulty breathing, pulmonary edema) may need hospital care.

Meeting Date: _____ Trainer: _____

Supervisor: _____ Location: _____

Attendees: (Please print clearly)

_____ _____ _____

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_____ _____ _____

WINGER

WEEKLY SAFETY MEETING

CHLORINE AWARENESS QUIZ

1. Chlorine is a powerful disinfectant and cleaning agent. True or False? _____

2. Chlorine has:
   A. A characteristic penetrating and irritating, pungent odor
   B. The gas is greenish yellow in color
   C. The liquid is clear amber
   D. All of the above _____

3. Some of the ways workers can be exposed are:
   - Production of plastics, vinyl, and nylon, electronics
   - Oil refineries
   - Water treatment
   - Sewage wastewater treatment
   - Pulp/paper bleaching
   - Pharmaceuticals
   - Agricultural pesticides
   - Food/beverage industry

   True or False?

   _____

4. Some potential health effects of Anhydrous Ammonia are:
   - Burning, tearing, temporary blindness and severe eye damage
   - May cause severe burns and blistering to the skin
   - May cause runny nose, coughing, chest pain, severe breathing difficulties, severe burns
   - Skin and respiratory related diseases could be aggravated by exposure
   - Death

   True or False? _____

5. Chlorine can cause:
   A. Respiratory irritation & vomiting
   B. Death by suffocation
   C. Severe frostbite burn to skin and eyes
   D. All of the above _____

6. Safe work practices are:
   - Know what you are working around and on
   - Read the SDS
   - Use engineering and administrative practices, i.e. air monitors
   - Wear the appropriate PPE if over safe limits

   True or False?

   _____

7. In the event of an accidental spill or release, it is important to be aware of each site's specific emergency action plan. True or False? _____

Printed Name: _____ **Trained by:** _____

Signature: _____ **Trained by Signature: _____**
Date: _____ **Location: _____**