

## How to Work Safely with

# How to Work Safely with - Hazardous Products using "Gas Cylinder" Pictogram

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### What does this pictogram mean?



The symbol within the pictogram is a gas cylinder. This symbol indicates that hazardous products with this pictogram are gases that are contained in a receptacle under pressure, or which are liquefied or liquefied and refrigerated. The hazards presented by these products are related to the high pressure or cold temperatures.

Hazardous products with this pictogram can be safely worked with if proper storage and handling practices are followed.

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### Which hazard classes use the gas cylinder pictogram?

This pictogram is used by one hazard class in the WHMIS physical hazards group - Gases under pressure. There are four hazard categories in this hazard class:

- compressed gas,
- liquefied gas,
- refrigerated liquefied gas, and
- dissolved gas.

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## What are the hazards of products that have the gas cylinder pictogram?

The WHMIS signal words and hazard statements for the hazard class and categories assigned this pictogram are:

<b>Hazard Class and Category</b>	<b>Signal Word</b>	<b>Hazard Statement</b>
Gases under pressure – Compressed gas	Warning	Contains gas under pressure; may explode if heated.
Gases under pressure – Liquefied gas	Warning	Contains gas under pressure; may explode if heated.
Gases under pressure – Refrigerated liquefied gas	Warning	Contains refrigerated gas; may cause cryogenic burns or injury.
Gases under pressure – Dissolved gas	Warning	Contains gas under pressure; may explode if heated.

Gases under pressure can release large amounts of gas into the workplace air very quickly which could result in health or fire hazards depending on the properties of the gas. The gas can be released deliberately by opening the cylinder valve or unintentionally from a broken or leaking valve.

If damaged, gas cylinders can rocket or spin out of control with a great force which is capable of causing significant injury and damage. These incidents are often caused when an uncapped or unsecured cylinder is knocked over and a cylinder valve breaks.

Cryogenic burns or other freezing (frostbite) injuries are associated with refrigerated liquefied gases because these gases are extremely cold.

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## Are there other hazards associated with products with the gas cylinder pictogram?

In addition to the specific hazards identified by the gas cylinder pictogram, it is important to remember that the product may have other hazards, for example:

- **Health hazards** such as acute toxicity, skin corrosion or irritation, carcinogenicity, or reproductive toxicity.
  - **Other physical hazards** such as simple asphyxiant, corrosive to metals, flammable, or reactive.
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## How can products with the gas cylinder pictogram be handled safely?

- Always check the Safety Data Sheet (SDS) and label 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.
- Prevent the release of gas into the workplace. Use only in [well-ventilated](#) areas.
- Use the smallest amount possible for a particular job.
- Always wear [eye protection](#) (chemical safety goggles) when working with gases under pressure. In some cases, a face shield will also be necessary.
- 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.

- For gas cylinders:
    - Inspect all cylinders and valves for damage. Make sure cylinders do not give off an odour or make a hissing sound. Never open a damaged valve.
    - Use the appropriate regulator. Make sure that the equipment is compatible with the cylinder pressure and contents. Do not use homemade adaptors or force connections between the cylinder valve and gas handling equipment. Never tamper with safety devices in cylinders, valves or equipment.
    - Secure cylinders to a wall or rack in an upright position. Leave the cylinder cap in place until the cylinder is secured and ready for use.
    - Close all valves when cylinders are not in use.
    - Do not apply any lubricant, joint compound or tape to cylinder valves, fittings or regulator threads.
    - Keep dirt, rust, oil or grease away from all cylinders or fittings.
    - Do not drop or bang cylinders against each other. Move cylinders using a hand truck or cart designed for the purpose.
    - Avoid direct skin contact with gas escaping from a cylinder.
  - For refrigerated liquefied gases,
    - wear cold insulating gloves and either face shield or eye protection.
    - never wear watches, rings or bracelets because they can freeze to exposed skin if splashed by a cold gas.
    - ensure the cryogen dewar can withstand extremely low temperatures. Cool the receiving container prior to transfer.
  - Maintenance personnel must be aware of the possible hazards and any special procedures and precautions before they begin to work.
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## How can products with the gas cylinder pictogram be stored safely?

- Protect from sunlight. Store in a well-ventilated place
- Store away from incompatible materials and ignition sources.
- Follow any special instructions specified on the SDS (e.g., maximum storage quantities, temperature requirements, and separation distances).
- Consider the use of leak detection and alarm equipment.
- Keep away from exits. Post warning signs.

- Store gas cylinders in the upright position and securely fastened in place with a cylinder valve protection cap in place.
  - Avoid storing large quantities if possible.
  - Do not keep cylinders longer than the supplier recommends.
  - It is good practice to label the container with the date received, date opened and disposal date. Use a first-in, first-out inventory system.
  - Properly and promptly dispose of “empty” or unlabelled cylinders.
  - Follow by-laws and regulations such as Fire and Building Codes and health and safety regulations that apply to the workplace in your jurisdiction.
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## 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.
  - Ensure that appropriate fire extinguishers are available. Be aware of at least two different exit paths in the event of fire.
  - Ensure that an [eyewash and emergency shower](#) are readily available in the immediate work area. These devices must be tested regularly.
  - Immediately report leaks to your supervisor, warn people in the area, and move to a safe location, if necessary.
  - Know the appropriate first-aid measures before an incident occurs:
    - For contact with refrigerated liquefied gases, thaw frosted parts with lukewarm water. Do not rub the affected area. Get immediate medical advice or attention.
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Fact sheet first published: 2017-12-12

Fact sheet last revised: 2024-10-10

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