

Argon Material Safety Data Sheet

ISSUE DATE	01 March 2016	TRADE NAME AND SYNONYMS Argon , LAR (Liquid only)	CHEMICAL NAME AND SYNONYMS Argon
REVISIONS	V1-02.2016	FORMULA Ar MW : 39.95	CHEMICAL FAMILY Inert Gas CAS #7440-37-1

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

Argon is a simple asphyxiant & has no threshold limit value (TLV). Argon is not listed as a carcinogen by NTP, IARC or OSHA.

SYMPTOMS IF INGESTED , CONTACTED WITH SKIN , OR VAPOR INHALED

Argon is odorless and nontoxic , but may produce suffocation by diluting the concentration of oxygen in air below levels necessary to support life. PERSONNEL , INCLUDING RESCUR WORKERS , SHOULD NOT ENTER AREAS WHERE THE OXYGEN CONCENTRATION IS BELOW 19% , UNLESS PROVIDED WITH A SELF-CONTAINED BREATHING APPARATUS OR AIRLINE RESPIRATOR. Expose to oxygen-deficient atmospheres may produce dizziness , nausea , vomiting , loss of consciousness and death. Death may result from errors in judgement , confusion , or loss of consciousness which prevents self-rescue .At low oxygen concentrations unconsciousness and death may occur in seconds without warning. Extensive tissue damage or burns can result from exposure to liquid argon or cold argon vapors.

TOXICOLOGICAL PROPERTIES

Argon is non toxic but can act as a simple asphyxiant by displacing the amount of oxygen in the air necessary to support life.

RECOMMENDED FIRST AID AND TREATMENT

Persons suffering from lack of Oxygen should be moved to areas with normal atmosphere. SELF-CONTAINED BREATHING APPARATUS MAY BE REQUIRED TO PREVENT ASPHYXIATION OF RESCUE WORKERS. Assited respiration and supplemental oxygen should be given if the victim is not breathing. If cryogenic liquid or cold boil-off gas contacts a worker's skin or eyes , frozen tissues should be flooded or soaked with tepid water (105 - 115F; 41-46C). DO NOT USE HOT WATER. Cryogenic burns which result in blistering or deeper tissue freezing should be seen promptly by a physician.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used) N/A	AUTO IGNITION TEMP N/A	FLAMMABLE LIMITS N/A	LEL N/A	UEL N/A
EXTINGUISHING MEDIA N/A		ELECTRICAL CLASSIFICATION GROUP N/A		
SPECIAL FIRE FIGHTING PROCEDURES N/A				
UNUSUAL FIRE AND EXPLOSION HAZARDS N/A				

PHYSICAL DATA

BOILING POINT (°F) @ 1 atm - 302.6F (-185.9 C)		FREEZING POINT (°F) @ 1 atm - 308.9F (-189.4C)		
VAPOR PRESSURE (psia) N/A		SOLUBILITY IN WATER @ 68F (20C) , 1 atm 3.35% by volume		
VAPOR DENSITY (lb/cu ft) @ 68F (20C) , 1 atm 0.104	SPECIFIC GRAVITY (AIR = 1) @ 68F (20C) , 1 atm 1.38	LIQUID DENSITY (lb/uc ft) @ boiling point , 1 atm 87.40	SPECIFIC GRAVITY (H2O=1) @ boiling point , 1 atm 1.40	

APPEARANCE AND ODOR

Both liquid and gaseous argon are colorless and odorless.

REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	None
INCOMPATIBILITY (Materials to avoid)			HAZARDOUS DECOMPOSITION PRODUCTS
None			None
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	None
SPILL OR LEAK PROCEDURES			
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED			
Avoid contact of skin with liquid argon or its cold boil-off gas. Flush liquid argon spill with water to disperse. Ventilate enclosed areas to prevent formation of oxygen-deficient atmosphere caused by the evaporation of liquid argon or the release of gaseous argon. Argon is heavier than air and may tend to collect in low areas if ventilation is not adequate.			
WASTE DISPOSAL METHOD			
Allow liquid argon to evaporate in a well ventilated outdoor location remote from work areas. Vent argon gas slowly to a well ventilated outdoor location remote from work areas. Do not attempt to dispose residual argon in compressed gas cylinders. Return cylinders with residual pressure. Cylinder valve tightly closed and valve caps in place.			
SPECIAL PROTECTION INFORMATION			
RESPIRATORY PROTECTION (Specify Type)			
Use self-contained breathing apparatus in oxygen-deficient atmosphere. Caution! Respirators will not function. Use may result in asphyxiation.			
VENTILATION Natural or mechanical where gas or vapors are present	LOCAL EXHAUST		SPECIAL
	MECHANICAL (General)		OTHER Vents should be situated to avoid higher than normal concentration of argon in work areas.
PROTECTIVE GLOVES			
(LAR) Loose-fitting gloves of impermeable material, such as leather. Leather work gloves are recommended when handling compressed gas cylinders.			
EYE PROTECTION			
Safety glasses are recommended when handling high pressure cylinders. Chemical goggles or safety goggles should be used when handling LAR.			
OTHER PROTECTIVE EQUIPMENT			
None			
SPECIAL PRECAUTIONS *			
SPECIAL LABELLING INFORMATION			
Argon shipment must be in accordance with Department of Transportation (DOT) regulations using DOT "NON-FLAMMABLE GAS" label. Consult DOT regulations for details on the shipping of hazardous materials.			
SPECIAL HANDLING RECOMMENDATIONS			
Prevent contact of liquid argon with exposed skin. Prevent entrapment of liquid in closed systems. Use only in well ventilated areas. Compressed gas cylinders contain argon at extremely high pressure and should be handled with care. Use a pressure reducing regulator when connecting to lower pressure piping systems. Secure cylinders when in use. Never use direct flame to heat a compressed gas cylinder. Use a check valve to prevent backflow into storage container. Avoid dragging, rolling, or sliding cylinders, even for a short distance. Use a suitable hand truck.			
SPECIAL STORAGE RECOMMENDATIONS			
Store liquid containers and cylinders in well ventilated areas. Keep cylinders away of sources of heat. Storage should not be in heavy traffic areas to prevent accidental knocking over or damage from passing or falling objects. Valve caps should remain on cylinders not connected for use. Segregate full and empty cylinders. Storage areas should be free of combustible material. Avoid exposure to areas where salt or other corrosive chemicals are present.			
OTHER RECOMMENDATIONS OR PRECAUTIONS			
Liquid argon is cryogenic liquid. Materials of construction must be selected for compatibility with extremely low temperatures. Avoid use of carbon steel and other materials which become brittle at low temperature. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. If oxygen-deficient atmospheres are suspected or can occur, use oxygen monitoring equipment to test for oxygen-deficient atmospheres.			