

## MATERIAL SAFETY DATA SHEET

### SECTION 1. PRODUCT IDENTIFICATION

**PRODUCT NAME:** 25% Carbon Dioxide / 75% Argon  
**TRADE NAME:** COOGAR® 500 SG      **FORMULA:** CO<sub>2</sub> / Ar  
 Shielding Gas Mixture (for welding processes)

**MANUFACTURER:** Air Products and Chemicals, Inc.  
 7201 Hamilton Boulevard  
 Allentown, PA 18195-1501

**PRODUCT INFORMATION:** 1-800-752-1597

**MSDS NUMBER:** 1104      **REVISION:** 1  
**REVISION DATE:** August 1997      **REVIEW DATE:** June 1998

### SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	%	CAS NUMBER	OSHA EXPOSURE LIMITS	ACGIH EXPOSURE LIMITS
Argon	75	7440-37-1	None	Simple Asphyxiant
Carbon Dioxide	25	124-38-9	TWA = 5,000 ppm	TWA = 5,000 ppm

### SECTION 3. HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW

COOGAR® 500 SG 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  
 (610) 481-7711 other locations

#### POTENTIAL HEALTH EFFECTS:

**INHALATION:** COOGAR® 500 SG is nontoxic, 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:  
ROUTE OF ENTRY: Inhalation  
TARGET ORGANS: None  
SYMPTOMS: None

**TOXICOLOGICAL PROPERTIES:**

COCGAR® 500 SG is non-toxic. 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 COCGAR® 500 SG are not listed as a carcinogen or potential carcinogen by NTP, IARC, or OSHA Subpart Z.

**SECTION 4. FIRST AID**

**INHALATION:** Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation, and supplemental oxygen. Quick removal from contaminated area is most important.

**NOTE:** RESCUE WORKERS SHOULD BE EQUIPPED WITH SCBA (SELF-CONTAINED BREATHING APPARATUS) TO PREVENT EXPOSURE.

**EYE CONTACT:** No treatment necessary.

**SKIN CONTACT:** No treatment necessary.

**SECTION 5. FIRE AND EXPLOSION**

**FLASH POINT:**

Not Applicable

**AUTOIGNITION:**

Nonflammable

**FLAMMABLE LIMITS:**

Nonflammable

**EXTINGUISHING MEDIA:** Not applicable

**HAZARDOUS COMBUSTION PRODUCTS:** None

**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, call the Air Products emergency telephone number. 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 area where heat 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 < 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	CARBON DIOXIDE
<b>BOILING POINT (1 atm)</b>	-302.2 °F	-109.3 °F
<b>FREEZING POINT</b>	-308.79 °F	-89.97 °F
<b>GAS DENSITY at 70 °F (1 atm)</b>	0.103 lb/ft <sup>3</sup>	0.1144 lb/ft <sup>3</sup>
<b>SPECIFIC GRAVITY (air = 1)</b>	1.38	1.52
<b>SPECIFIC VOLUME at 70 °F (1 atm)</b>	9.71 ft <sup>3</sup> /lb	8.74 ft <sup>3</sup> /lb
<b>MOLECULAR WEIGHT</b>	39.95	44.01

### 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

COOGA R® 500 SG 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:** Compressed Gas n.o.s. (argon, carbon dioxide)

**IDENTIFICATION NUMBER:** UN 1956

**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.

**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:**

HEALTH: 0

FLAMMABILITY 0

REACTIVITY 0

SPECIAL: SA\*

**HMS RATINGS:**

HEALTH 0

FLAMMABILITY 0

REACTIVITY 0

\*Compressed Gas Association recommendation to designate simple asphyxiant