Oxidizing Gases

Oxidizing gases are gases that can contribute to combustion by acting as an oxygen source or those containing oxygen at higher than atmospheric concentrations (i.e., above 23-25 percent). These gases can react rapidly and violently with combustible materials or flammable vapors.

Examples of oxidizing gases include chlorine, nitrous oxide, oxygen, and compressed air.

Personal Protective Equipment & Personnel Monitoring

Lab Coat

Flame resistant lab coat.

Gloves

For proper glove selection, review the chemical safety data sheet and consult glove manufacturer recommendations with your PI or supervisor.

Eye Protection

ANSI Z87.1-compliant safety glasses or safety goggles.

Labeling & Storage

Store oxidizing gases away from combustible materials, flammable gases, flammable and combustible liquids, finely-divided metals, and other easily oxidized substances such as hydrides, sulfur and sulfur compounds, silicon, and ammonia and amine compounds. Fire code requires that cylinders of oxidizing gases in storage be separated from fuel-gas cylinders or combustible materials by a minimum distance of 20 feet unless separated by a noncombustible barrier at least five feet high and with a fire resistance rating of least one-half hour.

Compressed gas cylinders should be individually anchored to a stable structure such as a wall with a chain or strap approximately ½ to ¾ of the way up the cylinder. Additionally, cylinders should be tagged as full, in-use, or empty. Untagged cylinders are assumed to be full. Cylinders not in use should have regulators removed and safety caps in place.

Engineering Controls, Equipment & Materials

Fume Hood

Typically a fume hood is not necessary for the handling of these materials. If you have a question about a lab-specific protocol or procedure involving the use of oxidizing gases and proper engineering controls, please contact the Office of Research Safety at 706-542-5288.

First Aid & Emergencies

Fire

Do not attempt to extinguish a leaking gas fire unless the leak can be stopped. Use a dry chemical or CO2 extinguisher. If the fire is beyond the capabilities of

	the lab, immediately evacuate the area and contact 911. Stay near the scene to answer questions once first responders arrive.
Skin or Eye Contact	Remove contaminated clothing and accessories; flush affected area with water. If symptoms persist, get medical attention.
Inhalation	Move person into fresh air. If symptoms persist, get medical attention.