Gas Cylinder Hazards

Gas cylinders provide a wide variety of hazards. This includes sudden and explosive decompression, asphyxiation, explosion and reactivity risks, possible chemical toxicity, cryogenic temperatures, and high-pressure gas streams.

General Handling and Operation

• All laboratory workers must be trained in proper handling of compressed gas cylinders and recorded by the PI.

• Cylinders should be kept secured with chains or straps to an immovable object. Never leave a cylinder standing unrestrained.

• If a valve is not working, have it inspected and fixed. Do not attempt to force a valve open or close.

• A cylinder valve protection cap should be in place at all times until the cylinder is secured and connected to a regulator or manifold.

• Do not force connections that do not fit.

• Turn off gas at the cylinder valve, not the regulator.

• Do not heat a cylinder to raise the pressure of the gas (this can defeat the safety mechanisms built in by the supplier).

• Do not tamper with any safety relief devices in the valve or on the cylinder. Report any indications of tampered or damaged safety relief devices for inspection.

• Do not attempt to adapt fittings from one cylinder or regulator to another.

• Only use fittings or hoses compatible with the gas in the cylinder.

• Do not transfer gases from one cylinder to another.

• Do not store cylinders in isles or doorways as they may block egress in the event of an emergency.

• Do not lubricate any part of the valve, cylinder, or attached equipment.

• For toxic or irritating gases, the cylinder valve should only be opened while the cylinder is in a working fume hood.

• Label all empty cylinders with tags so that everyone will know their status. Handle empty cylinders as carefully as full ones.

Moving Cylinders

• Use proper PPE when transferring or moving cylinders.

• Make sure cylinders are in good condition before transferring.

• Close any valves, remove the regulator, and attach the cylinder valve protection cap before moving any cylinder.

• A cylinder should only be moved when securely strapped or chained to a wheeled cart.

• Do not drag, slide or roll a cylinder. The sidewalls of the cylinder are the thinnest parts and aren't designed to support any weight.

• Do not drop cylinders or strike them against each other or against other surfaces violently.

• Do not use the valve cover to lift cylinders; they could be damaged and become unattached.

Pressure Regulators for Cylinders

• Use the appropriate regulator for the type of tank and gas being used.

• Do not use any oil, grease, mercury or soapy water on regulator valve.

• Check that the regulator is free of foreign objects.

• While a cylinder is in storage, the regulator should be removed.