Fact Sheet

Phosgene

ST. CLAIR COUNTY HEALTH DEPARTMENT
Our Community. Our Environment.
www.scchealth.co | /scchdmi | @scchdmi

What is Phosgene?

Phosgene is a chemical used to make plastics and pesticides. At room temperature (70°F), phosgene is a poisonous gas. With cooling and pressure, phosgene gas can be changed into a liquid so that it can be shipped and stored. When liquid phosgene is released, it quickly turns into a gas that stays close to the ground and spreads rapidly. Phosgene gas may appear colorless or as a white to pale yellow cloud. At low levels, it has a pleasant odor of newly mown hay or green corn, but its odor may not be noticed by all people. At high levels, the odor may be strong and unpleasant. Phosgene was used during World War I as a choking (pulmonary) agent. Among the chemicals used in the war, phosgene was responsible for the majority of deaths.

Exposure

The extent of exposure will depend on the route, amount, and the length of time of exposure to phosgene. If phosgene comes into contact with water or food, a person can be exposed through touching, drinking or eating the contaminated source. If phosgene gas is released into the air, people may be exposed through breathing air, skin or eye contact.

For immediate assistance, call the Poison Control Center Hotline: 1-800-222-1222.

Health Effects

During or immediately after exposure to dangerous concentrations of phosgene, the following signs and symptoms may develop:

- Coughing
- Burning sensation in the throat and eyes
- Watery eyes
- Blurred vision
- Difficulty breathing or shortness of breath
- Nausea and vomiting
- Skin contact can result in lesions similar to those from frostbite or burns

Following exposure to high concentrations of phosgene, a person may develop fluid in the lungs (pulmonary edema) within 2 to 6 hours.

Exposure to phosgene may cause delayed effects that may not be apparent for up to 48 hours after exposure, even if the person feels better or appears well following removal from exposure. Therefore, people who have been exposed to phosgene should be monitored for 48 hours afterward. Delayed effects that can appear for up to 48 hours include the following:

- Difficulty breathing
- Coughing up white to pink-tinged fluid
- Low blood pressure
- Heart failure

Showing these signs or symptoms does not necessarily mean that a person has been exposed to phosgene.

If Exposed to Phosgene

Leave the area where the phosgene was released and get to fresh air. Quickly moving to an area where fresh air is available is highly effective in reducing the possibility of death from exposure to phosgene.

- If the phosgene release was outdoors, move away from the area where the phosgene was released. Go to the highest ground possible, because phosgene is heavier than air and will sink to low-lying areas.
- If the phosgene release was indoors, get out of the building.
- Remove clothing, rapidly wash entire body with soap and water, and get medical care as quickly as possible.

Removing and disposing of clothing:

- Quickly take off clothing that has liquid phosgene on it. Any clothing that has to be pulled over the head should be cut off the body instead of pulled over the head.
- If possible, seal the clothing in a plastic bag. Then seal the first plastic bag in a second plastic bag. Removing and sealing the clothing in this way will help protect oneself and others from any chemicals that might be on clothes. Inform the local or state health department or emergency personnel upon their arrival. Do not handle the plastic bags.
- If helping other people in removing clothing, try to avoid touching any contaminated areas, and remove the clothing as quickly as possible.

Washing the body:

- As quickly as possible, wash the entire body with large amounts of soap and water. Washing with soap and water will help protect people from any chemicals on their bodies.
- If eyes are burning or vision is blurred, rinse eyes with plain water for 10 to 15 minutes. If wearing contacts, remove them and place them in the bags with the contaminated clothing. Do not put the contacts back in the eyes. If wearing eyeglasses, wash them with soap and water. It is okay to put the eyeglasses back on after washing them.

Treatment

If phosgene has been ingested (swallowed), do not induce vomiting or drink fluids.

Dial 911 and explain what has happened. Treatment for phosgene exposure consists of removing phosgene from the body as soon as possible and providing supportive medical care in a hospital setting. No antidote exists for phosgene. Exposed people should be observed for up to 48 hours, because it may take that long for symptoms to develop or reoccur.

Prevention

Most families will not be exposed to significant levels of phosgene. However, the burning of materials such as certain plastics that contain chlorinated hydrocarbons can produce phosgene gas. Stay away from fires or other heat sources where such materials may be present.

For more sources of information on this topic visit or contact:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co
MICHIGAN DEPARTMENT OF COMMUNITY HEALTH www.michigan.gov/mdch
CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov 1-888-246-2675
MICHIGAN DEPARTMENT OF COMMUNITY HEALTH TOXICS AND HEALTH HOTLINE: 1-800-648-6942
MICHIGAN OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (MIOSHA): 517-322-1814
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY: www.atsdr.cdc.gov 1-888-422-8737