

Safety Considerations for Oxygen Supply and Distribution Systems

A one-day on-site training course for users of gaseous and liquid oxygen

Did you know that...

- OSHA considers atmospheres containing less than 19.5 percent oxygen as potential asphyxiation hazards?
- atmospheres with more than 23 percent oxygen are potential combustion hazards?
- metals such as stainless steel and aluminum will burn in some oxygen-enriched environments?
- liquid and cold gaseous oxygen can make some metals and polymers brittle—causing them to fail?
- incorrectly vaporizing oxygen can exceed system design pressure and cause equipment to rupture?

Learn what you need to know about handling oxygen safely—before a fire or explosion cripples your facility.

From reducing emissions in steel manufacturing to increasing efficiency in wastewater treatment to enhancing combustion for glassmaking, oxygen is a valuable industrial tool. It is used to bleach paper pulp, to produce chemicals and chemical intermediates and to support life in medical applications. But for all its benefits, special care must be taken with oxygen and oxygen-containing systems to reduce the risk of fire, explosion—even death.

Take a proactive approach.

Most oxygen-related incidents can be prevented through training and awareness. We encourage you to educate your technicians, maintenance staff, researchers and other workers on the hazards associated with oxygen system design, installation and use—before an accident occurs. Air Products' in-depth oxygen safety training program is designed to convey information that will help you reduce the risks of injury, damage to equipment and production downtime that can result from an oxygen-related accident.

Topics include:

- Oxygen properties and associated hazards
- Liquid oxygen expansion ratios
- Safety considerations in designing oxygen systems
- Identifying sources of contamination and ignition
- Cleaning methods for oxygen service, including aqueous cleaning, solvent cleaning and sandblasting
- Critical system inspection and maintenance methods
- Key recommissioning activities

Who should attend:

- Design and consulting engineers
- Operations and maintenance personnel
- Plant and corporate safety staff
- Laboratory and R&D technicians
- Supervisors
- Emergency response teams

Let us bring our interactive safety training to your site.

Led by our oxygen safety experts, our intensive one-day training program incorporates discussion, video and awareness checks to engage participants and reinforce key concepts. We review important highlights of oxygen-related CGA and OSHA guidelines. Furthermore, we provide practical advice based on our many decades of successfully operating oxygen plants and applying oxygen in our customers' facilities. Each attendee receives a Participant's Guide, which includes course material, awareness checks, oxygen MSDS, Air Products' oxygen-related Safetygrams.



Your operation can benefit from our more than 60 years of experience and our unparalleled commitment to safety.

At Air Products, nothing is more important than safety, and we have an unsurpassed record in handling oxygen and other gases. Our frequency of recordable injuries and our lost-time injury frequency rates are consistently far better than average for large chemical companies. For two consecutive years, we have earned the top position as the safest among large-scale chemical manufacturers in the United States, based on the American Chemistry Council's Responsible Care® performance measurement data. We manufacture and distribute our products with the utmost consideration for the safety of our employees, our

customers' employees and the people in the communities in which we operate. In keeping with this mission, we take a leadership role in encouraging the safe use of oxygen to minimize the possibility of accidents while allowing our customers to reap the full benefits of oxygen usage.

Let us share our safety training philosophy with you.

Flexible scheduling can be arranged to meet your operations and staffing needs. To learn more about our program and arrange an oxygen safety training program at your site, call 1-800-654-4567 and ask for program code #3. We believe there is no substitute for using interactive education to best focus on oxygen safety concerns.

About Air Products

For more than 60 years, Air Products has been helping customers to reduce costs, increase productivity and improve product quality through innovative industrial gas supply and applications technology. Air Products will be happy to assist you in meeting your oxygen and other industrial gas needs.

Americas

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Tel 800 654-4567
Fax 800 272-4449

Europe

Air Products PLC
Hersham Place
Molesey Road
Walton-on-Thames
Surrey KT12 4RZ
England
Tel 44 1932 249200
Fax 44 1932 249565

Asia

Air Products Asia, Inc.
9 Temasek Boulevard
#28-01 Suntec Tower 2
Singapore 038989
Tel 65-332-1610
Fax 65-332-1600



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www.airproducts.com