Compressed Gases Safety Policy

Gases kept compressed in storage cylinders are commonly used at many workplaces. Damage to the cylinder valve can cause a rapid release of the gas and propel the heavy metal cylinder like a rocket. Other compressed gases hazards include:

- Flammable gases like acetylene, propane and hydrogen may burn or explode under certain conditions;
- Some compressed gases are toxic and can cause serious health damage;
- Corrosive gases can burn the skin, eyes or lungs and eat away at metals; and
- Inert gases like helium, argon and nitrogen can reduce oxygen levels if they leak into the atmosphere resulting in asphyxiation.

Here’s a template for a Policy you can adapt to prevent these hazards and ensure compliance with OHS compressed gas requirements.

1. **PURPOSE**

ABC Company operations may involve the use of compressed gases stored in cylinders that have physical properties making them hazardous to handle, including pressure, low flash points for flammable gases, low boiling points and lack of visual and/or odour making them hard to detect. The purpose of this Policy is to ensure the safe handling and storage of compressed gas cylinders in accordance with [*province*] *Occupational Health*

and Safety Regulations ("OHS Regulations"), the [*province*] Fire Code, as well as other applicable requirements and standards from CSA, NFPA or CGA.

2. **DEFINITIONS**

For purposes of this Policy:

- **"Compressed gas"** means a substance that is a gas at normal room temperature and pressure and is contained under pressure, usually in a cylinder;
- **"Compressed gas cylinder"** means a heavy-walled metal cylinder designed, produced and tested for use with compressed gases, together with its valve cap, regulator and other associated safety equipment;
- **"WHMIS"** means the Workplace Hazardous Materials Information System.

3. **WHMIS IDENTIFICATION & EDUCATION**

Many compressed gases are considered "hazardous products" under WHMIS. That means workers who work with or near these products have the right to know about their hazards and how to guard against them. Accordingly, as required by the ABC Company WHMIS Policy:

- All affected workers will be notified about their exposure and the hazards it poses;
- Compressed gas cylinders will have proper WHMIS supplier or workplace labels;
- An up-to-date Safety Data Sheets (SDS) will be made readily available at the worksite to workers; and
- All exposed workers will receive WHMIS training in how to read WHMIS labels and SDSs.

4. **SAFE DESIGN OF COMPRESSED GAS CYLINDERS**

When ABC Company receives a compressed gas cylinder from a manufacturer, supplier or distributor, before it can be placed into use a qualified supervisor must first:

- Read the cylinder label to confirm the gas received is the gas purchased and verify the Transport Canada/Department of Transportation (TC/DOT) cylinder markings to confirm the pressures contained in the cylinder;
- Ensure that there is a proper SDS for the cylinder's contents;
- Ensure the name of the gas and rated pressure are clearly marked on the cylinder;
- Inspect the cylinder for any obvious damage such as cuts, gouges, burn marks, corrosion and dents;
- Ensure that any valve, regulator or fitting connected is a standard fitting, designed and manufactured for the type of cylinder and compressed gas for which it's used, isn't bent or damaged and includes provisions for flashback arresters where necessary;

If any of the above requirements isn't met, the cylinder MAY NOT BE USED and must be returned to the manufacturer, supplier or distributor for a satisfactory replacement.

5. **HANDLING OF COMPRESSED GAS CYLINDERS**

Compressed gas cylinders may be handled only by those familiar with the hazards with training in the proper handling techniques. Workers using compressed gas cylinders must ensure that:

- Compressed gas equipment designed for use with a specific gas is used only with that gas;
- The cylinder valve is shut off and pressure in the hose is released when the cylinder is empty or not in use;
- Sparks, flames or other sources of ignition aren't allowed to contact the cylinders, regulators or hoses of a compressed or liquefied gas system.

Workers must:

- Not insert or remove a compressed gas cylinder from a

storage compartment by holding the valve or valve protection cap;

- Put on and secure to the valve outlet the valve protection cap or plug provided by the manufacturer of a compressed gas cylinder if the cylinder isn’t secured and not connected to dispensing equipment;
- Not stand directly in front of a regulator attached to a compressed gas cylinder when the cylinder valve is being opened;
- Not use a hammer, wrench or other tool to open a cylinder valve, unless that’s the method specified by the manufacturer’s instructions;
- Not use compressed gases or air to clean clothing or working surfaces;
- Not roll a cylinder on its side, subject it to rough handling, or move it with a lifting magnet; and
- Use appropriate personal protective equipment when handling or working near a compressed gas cylinder.

6. **STORAGE OF COMPRESSED GAS CYLINDERS**

Compressed gas cylinders must be marked to indicate their rated pressure and type of gas they contain and stored in accordance with manufacturers’ instructions and the following requirements:

6.1 Storage Areas

Compressed gas cylinders must be stored in well-ventilated storage areas that are away from sources of heat and direct sunlight and where the temperature does not exceed 52°C. Compressed gas cylinders may not be stored:

- In elevators, stairways, exits or exit routes;
- Closer than 1 metre from exit doors;
- In damp areas, near salt, corrosive chemicals, fumes, heat or exposed to the weather without roof housing;
- Under external staircases, emergency stairs, ramps or

other access points; or
- Longer than one year without use.

6.2 Segregation of Incompatible Gases

Incompatible compressed gas cylinders must be segregated in accordance with the following general principles and Table 1 below:

- Flammable gases must be stored away from oxidizer gases;
- Inert gases may be stored with flammable or oxidizer gases;
- Propane must be located at least 1 metre away of any flammable compressed gas and at least 6 metres away from containers of flammable, combustible, oxidizing, corrosive or toxic liquids

Table 1: Segregation of Incompatible Gases

Classes	Flammable	Inert	Toxic	Corrosive	Oxidizer
Flammable		Compatible	Incompatible–Don't store together	Incompatible–Don't store together	Incompatible–Don't store together
Inert	Compatible		Compatible	Compatible	Compatible
Toxic	Incompatible–don't store together	Compatible		Incompatible–store 1m away	Incompatible–store 1m away
Corrosive	Incompatible–don't store together	Compatible	Incompatible–store 1m away		Incompatible–store 1m away
Oxidizer	Incompatible–don't store together	Compatible	Incompatible–store 1m away	Incompatible–store 1m away	

6.3 Storage Position

Compressed gas cylinder must be secured to a wall or rack, stored in an upright position and protected from falling objects, with the valve closed and all protective devices in place.

6.4 Storage of Empty Cylinders

Empty compressed gas cylinders must be clearly marked "empty" and stored in a separate location designed for such use.

7. SIGNAGE

Storage areas for compressed gas containers must be marked with prominently posted notices listing the name of the gases stored and signs banning smoking.

8. **EMERGENCY RESPONSE**

ABC Company will develop and implement a procedure for responding to leaks or releases of propane, as well as fires and explosions.

9. **SAFETY TRAINING**

ABC Company will ensure that all personnel exposed to compressed gas hazards receive the necessary information, instruction, and training to work safely, including but not limited to:

- The hazards posed by each compressed gas to which they are exposed;
- The procedures and methods used to ensure the safe use, handling, and storage of each compressed gas;
- The proper use of required PPE and respiratory protective equipment;
- Emergency response procedures to follow in the event of explosions, fires, leaks and other incidents.