

GAS CYLINDER SAFETY GUIDELINES

Purchasing:

- Purchase smallest quantities whenever possible
- When receiving gas cylinders:
 - Ensure that they are properly labelled
 - Visually inspect for damage
 - Ensure that the gas cylinders are received with valve caps

Storage:

- Gas cylinders must be stored in an upright position and chained to the wall. Stored in a separate well ventilated area preferably outside the building and must be protected from weather.
- Gas cylinders must not be stored near exits and passages.
- Empty cylinders must be marked /tagged "EMPTY" and stored separately.
- Only gas cylinders for immediate use must be stored inside the laboratory.
- All cylinders in the laboratories must be clearly labelled.
- Gas cylinders must be stored away from corrosive chemicals, fumes, heat sources including electric points
- Flammable gas cylinders must be separated from oxygen cylinders by a distance of minimum 6meter.
- Place the valve cap on the cylinder whenever the regulator is removed.
- Store toxic/pyrophoric gases in gas cabinets

Transporting:

- Before moving gas cylinder
 - Valve must be closed.
 - Regulator must be removed.
 - Cylinder must be capped.
 - Secure the cylinder in a cylinder cart (with chain)

Usage:

- Refer the Material Safety Data Sheet(MSDS) for the gas before usage, to know about the hazards and precautions to be taken.
- Perform a visual inspection before each use to detect any damage, cracks, corrosion, or other defects.
- Use safety glasses while working with gas cylinders.
- Never apply excessive force when trying to open valves.
- Never allow flames or concentrated heat sources to come in contact with a gas cylinder.
- Never allow a gas cylinder to become part of an electrical circuit.
- Always use the correct regulator for the cylinder. After the regulator is attached, the cylinder valve must be opened just enough to indicate pressure on the regulator gauge and all connections must be checked with a compatible solution for leaks (e.g., soap and water). Do not use flames for detecting leaks.
- Close cylinder valve whenever work is finished and cylinder is empty
- Keep piping, regulators and other apparatuses gas tight to prevent gas leaks.
- Greasy and oily materials must never be used on oxygen cylinders or fittings as it can cause explosion. Gauges and regulators for oxygen shall bear the warning "OXYGEN - USE NO OIL".Regulators for oxygen service must never be used with flammable gases.
- Use appropriate personal protective equipment, including insulated gloves, lab coat and eye protection (goggles and a face shield) during any transfer of cryogenic liquid. (Eg: liquid nitrogen, liquid oxygen, hydrogen, helium, and liquid neon).
- Flammable gases (acetylene, hydrogen, methane, propane, carbon monoxide, and isobutene), except for protected fuel gases, must not be used near ignition sources. (Ignition sources include open flames and sparks, sources of heat, oxidizing agents and ungrounded or non-intrinsically safe electrical or electronic equipment).

Emergency measures:

- The building must be evacuated immediately if a gas (flammable/pyrophoric/toxic/corrosive) leak becomes uncontrollable. Call the experts or supplier immediately.
- Do NOT attempt to repair a leak from the base of the valve.
- Personal protective equipment must be used while dealing with toxic/corrosive gas leaks
- Portable fire extinguishers (suitable type) must be used in case of minor fire break.
- In case of major fire, Call; 101 or fire station- Sangareddy- 08455 241877 or 99637 48770
- fire station –Patancheru- 08455-242099 or 09581012077