

MATERIAL SAFETY DATA SHEET

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: 1-12% Oxygen / 88-99% Argon

TRADE NAME: Shielding Gas Mixtures (for welding processes)

FORMULA: O₂ / Ar

MANUFACTURER: Air Products and Chemicals, Inc.

7201 Hamilton Boulevard

Allentown, PA 18195-1501

PRODUCT INFORMATION: 1-800-752-1597

MSDS NUMBER: 1208 **REVISION:** 0

REVISION DATE: February 2000 **REVIEW DATE:** February 2000

SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	%	CAS NUMBER	OSHA EXPOSURE LIMITS	ACGIH EXPOSURE LIMITS
Argon	88-99	7440-37-1	None	Simple Asphyxiant
Oxygen	1-12	7782-44-7	None	None

SECTION 3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Oxygen/ Argon Shielding Gas Mix is a nontoxic, odorless, colorless, nonflammable gas packaged in cylinders under high pressure. It can cause rapid suffocation when concentrations are sufficient to reduce oxygen levels below 19.5%. Self-Contained Breathing Apparatus (SCBA) may be required. This mixture is heavier than air and may collect in low areas.

EMERGENCY TELEPHONE NUMBERS

(800) 523-9374 Continental U.S., Canada and Puerto Rico

1. 481-7711 other locations

POTENTIAL HEALTH EFFECTS:

INHALATION: Oxygen/ Argon Shielding Gas Mix is non-toxic, but can reduce the amount of oxygen in the air necessary to support life. Exposure to oxygen-deficient atmospheres (less than 19.5%) may produce dizziness, nausea, vomiting, loss of consciousness, and death. At very low oxygen concentrations (less than 12%) unconsciousness and death may occur without warning.

EYE CONTACT: No adverse effect.

SKIN CONTACT: No adverse effect.

POTENTIAL HEALTH EFFECTS OF REPEATED EXPOSURE:

ROUTE OF ENTRY: Inhalation

TARGET ORGANS: None

SYMPTOMS: None

TOXICOLOGICAL PROPERTIES:

Oxygen/ Argon Shielding Gas Mix is nontoxic. The major hazard of exposure is the exclusion of an adequate supply of oxygen to the body necessary to support life.

CARCINOGENIC POTENTIAL: The components that make up Oxygen/ Argon Shielding Gas Mix are not listed as a carcinogen or potential carcinogen by NPT, IARC, or OSHA Subpart Z.

SECTION 4. FIRST AID

INHALATION: Remove person to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, administer oxygen. Obtain prompt medical attention. Quick removal from contaminated area is most important.

EYE CONTACT: No treatment necessary.

SKIN CONTACT: No treatment necessary.

SECTION 5. FIRE AND EXPLOSION

FLASH POINT: AUTOIGNITION: FLAMMABLE LIMITS:

Not Applicable Nonflammable Nonflammable

EXTINGUISHING MEDIA: Not applicable

HAZARDOUS COMBUSTION PRODUCTS: Not applicable

FIRE FIGHTING PROCEDURES: Cool cylinders with water spray. If possible, without risk, move cylinders away from fire area.

UNUSUAL HAZARDS: Upon exposure to intense heat or flame cylinder will vent rapidly and/or rupture violently. Most cylinders are designed to vent contents when exposed to elevated temperatures. Pressure in a container can build up due to heat and it may rupture if pressure relief devices should fail to function.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected area. Increase ventilation to release area and monitor oxygen level. Use appropriate protective equipment (SCBA). If leak is from cylinder or cylinder valve, contact your supplier. If leak is in user's system, close cylinder valve and vent pressure before attempting repairs.

SECTION 7. STORAGE AND HANDLING

STORAGE: Cylinders should be stored upright in a well-ventilated, secure area, protected from the weather. Storage area temperatures should not exceed 125°F (52°C) and area should be free of combustible materials. Storage should be away from heavily traveled areas and emergency exits. Avoid areas where salt or other corrosive materials are present. Valve protection caps and valve outlet seals should remain on cylinders not connected for use. Separate full from empty cylinders. Avoid excessive inventory and storage time. Use a first-in first-out system. Keep good inventory records.

HANDLING: Do not drag, roll, or slide cylinder. Use a suitable handtruck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times while in use. Use a pressure reducing regulator or separate control valve to safely discharge gas from cylinder. Use a check valve to prevent reverse flow into cylinder. Do not overheat cylinder to increase pressure or discharge rate. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve causing a leak to occur. Use an adjustable strap-wrench to remove over-tight or rusted caps.

Components in this mixture are compatible with all common materials of construction. Pressure requirements should be considered when selecting materials and designing systems.

SPECIAL REQUIREMENTS: Always store and handle compressed gases in accordance with Compressed Gas Association, Inc. (tel. 703-412-0900) pamphlet CGA P-1, *Safe Handling of Compressed Gases in Containers*. Local regulations may require specific equipment for storage or use.

SECTION 8. PERSONAL PROTECTION / EXPOSURE CONTROL

ENGINEERING CONTROLS: Provide good ventilation and/or local exhaust to prevent accumulation of high concentrations of gas. Monitor oxygen levels in work area.

RESPIRATORY PROTECTION:

EMERGENCY: Use SCBA or positive pressure air line with mask and escape pack in areas where oxygen concentration is less than 19.5%. Air purifying respirators will not provide protection.

SKIN PROTECTION: Leather work gloves for handling cylinders.

EYE PROTECTION: Safety glasses.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless gas

	ARGON	OXYGEN
BOILING POINT (1 atm)	-302.2°F	-297.7°F
FREEZING POINT (1 atm)	-308.79°F	-361.93°F
GAS DENSITY @ 70°F	0.103 lb/ft ³	0.083 lb/ft ³
SPECIFIC GRAVITY @ 70°F (air=1) (1 atm)	1.38	1.11
SPECIFIC VOLUME @ 70°F (1 atm)	9.71 ft ³ /lb	12.08 ft ³ /lb
MOLECULAR WEIGHT	39.95	32.00

SECTION 10. REACTIVITY / STABILITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: None

INCOMPATIBILITY: None

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Oxygen/ Argon Shielding Gas Mix is nontoxic. Components in this mixture are simple asphyxiants.

SECTION 12. ECOLOGICAL INFORMATION

Components in this mixture are found in the atmosphere. No adverse ecological effects are expected. This mixture does not contain any Class I or Class II ozone depleting chemicals. Components in this mixture are not listed as a marine pollutant by DOT (49 CFR 171).

SECTION 13. DISPOSAL

UNUSED PRODUCT / EMPTY CONTAINER: Return container and unused product to supplier. Do not attempt to dispose of residual or unused quantities.

DISPOSAL: For emergency disposal, secure the cylinder and slowly discharge gas to the atmosphere in a well ventilated area or outdoors.

SECTION 14. TRANSPORT INFORMATION

DOT HAZARD CLASS: 2.2

DOT SHIPPING LABEL: Nonflammable Gas

DOT SHIPPING NAME: Rare Gases and Oxygen Mixtures, Compressed (argon, oxygen)

IDENTIFICATION NUMBER: UN 1980

DOT PLACARD (When required): Nonflammable Gas

REPORTABLE QUANTITY (RQ): None

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure upright position in a well ventilated truck. Never transport in passenger compartment of a vehicle.

Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of federal law.

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK (NAERG): # 122

SECTION 15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Environmental Protection Agency (EPA)

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 requires notification to the National Response Center of a release of quantities of hazardous substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

CERCLA Reportable Quantity: None

SARA TITLE III: Superfund Amendment and Reauthorization Act of 1986

SECTIONS 302/304: Require emergency planning based on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR 355).

Components in this mixture are not listed as an extremely hazardous substance.

Threshold Planning Quantity (TPQ): None

SECTIONS 311/312: Require submission of material safety data sheets (MSDSs) and chemical inventory reporting with identification of EPA defined hazard classes. The hazard classes for this product are:

IMMEDIATE HEALTH: No PRESSURE: Yes

DELAYED HEALTH: No REACTIVITY: No

FLAMMABLE: No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372.

This mixture does not require reporting under Section 313.

TSCA - TOXIC SUBSTANCE CONTROL ACT: Components in this mixture are listed on the TSCA inventory.

40 CFR Part 68: Risk Management for Chemical Accident Release Prevention. Requires the development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

Components in this mixture are not covered under this regulation.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

29 CFR 1910.119: Process Safety Management of Highly Hazardous Chemicals. Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

Components in this mixture are not listed in Appendix A as highly hazardous chemicals.

STATE REGULATIONS

CALIFORNIA:

Proposition 65: This product does NOT contain any listed substances which the State of California requires warning under this statute.

SCAQMD Rule: VOC = Not Applicable

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:

NFPA RATINGS: HMIS RATINGS:

HEALTH: 0 HEALTH: 0

FLAMMABILITY: 0 FLAMMABILITY: 0

REACTIVITY: 0 REACTIVITY: 0

SPECIAL: SA*

*Compressed Gas Association recommendation to designate simple asphyxiant.