

SIG SOUTHERN INDUSTRIAL GAS SDN BHD

SAFETY DATA SHEET

LIQUID ARGON

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name	Liquid Argon
Synonyms	Cryogenic liquid, Argon; Refrigerated liquid, Argon.
Chemical Formula	Ar
CAS No	7440-37-1
Use of Substance	Synthetic / Analytical chemistry
Manufacturer	SOUTHERN INDUSTRIAL GAS SDN. BHD. PLO 137, Kawasan Perindustrian Senai III, 81400 Senai, Johor.
Contact Number	07-598 3863
Emergency Phone Number (24 hr)	07-598 3863

2. HAZARDS IDENTIFICATION

Chemical Name	CAS No.	Classification Code	Labeling		
			H-code	Signal Word	Hazard Pictogram
Argon	7440-37-1	Press. Gas	H 280	Warning	

Classification of the substance	Press. Gas	: Gases under pressure (Refrigerated Liquefied Gas)
Hazard Statement	H 281	: Contains refrigerated gas; may cause cryogenic burns or injury.
Precautionary Statement	P 282	: Wear cold insulating gloves / face shield / eye protection.
	P 336	: Thaw frosted parts with lukewarm water. Do not rub affected area.

P 315 : Get immediate medical advice / attention.

P 403 : Store in a well-ventilated place.

Other Hazards Asphyxiant in high concentration.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name	Ingredient	CAS Number	Purity	OSHA-PEL
Liquid Argon	Argon	7440-37-1	99.999 %	None established

*Contains no other components or impurities which influence the classification of the product.

4. FIRST AID MEASURES

Eye Contact	Immediately flush eyes with water thoroughly for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly.
Inhalation	Seek medical evaluation and treatment as soon as possible. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin Contact	For exposure to liquid, immediately warm frostbite area with warm water not exceeding 41°C. Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water.
Ingestion	Seek medical evaluation and treatment as soon as possible. None under normal use. Get medical attention if symptoms occur.
Most important symptoms and effects, both acute and delayed	No additional information available.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	All known extinguishants can be used.
Unsuitable extinguishing media	None.

Special hazards arising from the chemical

Cylinder may rupture under extreme heat.
Continue to cool fire exposed cylinders until flames are extinguished.
Damaged cylinders should be handled only by specialists.

Special protective equipment and precautions for fire fighters

In case of fire: Stop leak if safe to do so.
Continue water spray from protected position until container stays cool.
Use extinguishants to contain the fire.
Isolate the source of the fire or let it burn out.
In confined space use self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Evacuate area.
Ensure adequate air ventilation.
Eliminate ignition sources.
Post warning notices (including no smoking).

Environmental precautions

Try to stop release.
Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.

Clean up methods

Provide adequate ventilation.
Return cylinder to authorized distributor.

7. HANDLING AND STORAGE**Precaution for safe handling**

Only properly trained or experienced persons should handle the gases under pressure.
Protect cylinders from damage.
Use a suitable hand truck to move cylinders; do not drag, roll, slide or drop.
Electrical equipment must be non-sparking or explosion-proof.
Leak check system with soapy water
Never use a flame.
Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve.
Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak.
Use adjustable strap.
Contact your gas supplier if in doubt.

Condition for safe storage

Keep away from ignition sources (including static discharges).
Keep container below 50°C in a well-ventilated place.
Firmly secure cylinders upright to keep them from falling or being knocked over.
Screw valve protection cap firmly in place by hand.
Use a first-in, first-out inventory system to prevent storing full

cylinders for long periods.
 Avoid asphalted locations for storage, transfer and use (ignition risk if split).
 Containers should not be stored in conditions likely to encourage corrosion.
 Container should be stored in the vertical position and properly secured to prevent falling over.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	Exposure Limit – None established.
Appropriate engineering controls	Ensure adequate air ventilation. Avoid oxygen rich (>23.5 %) atmospheres. Oxygen detectors should be used when asphyxiating gases may be released. System under pressure should be regularly checked for leakage. Provide adequate general and local exhaust ventilation.
Personal protection equipment	Wear goggles for eye protection. Contact lens should not be worn when working. Wear suitable hand, body and head protection. Do not eat, drink or smoke when using the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless, gas
Odour	Odourless
Odour threshold	No information available
pH	Not applicable
Melting point / Freezing point	-189 °C
Boiling point	-186 °C
Flash point	Not applicable
Evaporation rate	No information available
Flammability	Non flammable
Upper/lower explosive limit	Not applicable
Vapour pressure	Not applicable
Vapour density (Air =1)	1.38
Relative density	1.4
Solubility	67 mg / L
Partition coefficient	Not known
Auto ignition temperature	Not applicable
Decomposition temperature	No data available.
Viscosity	No data available.

10. STABILITY AND REACTIVITY

Reactivity	No reactivity hazard other than the effects described in sub-section below
Chemical Stability	Stable under normal conditions of use and storage.
Possibility of hazardous reactions	None
Condition to avoid	None.
Incompatible materials	No reaction with any common materials in dry or wet conditions.
Hazardous decomposition products	None under normal conditions of use and storage.

11. TOXICOLOGICAL INFORMATION**Information on toxicological effects**

Acute toxicity	Oral: LD ₅₀ > No information available. Dermal: LD ₅₀ > No information available. Inhalation: LC ₅₀ > No information available. Inhalation: No data is available on the product itself
Skin corrosion / irritation	Based on available data, the classification criteria are not met.
Serious eye damage/ irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity product	Based on available data, the classification criteria are not met.
Reproductive toxicity product	Based on available data, the classification criteria are not met.
Specific target organ toxicity – single exposure product.	Based on available data, the classification criteria are not met.
Specific target organ toxicity – repeated exposure product	Based on available data, the classification criteria are not met.
Aspiration hazard product	Not classified

12. ECOLOGICAL INFORMATION

Ecotoxicity effect	
Acute toxicity product	No ecological damage caused by this product
Additional ecological information	No ecological damage caused by this product
Persistence and degradability	No ecological damage caused by this product
Bioaccumulative potential	No ecological damage caused by this product
Mobility in soil	No data available.
Other adverse effects	Can cause frost damage to vegetation

13. DISPOSAL CONSIDERATIONS

Waste from residue / unused product	Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well-ventilated place.
Contaminated packaging	Do not reuse empty containers. Empty remaining contents. Dispose of container and unused contents in accordance with local and national regulation. Return cylinder to supplier.

14. TRANSPORT INFORMATION

UN Number	UN 1951
UN proper shipping name	Argon, Compressed.
Transport hazard class(es)	2.2
Packing group	-
Environmental hazards	Not applicable
Special precautions for user	-
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
Information	Ensure the driver is understand well on the potential hazards of the load and knows what to do in the event of an accident or an emergency. Secured the product containers before transporting it. Ensure that the cylinder valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

15. REGULATORY INFORMATION

Contact local government authority.

16. OTHER INFORMATION

Date of Preparation / Revision of SDS 20-October-2014 / Rev. 01

Legend to the abbreviations and acronyms used

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Abbreviations	LC ₅₀	: median lethal concentration
	LD ₅₀	: median lethal dose
	PEL	: Permissible exposure limits

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