How to Work Safely with

How to Work Safely with - Hazardous Products Classified as "Simple Asphyxiants"

On this page

Why is there no pictogram assigned to this hazard class?

This hazard class is not included in the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and was not included in WHMIS 1988. Therefore, there were no pictogram or symbol that could be adopted from either GHS or WHMIS 1988.

Simple asphyxiants are included in the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS). OSHA did not assign a pictogram to simple asphyxiants. WHMIS is aligned with the hazard communication elements of HCS for simple asphyxiants.

What are the hazards of simple asphyxiants?

The WHMIS signal word and hazard statement for simple asphyxiants are:

Hazard Class and Category	Signal Word	Hazard Statement
Simple asphyxiant – Category 1	Warning	May displace oxygen and cause rapid suffocation

Simple asphyxiants are gases which can become so concentrated that they displace oxygen (or, push out the oxygen) in the air. Oxygen is normally about 21 percent of the air we breathe. Low oxygen levels (19.5 percent or less) can cause symptoms such as rapid breathing, rapid heart rate, clumsiness, emotional upset, and fatigue. As less oxygen becomes available, nausea and vomiting, collapse, convulsions, coma and death can occur. Unconsciousness or death could result within minutes following exposure to a simple asphyxiant.

Simple asphyxiants are a concern for those who work in confined spaces. These gases are colourless and odourless and offer no warning properties.

Many simple asphyxiants are also classified under WHMIS as Gases under pressure. Refer to How to Work Safely with - Hazardous Products using "Gas Cylinder" Pictogram for more information.

How can simple asphyxiant products be handled safely?

- Always check the Safety Data Sheet (SDS) for information about ALL of the hazards and the necessary precautions for the product being used. Ask questions if you are not sure.
- If it is not possible to eliminate the use of the hazardous product in your workplace, evaluate whether it is possible to substitute it with a less hazardous product.
- Make sure that other controls, such as ventilation, are in place and functioning properly.
- Inspect all containers for damage or leaks before handling.
- Use only outdoors or in a well-ventilated area.
- Do not carry or transfer this product in an enclosed space (e.g., in an elevator or inside a vehicle).
- Prevent uncontrolled release.
- Avoid breathing a simple asphyxiant. Do NOT work alone with a simple asphyxiant.
- Before entry, especially into confined areas, check the atmosphere for sufficient oxygen levels with an appropriate monitor before worker entry and during work.
- Wear respiratory protection, as required.
- If personal protective equipment (PPE) is required, the employer must ensure that workers are thoroughly trained in its selection, fit, use, and maintenance. Refer to the SDS for guidance on selection.

How can simple asphyxiant products be stored safely?

- Inspect containers and storage areas regularly for signs of leakage or damage.

- Store in the original, labelled container. Keep the container tightly closed.
- Store in a well-ventilated place.
- Engineering controls are usually required in the storage area.
- Store away from incompatible materials. Check the SDS for specific information pertaining to incompatible materials and conditions to avoid.
- Avoid bulk storage indoors.

What should I do in case of an emergency?

- Understand and practice emergency procedures so that you know what to do if it becomes necessary.
- Immediately report leaks, spills or failures of the safety equipment (e.g., ventilation system).
- Immediately put on an escape-type respirator and exit the area.
- Increase ventilation into the area or move the leaking container to a well-ventilated and secure area.
- In case of oxygen deficiency: Take precautions to ensure your own safety before attempting rescue (e.g., wear appropriate protective equipment). Remove source of exposure or move all individuals to fresh air. Keep victim at rest in a position comfortable for breathing. Immediately call a Poison Centre or doctor. Specific treatment may be required.

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