Saskatchewan Health Authority	**Policy** Saskatoon & Area - Occupational Health & Safety **Number:** 55-004 **Title:** Other Hazards: Compressed Gas Cylinders **Saskatchewan Employment Act:** **OHS Regulation:** 371, 372 **Date:** January 1, 2017 **Date Revised/Reaffirmed:** May 28, 2018

Preamble

Improper use, storage and handling of compressed gas cylinders can lead to damage of the cylinder and/or the regulator causing a sudden release of highly pressurized gas. A damaged cylinder can become an uncontrolled object that moves at high speed and has enough force to cause severe injury and damage. An uncontrolled cylinder has the potential to cause death or severe damage to anyone or anything it contacts within its path.

Purpose

To ensure the safe handling, use and transportation of compressed gas cylinders

General Guidelines for Compressed Gas Cylinders

Personal Protective Equipment

- The following personal protective equipment is required when transporting gas cylinders:
  - Safety glasses
  - Steel-toed safety shoes (users who transport frequently)
- This section on PPE does not apply to small gas cylinder s for patient use which are transported for short distances in a dept. or nursing unit
- General purpose work gloves are also recommended to protect against handling injuries

Transport and Handling

- Compressed gas cylinders should only be transported by those familiar with hazards and who have received prior hands-on training
- Visually inspect cylinders for any indication of damage or leakage. If a cylinder is leaking, close the valve, place a warning tag and report to your supervisor. Do not transport until repaired.
- All cylinders should be properly marked to identify the contents. Check label to ensure it corresponds to the expected gas
- Only move cylinders using a suitable cart designed for cylinder transport and secure the cylinder in an upright position
- Every reasonable precaution must be taken to ensure no spark, flame or other sources of ignition are present
- Transport cylinders with the regulator removed, valve closed and safety cap in place
- Never use cylinder without a safe, proper fitting regulator valve

- Oxygen is never to be used as a substitute for compressed air
    (a) in pneumatic tools;
    (b) to create pressure;
    (c) for ventilating purposes; or
    (d) to blow out a pipeline.
- Keep all valves closed when the cylinder is not in use, even if the tank is empty
- If a tank is empty, place in the empty area of the storage room or mark as empty with an appropriate marking
- If you need to move a cylinder between floors, travel with it in the elevator to ensure it is properly secured. Do not leave an unaccompanied cylinder in the elevator or in a hallway. Ensure no one else is in the elevator during transportation.
- Do not lift cylinders by the cap with magnets, chains or slings
- Oxygen cylinders must be properly secured at all times during storage, transport and use. Cylinders that are 5.0L or less may be stored and transported horizontally in holders located on bed or stretcher
- Compressed gas cylinders should not be dragged, rolled, carried or left unsecured in any manner

STORAGE

- Storage areas for cylinders must be clearly labelled
- Cylinders should be stored in a dry, well-ventilated area away from extreme temperatures and combustible materials
- Cylinders or equipment for handling oxygen shall be stored in a clean, ventilated area free of grease, oil, or other contaminants
- Cylinders should be stored away from electrical circuits and ignition sources such as sparks, flames or hot surfaces
- Store in an upright position and secure to prevent falling or rolling
- Larger cylinders must be strapped or chained to a secure object. At minimum, ensure the cylinder is secured between its mid-point and shoulder
- Smaller cylinders must be secured as above, or in an appropriate rack
- The valve on a compressed gas cylinder must be kept closed when the cylinder is not in use
- A cylinder not in use must have the regulator removed and the safety valve cap in place
- Store only the amount of compressed gas required for the specific application
- An empty cylinder must be identified as being empty and must be stored separately from other compressed gas cylinders and capped
- Follow the gas supplier's recommendations for storage and use temperatures. To prevent excessive pressure buildup, never expose cylinders to temperatures above 52°C (125°F). Do not subject them to temperatures below -29°C (-20°F), unless they are designed for this. Cylinders that become frozen to a surface can be freed by using warm water (less than 52°C). Never apply direct heat to a cylinder. This should only be done by trained workers.
- Store cylinders away from areas of high traffic and emergency exits

Regulators and Connections

- Never use a compressed gas cylinder without a regulator that will safely reduce the cylinder pressure
- Never use a valve that has been modified from another gas
- Visually inspect the regulator for damage. Ensure the regulator is approved for the specific gas and it is rated and marked for the maximum pressure rating of the cylinder.
- Use an appropriate wrench when fitting regulators and do not force cylinder valve connections that do not readily fit. Do not apply oil/grease/WD40 or Teflon tape on gas connections to cylinder.

- Slowly open the cylinder valve to avoid damaging the regulator. Do not stand directly in front of a regulator attached to a compressed gas cylinder when the valve is being opened.

Emergency Procedures

- It is extremely important to have the safety cap in place during transport. A damaged or severed valve can cause the cylinder to become a missile.
- If a cylinder starts to fall, do not attempt to catch it. Stand back and let the cylinder fall to the ground to avoid a physical injury. With the safety cap in place, cylinders can generally withstand a fall and not result in damage to the valve or cylinder body.
- If a cylinder has a minor leak, close the valve, place a warning tag and report to your supervisor
- In the event of a large uncontrolled gas release, call a code brown, evacuate the area, and notify your supervisor/manager. Follow code brown and code green procedures.

Roles and Responsibilities

Employer must ensure:

- That written procedures are developed and implemented for the safe use and maintenance of all compressed gas cylinder systems
- That all procedures that have developed are available for reference by workers
- Workers do not use the compressed gas cylinder system before procedures are in place
- That workers are trained and implement the procedures

Manager/Supervisor must ensure:

- That roles and responsibilities of all workers are being met, as well as applicable legislation and/or standards
- That workers are trained in the safe handling, transportation and storage of compressed gas cylinders
- That all workers are informed about the risks and measures in place to minimize the risks when handling compressed gas cylinders
- That workers follow the written safe work procedures

Worker must ensure:

- That they have the appropriate training before using any compressed gas cylinder system
- That they refer to all procedures before using any compressed gas cylinder system
- That they follow the safe work procedures for handling gas cylinders
- They report to their supervisor and the Safety Alert System/Incident Report Line any incidents or near misses involving compressed gas cylinders

Orientation & Training

- Training in safe handling, transportation and storage of compressed gas cylinders

Non-Compliance/Breach:

Non-compliance with this policy will result in a review of the incident. A review for non-compliance may result in disciplinary action, up to and including termination of employment or privileges; fines and /or prosecution of individuals under the Saskatchewan Employment Act and OHS Regulations.

Review Dates:
January 1, 2017
May 28, 2018