

The following general practices are recommended for the safe handling and storage of high pressure gaseous and liquefied-compressed gases in transportable containers.

Additional precautions may be necessary depending upon the category to which the gas belongs (corrosive, toxic, flammable, pyrophoric, oxidant, radioactive or inert), the individual properties of the gas, and the process in which it is used.

GENERAL

- Only trained persons should handle compressed gases.
- Observe all regulations and local requirements regarding the storage of containers.
- Do not remove or deface labels provided by the supplier for identification of the container contents.
- Ascertain the identity of the gas before using it.
- Know and understand the properties and hazards associated with each gas before using it.
- Establish and implement plans to cover any emergency situations that might arise. When doubt exists as to the correct handling procedure for a particular gas contact the supplier.

HANDLING AND USE

- Wear stout gloves. Never lift a container by the cap or guard unless the supplier states it is designed for that purpose.
- Use a trolley or other suitable device or technique for transporting heavy containers, even for a short distance.
- Leave valve protection caps (where provided) in place until the container has been secured against a wall or bench or placed in a stand and is ready for use. Never remove valve guards or cages which permit access to the container valve. This type of valve protection is intended to be permanently attached.
- Where necessary wear suitable eye and face protection. The choice between safety glasses, chemical goggles, or full face shield will depend on the pressure and nature of the gas being used.
- Where necessary for toxic gases see that self-contained positive pressure breathing apparatus or a full face air line respirator is available in the vicinity of the working area. Check for gas leaks using a suitable method. Flammable and toxic gas monitors are available. Where a gas is toxic check special procedures specified by supplier.
- Ascertain that an adequate supply of water is available for first aid, fire fighting, or dilution of corrosive material in the event of leakage.
- Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with a lower pressure rating than that of the container. Before connecting the container for use ensure that back feed from the system into the container is prevented.
- Ascertain that all electrical systems in the area are suitable for service with each gas. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 45°C.
- Never re-compress a gas or a gas mixture from a container without consulting the supplier.
- Never attempt to transfer gases from one container to another.
- Do not attempt to increase liquid draw-off rate by pressurising the container without first checking with the supplier
- Do not use containers as rollers or supports, or for any other purpose than to contain the gas as supplied.

- Never permit oil, grease or other readily combustible substances to come into contact with valves of containers containing oxygen or other oxidants.
- Keep container valve outlets clean and free from contaminants, particularly oil and water.
- Do not subject containers to abnormal mechanical shocks which may cause damage to their valves or safety devices. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier.
- Close the container valve whenever gas is not required, even if a container is still connected to equipment.
- Replace outlet caps or plugs and container caps (where provided) as soon as container is disconnected from equipment.

STORAGE

- Containers should be stored in a well ventilated area. Some gases will require a purpose built area.
- Store containers in a location free from fire risk and away from sources of heat and ignition.
- Designation as a 'No Smoking Area' is recommended and is essential if flammable, toxic or oxidising gases are stored.
- The storage area should be kept clear and access should be restricted to authorised persons only. The area should be clearly marked as a store and appropriate hazard warning signs displayed (flammable, toxic, radioactive, etc.). Containers in storage should be properly secured to prevent toppling or rolling. Vertical storage is recommended where the container is designed for this. Container valves should be tightly closed and, where appropriate, valve outlets should be capped or plugged. Container valve protection guard or cap should be in place and properly secured. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Store full and empty containers separately and arrange full containers so that the oldest stock is used first.
- Gas containers should be segregated in the storage area according to the various categories (toxic, flammable, oxidant etc.). The amounts of flammable or toxic gases in storage should be kept to a minimum. Flammable gases should be stored away from other combustible materials.
- Containers held in storage should be periodically checked for general condition and leakage.