

Revision ----	Document Code WI- ML-	Standard Operating Procedure (SOP) for Gas Cylinder Handling and Use (CO ₂ , O ₂ , etc.)	 دانشگاه گلبرگ و خدایا بھدائے دورانی پاکستان والسلام و برکات
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Safety and Handling Protocol: Compressed Gas Cylinders (CO₂, Oxygen, etc.)

1. Purpose

To establish standard safety procedures for the handling, storage, and operation of compressed gas cylinders (including CO₂, Oxygen, and others) to ensure laboratory safety.

2. Scope of Application

These guidelines apply to all compressed gases. Special attention is required for Carbon Dioxide (CO₂), which is colorless, nearly odorless, and poses significant health risks at high concentrations.

3. Responsibility

Laboratory experts are responsible for the strict implementation of these safety procedures.

4. Operational Procedures

- **Handling & Transport:**
- **Storage:** Store and use cylinders only in well-ventilated areas.
- **Security:** Always secure cylinders in an upright position using chains or sturdy straps to prevent tipping, both during storage and operation.
- **Transportation:** Use a dedicated cylinder hand truck for transport. Do not roll, drag, or throw cylinders.
- **Operating Valves:**
- Open cylinder valves slowly to prevent rapid pressure surges.
- Always close the valve when the cylinder is not in use, even if it appears empty.
- Return all cylinders with their valves securely closed.
- Never force a valve open. If a valve is damaged or stuck, clearly label the cylinder and report it to the supervisor.
- **Safety & Prevention:**
- **Fire Safety:** Keep cylinders away from sources of ignition and do not store them in the vicinity of flammable liquids.
- **Leak Detection:** After connecting a cylinder, test all joints and connections for leaks using a commercial leak-detection spray or a mild soapy water solution.
- **CO₂ Specific Measures:** Ensure adequate room ventilation or connect the system directly to an exhaust hood. Installing a CO₂ alarm/monitoring system is strongly recommended.
- **Qualified Personnel:**
- Gas connections must be established only by qualified personnel who have received specific training for the relevant gases and are fully aware of all safety measures.

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