

# BOC GASES

## MATERIAL SAFETY DATA SHEET

PRODUCT NAME: ARGOSHIELD GAS #LG & #TC

### 1. Chemical Product and Company Identification

**BOC Gases,**  
A Division of  
The BOC Group, Inc  
575 Mountain Avenue  
Murray Hill, NJ 07974

BOC Gases,  
A Division of  
BOC Canada Ltd.  
89 Queensway West  
Mississauga, Ontario L5B 2V2

TELEPHONE NUMBER: (908)464-8100  
24-HOUR EMERGENCY TELEPHONE  
NUMBER: CHEMTREC (800)424-9300

TELEPHONE NUMBER: (905)273-7700  
24-HOUR EMERGENCY TELEPHONE  
NUMBER: (905)949-3777  
EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: ARGOSHIELD GAS #LG & #TC

CHEMICAL NAME: Oxygen and Carbon Dioxide in Argon

COMMON NAMES/SYNONYMS: Argoshield #LG, Argoshield #TC, Carbon Dioxide and Oxygen in Argon, Oxygen and Carbon Dioxide in Argon

TDG CLASSIFICATION: 2.2

WHMIS CLASSIFICATION: A, D2B

PREPARED BY: Loss Control (908)464-8100/(905)273-7700

PREPARATION DATE: 06/11/98

REVIEW DATES: 06/11/98

LATEST REVISION DATE: 06/11/98

PREVIOUS REVISION DATE: None

### 2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA <sup>1</sup>	TLV-ACGIH <sup>2</sup>	LD <sub>50</sub> or OC <sub>50</sub> Route/Species
Argon FORMULA: Ar CAS: 7440-37-1 RTECS #: CF2300000	70.0 to 95.0	Simple Asphyxiant	Simple Asphyxiant	Not Available
Carbon Dioxide FORMULA: CO <sub>2</sub> CAS: 124-38-9 RTECS #: FF6400000	0 to 25.0	5000 ppm TWA	5000 ppm TWA 30,000 ppm STEL	Not Available
Oxygen FORMULA: O <sub>2</sub> CAS: 7782-44-7 RTECS# RS2060000	2.0 to 4.0	Not Available	Not Available	Not Available

<sup>1</sup> As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

<sup>2</sup> As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

### 3. Hazards Identification

#### EMERGENCY OVERVIEW

Oxygen levels below 19.5% may cause asphyxia. Carbon dioxide exposure can cause nausea and respiratory problems. High concentrations may cause vasodilation leading to circulatory collapse.

11

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**ROUTE OF ENTRY:**

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
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**HEALTH EFFECTS:**

Exposure Limits Yes	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None reported		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

**EYE EFFECTS:**

None known or expected.

**SKIN EFFECTS:**

None known or expected.

**INGESTION EFFECTS:**

None known or expected.

**INHALATION EFFECTS:**

The effects of exposure to high concentrations so as to displace the oxygen in the air necessary for life are headaches, dizziness, labored breathing and eventual unconsciousness. The major hazard is from asphyxiation due to oxygen displacement.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

Other effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.

**NFPA HAZARD CODES**

Health: 1  
Flammability: 0  
Reactivity: 0

**HMIS HAZARD CODES**

Health: 1  
Flammability: 0  
Reactivity: 0

**RATINGS SYSTEM**

0 = No Hazard  
1 = Slight Hazard  
2 = Moderate Hazard  
3 = Serious Hazard  
4 = Severe Hazard

**4. First Aid Measures**

**EYES:**

None normally required.

**SKIN:**

None normally required.

MSDS: G-173

Revised: 06/11/98

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**INGESTION:**

None normally required.

**INHALATION:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area. If they are not breathing, administer artificial resuscitation.

**5. Fire Fighting Measures**

Conditions of Flammability: Nonflammable		
Flash point: None	Method: Not Applicable	Autoignition: Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

**FIRE AND EXPLOSION HAZARDS:**

Nonflammable

**EXTINGUISHING MEDIA:**

Use extinguishing media suitable for the combustible materials involved in the fire. Use water spray to cool fire exposed containers.

**6. Accidental Release Measures**

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

**7. Handling and Storage**

**Electrical Classification:**

Nonhazardous.

These mixtures are non corrosive and may be used with any common structural material.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve to trap in the discharge line to prevent hazardous back flow into the system.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C).

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Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

For additional information consult Compressed Gas Association's Pamphlets P-1, P-9 and Safety Bulletin SB-8.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

### 8. Exposure Controls, Personal Protection

**EXPOSURE LIMITS:**

INGREDIENT	% VOLUME	PEL-OSHA <sup>1</sup>	TLV-ACGIH <sup>2</sup>	LD <sub>50</sub> or OC <sub>50</sub> Route/Species
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IDLH (Carbon Dioxide): 50,000 ppm

Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.

**ENGINEERING CONTROLS:**

Use local exhaust and general ventilation to maintain minimum 19.5% oxygen level and less than 0.5% carbon dioxide level in ambient air.

**EYE/FACE PROTECTION:**

Safety goggles or glasses.

**SKIN PROTECTION:**

Protective industrial work gloves made of any suitable material.

**RESPIRATORY PROTECTION:**

A supplied air respirator with full face piece equipped with an escape bottle or a self-contained breathing apparatus should be available for emergency use. Operate this equipment in the positive pressure demand mode.

**OTHER/GENERAL PROTECTION:**

Safety shoes.

**9. Physical and Chemical Properties**

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not Available	
Vapor density (Air=1)	: 0.103- 0.104	lb/cu.ft
Evaporation point	: Not Available	
Boiling point	: Not Available	
Freezing point	: Not Available	
pH	: Not Available	
Specific gravity (Air = 1)	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H2O)	: 1.38-1.39	
Odor threshold	: Not Available	
Odor and appearance	: Slight	
	: Not Applicable	
	: Odorless, colorless gas	

**10. Stability and Reactivity**

**STABILITY:**  
Stable

**INCOMPATIBLE MATERIALS:**  
None

**HAZARDOUS DECOMPOSITION PRODUCTS:**  
None

**HAZARDOUS POLYMERIZATION:**  
Will not occur.

**11. Toxicological Information**

**REPRODUCTIVE:**  
Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

**12. Ecological Information**

No data given.

**13. Disposal Considerations**

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

MSDS: G-173  
Revised: 06/11/98

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#### 14. Transport Information

PARAMETER	US DOT	CTDG
PROPER SHIPPING NAME:	Compressed gases, n.o.s. (Argon, Carbon Dioxide, Oxygen)	Compressed gases, n.o.s. (Argon, Carbon Dioxide, Oxygen)
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN 1956	UN 1956
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

#### 15. Regulatory Information

##### SARA TITLE III NOTIFICATIONS AND INFORMATION

##### SARA TITLE III - HAZARD CLASSES:

Acute Health Hazard  
Sudden Release of Pressure Hazard

#### 16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

##### DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

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