

Safety Information



General Precautions

High pressure cylinders and cryogenic containers require proper care and handling to ensure facility and employee safety. Cylinders should be handled only by persons familiar with proper safety procedures. Material Safety Data Sheets (MSDS) are made available for all of our products and should be reviewed prior to cylinder use.

The following are recommendations to be considered when handling high pressure cylinders and cryogenic liquid.

Storage Precautions

- Cylinders should be stored upright
- Cylinders should be secured from falling
- Storage area should be cool, dry and well ventilated
- Consult Fire department for the local flammable storage regulations.
- Never expose cylinders to temperatures greater than 120°F
- Keep the cylinder cap on at all times when cylinder is not in use.

Gas Cylinder Use

- Always use proper gas pressure regulator devices approved for the product and pressure in the cylinder.
- Never tamper with the valve or safety relief devices on the cylinder.
- Never permit oil, grease or other combustibles to come in contact with any oxidizing gas cylinders
- Always open a cylinder valve slowly
- Always use approved cylinder carts and appropriate personal protection when moving cylinders
- Read cylinders labels carefully before use.

- Be familiar with the hazards specific to the gas by consulting the product MSDS.

Cryogenic Liquids Use

- Cryogenic liquids exist at temperatures of (-297°F) to (-459°F) which can cause extensive tissue damage, therefore extreme caution should be used during use.
- Always use personal protection, such as face shields safety glasses and cryogenic gloves.

- Only use equipment and containers rated for cryogenic use.
- When filling a warm container or inserting an object into cryogenic liquid work slowly to avoid excessive boiling and splashing.
- Never touch cryogenic piping or vessels that do not have insulation unless the proper protective equipment is available. Flesh will stick to metal, plastics and other materials when the materials are at very low temperatures.

Hazards

- **Inert Gas** – Argon, carbon dioxide, helium and nitrogen create a hazard when in confined spaces. These gases will not support life and may cause asphyxiation if they displace the oxygen in the air. Inert gas use should always be in well-ventilated areas to insure a life-supporting atmosphere. Life supporting atmosphere should contain 19% to 23% oxygen. Since inert gases are colorless and odorless they may slip into the atmosphere undetected, therefore the use of monitoring equipment is recommended for enclosed areas.
- **Oxidizer** – Oxygen supports life as well as combustion. If the oxygen concentration rises above 21% by volume a hazard exists for materials to ignite or explode, which under normal conditions would not be a combustible hazard.

- Never substitute air for oxygen
- Never lubricate or repair equipment used for oxygen service
- Only use equipment designed and cleaned for oxygen use
- Keep all organic materials such as oil, grease, asphalt, cloth or wood away from oxygen containers
- Keep cylinder stored in a well-ventilated area away from heat or flames.

- **Poison Gas** – Toxic and poison gases should only be handled by personnel specially trained and aware of potential hazards associated with the product. Proper safety and emergency apparatus should always be readily available for use.

- Always store poisons in a secure area outdoors or in a non combustible separate building or room
- Always use regulators and equipment rated for poison service

- **Corrosive Gas** – Corrosive gas can cause rapid destruction to human tissue and other materials. Proper precautions must be taken to avoid inhalation or contact with eyes and skin. Only personnel specially trained should handle corrosive gas products.

- Only use safety and protective apparatus specifically designed for corrosives
- Always use regulators and equipment rated for corrosive service.
- Keep containers stored in a well-ventilated secure area