

SOP - Gas Cylinders - Storage, Transport & Handling

DO NOT use this plant* unless you have been inducted in its safe use and operation by an Authorised Experienced Operator

This SOP may not cover all possible hazards and risks and should be referred to as a control measure in the risk assessment process. Additional training may be required for high risk plant. Site and task may change required PPE.

PERSONAL PROTECTIVE EQUIPMENT



Eye protection must be worn



Hand protection must be worn



Hearing protection must be worn



Foot protection must be worn



Protective body clothing must be worn



High visibility clothing must be worn

POTENTIAL HAZARDS AND RISKS

- Exposure to High Pressure Fluid**
Injury from exposure to high pressure gas
- Manual Task Injury**
Manual task injury from incorrect manual handling techniques

- Explosion**
Explosion of gases, vapours or liquids
- Other**
Exposure to toxic fumes

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Complete site specific risk assessment
- ✓ Always check the identity of the gas in the cylinder before use. Refer to the cylinder label and safety data sheet if required
- ✓ Check that the pressure regulator is not defective. Replace immediately if faulty
- ✓ Check the hose/fittings for signs of deterioration (splits, cracks, fraying) Replace immediately if damaged
- ✓ Cylinder valves must always be closed and all equipment detached when the cylinder is moved
- ✓ Regularly check for leaks using soapy water. Leakage will be revealed by either hissing or, in the case of fuel gases, by an odour. **DO NOT TEST FOR LEAKS WITH A NAKED FLAME**

OPERATING PROCEDURES

- ✓ Cylinders **MUST** always be secured
- ✓ Keep all cylinders away from heat and ignition sources
- ✓ Ensure the cylinder is kept upright and secure during storage, handling, transportation and installation
- ✓ A gas cylinder shall only be used for the storage and transport of gases and substances for which it is designed

SAFE STORAGE OF CYLINDERS

- ✓ Full or empty compressed gas cylinders are to be stored in an upright position in a designated dangerous goods store, with adequate ventilation
- ✓ Keep cylinders away from artificial heat sources (e.g. intense sunlight, flames or heaters), combustible materials or flammable liquids
- ✓ A gas cylinder should always be presumed to contain pressure, even when gas is not released even when the valve is opened

- ✓ Different types of gas must be stored separately in accordance with regulation (AS4332)
- ✓ Outdoor minor stores of Class 2 gases in cylinders shall be separated from other dangerous goods stores by a minimum distance of 3 m. They shall be located not less than 1 m from any door, window, air vent or duct
- ✓ Particular care shall be taken to prevent contamination of any cylinder which contains oxygen, nitrous oxide, chlorine, any other oxidizing agent or any gas for human respiration
- ✓ When storing bulk or manifest amounts of gases reference should be made to SCC Hazardous Chemicals Procedure for legal requirements such as placarding and notification to WorkCover
- ✓ The entry to stores must clearly show signage in accordance with WHS regulations. This includes placarding and labelling

HANDLING OF CYLINDERS

- ✓ Use a trolley to transport cylinders. Never allow cylinders to be laid down, fall down, or rolled along the ground
- ✓ Cylinders must always be secured to a trolley when being transported and to the wall or bench when being used
- ✓ Familiarise yourself with, and observe, appropriate safe lifting techniques/postures prior to manually handling heavy or large gas cylinders. Assess the load weight and dimensions before attempting any lift.

TRANSPORT OF GAS CYLINDERS

- ✓ Cylinder transportation shall be in compliance with Regulations associated with
 - Australian Code for the Transport of Dangerous Goods by Road and Rail
 - Or

- Any other applicable Regulation that may be issued by the Department of Environment and Climate change and Water
- ✓ Examples of what these Regulations may require (depending on the class and quantity of the cylinders)
 - Certified Dangerous Goods driver
 - Transport vehicle is to be fitted with
 - a) Fire extinguishers (portable)
 - b) Safety signage (placarding)
 - c) Emergency Procedure Guide
 - d) Respiratory equipment
 - e) Personal protective clothing
 - f) Checking for leakage when in storage
 - g) First aid kit
 - h) Torches (intrinsic where necessary)
 - i) Emergency contact telephone numbers
- ✓ When transporting the cylinder inside the vehicle (such as a van), keep the cylinder in a purpose built compartment or cabinet that provides adequate drainage or ventilation of any leaking gas to the outside of the vehicle. Tool boxes and other designated storage containers storing gas cylinders kept on utes and trucks, should also have similar ventilation or drainage for potential gas leaks
- ✓ Even if the gas cylinders are not of a type or quantity that requires adherence to transport regulations, the cylinders should be properly secured in cradles designed for transportation in vehicles and manual handling purposes
- ✓ Leaks can occur if the valves used to regulate the flow of gas are not properly turned off or are faulty. The shut-off valve for each cylinder shall be closed during transportation and any valve safety caps properly secured
- ✓ Ensure there is a plastic screw plug in the cylinder outlet when not in use to prevent foreign objects/insects entering the valve
- ✓ Firmly secure the cylinders to the vehicle and protected from other objects striking against them during transport
- ✓ Remove the cylinders from the vehicle immediately upon arrival at the destination

DO NOT

- ✗ Do not use if plant is faulty. Attach a DO NOT OPERATE tag and report fault to your supervisor
- ✗ Do not open the cylinder valve unless the cylinder is connected to a regulator or to equipment
- ✗ Do not allow oil or grease to come in contact with the valves or cylinders used for the storage and transport of any gas
- ✗ Do not use force when opening or closing valves. Only use reasonable force. OPEN by turning the hand wheel or cylinder valve key anticlockwise. CLOSE by turning the hand wheel or cylinder valve key clockwise
- ✗ Do not damage the threaded portions by connecting an incorrect regulator or fitting

*Plant in this SOP refers to any machinery, equipment, appliance, container, implement and tool.