



Safety Instruction

Lecture (Cylinder) Bottle Safety



Lecture Bottle Stand

Lecture Bottles are small compressed gas cylinders, typically 12-18 inches long and 2-3 inches in diameter. These small cylinders are typically used for holding calibration gases or in applications where large quantities of gases are not used.

Lecture Bottle Use

- Inspect the lecture bottle and regulator prior to use; never use bottles or regulators that are damaged or corroded.
- Only use regulators and tubing that are appropriate for the gas. For example, stainless steel regulators and tubing must be required for corrosive gases.
- Lecture bottles must be properly secured and upright during use.
- Lecture bottles containing toxic gases must be used in a fume hood or gas cabinet.

Lecture Bottle Storage

- All corrosive lecture bottles must be stored upright (vertically). Ensure lecture bottles are secured in a way to prevent bottles from falling (such as a lecture bottle holder). There are racks designed for this purpose (resembling and oversized test-tube rack) or they be firmly clamped to a ring stand with a heavy base, in an upright position.
- Non-liquefied/non-corrosive lecture bottles may be stored horizontally in specifically designated racks.
- Do not stack cylinders.
- Do not store cylinders or lecture bottles with the regulator in place. If the regulator fails, the entire contents of the cylinder may be discharged.
- Segregate incompatible gases, such as flammable and oxidizing gases.
- Store poisonous gases in a fume hood or a ventilated gas cabinet.
- Lecture bottles must be properly labeled. Re-label the lecture bottle if the label becomes illegible or falls off.

Proper Storage



Improper Storage



Lecture Bottle Purchase & Disposal

- Unlike other gas cylinders, lecture bottles are not typically refillable and are purchased outright by the laboratory. Most gas manufacturers do not take back lecture bottles. OSU EH&S will pick up lecture bottle cylinders through the hazardous waste disposal program on a per request basis.
- Label lecture bottles that are not completely empty with a hazardous waste tag and approximate % of material remaining in the cylinder prior to submitting a hazardous waste request.
- All partially full cylinders must have a proper valve cap prior to pick-up by EH&S.
- If the cylinder is completely empty (no material will escape if the valve is opened), write "empty" on the label and/or on the cylinder.

Anhydrous Hydrogen Fluoride

- Anhydrous hydrogen fluoride reacts over time with the iron in the steel to form iron fluoride and hydrogen. The hydrogen pressure can build up to the point where it ruptures the cylinder.
- Anhydrous hydrogen fluoride lecture bottles must be disposed of within 2 years of purchase.

Emergency Procedures

- Contact EHS immediately if there is a leak involving a hazardous lecture bottle. Evacuate the lab if the lecture bottle is not in a fume hood or gas cabinet.

Contact EHS:

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