

**Argon (refrigerated)****ALSA003B**

2.2 : Non flammable, non toxic gas.

**Warning****SECTION 1. Identification of the substance/mixture and of the company/undertaking****Product identifier**

Trade name : Argon (refrigerated)  
SDS Nr : ALSA003B  
Chemical description : Argon (refrigerated)  
CAS No :007440-37-1  
EC No :231-147-0  
Index No :---  
Registration-No. : Listed in Annex IV / V REACH, exempted from registration.  
Chemical formula : Ar

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use.  
Purging.  
Laboratory use  
Contact supplier for more uses information

**Details of the supplier of the safety data sheet**

Company identification : AIR LIQUIDE (PTY) LTD  
Crn Vereeniging Road & Andre Marais Street  
Alrode, Alberton  
Gauteng SOUTH AFRICA  
Tel. : +27 87 288 1100  
E-Mail address (competent person) : scr.sales@airliquide.com

**Emergency telephone number**

Emergency telephone number : +27 87 288 1100

**SECTION 2. Hazards identification****Classification of the substance or mixture****Hazard Class and Category Code Regulation EC 1272/2008 (CLP)**

• Physical hazards : Gases under pressure - Refrigerated liquefied gas - Warning - (CLP : Press. Gas) - H281

**Classification EC 67/548 or EC 1999/45**

: Not classified as dangerous substance/mixture.  
Not included in Annex VI.  
No EC labelling required.

**Label elements****Labelling Regulation EC 1272/2008 (CLP)**

**Argon (refrigerated)**
**ALSA003B**
**SECTION 2. Hazards identification (continued)**

## • Hazard pictograms



- Hazard pictograms code : GHS04
- Signal word : Warning
- Hazard statements : H281 - Contains refrigerated gas; may cause cryogenic burns or injury.
- Precautionary statements
  - Prevention : P282 - Wear cold insulating gloves, face shield, eye protection.
  - Response : P336+P315 - Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention.
  - Storage : P403 - Store in a well-ventilated place.

**Other hazards**

: Asphyxiant in high concentrations.

**SECTION 3. Composition/information on ingredients**
**Substance / 3.2. Mixture**

Substance.

Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Argon (refrigerated)	100 %	7440-37-1	231-147-0	----	* 1	Not classified (DSD/DPD) Press. Gas (H281)

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

\* 1: Listed in Annex IV / V REACH, exempted from registration.

\* 2: Registration deadline not expired.

\* 3: Registration not required: Substance manufactured or imported &lt; 1t/y

Full text of R-phrases see chapter 16. Full text of H-statements see chapter 16

**SECTION 4. First aid measures**
**Description of first aid measures**

- Inhalation : 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 : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- Eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.
- Ingestion : Ingestion is not considered a potential route of exposure.

**Most important symptoms and effects, both acute and delayed**

: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/ consciousness. Victim may not be aware of asphyxiation.

**Indication of any immediate medical attention and special treatment needed**

: None.

**Argon (refrigerated)****ALSA003B****SECTION 5. Fire-fighting measures****Extinguishing media****Extinguishing media****- Suitable extinguishing media** : All known extinguishants can be used.**Special hazards arising from the substance or mixture****Specific hazards** : Exposure to fire may cause containers to rupture/explode.**Hazardous combustion products** : None.**Advice for fire-fighters****Specific methods** : Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains.  
If possible, stop flow of product.  
If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire.**Special protective equipment for fire fighters** : In confined space use self-contained breathing apparatus.**SECTION 6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**: Evacuate area.  
Try to stop release.  
Use protective clothing.  
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
Ensure adequate air ventilation.  
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.**Environmental precautions**

: Try to stop release.

**Methods and material for containment and cleaning up**: Liquid spillages can cause embrittlement of structural materials.  
Ventilate area.**Reference to other sections**

: See also sections 8 and 13.

**SECTION 7. Handling and storage****Precautions for safe handling****Safe use of the product** : Only experienced and properly instructed persons should handle gases under pressure. The product must be handled in accordance with good industrial hygiene and safety procedures.  
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.  
Do not smoke while handling product.  
Ensure the complete gas system was (or is regularly) checked for leaks before use.**Safe handling of the gas receptacle** : Refer to supplier's container handling instructions.  
Suck back of water into the container must be prevented.  
Do not allow backfeed into the container.  
Never attempt to repair or modify container valves or safety relief devices.  
Damaged valves should be reported immediately to the supplier.  
Keep container valve outlets clean and free from contaminants particularly oil and water.  
Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.  
Close container valve after each use and when empty, even if still connected to equipment.  
Never attempt to transfer gases from one cylinder/container to another.  
Never use direct flame or electrical heating devices to raise the pressure of a container.

**Argon (refrigerated)****ALSA003B****SECTION 7. Handling and storage (continued)**

Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

**Conditions for safe storage, including any incompatibilities**

: Observe all regulations and local requirements regarding storage of containers.  
Keep container below 50°C in a well ventilated place. Containers should be stored in the vertical position and properly secured to prevent toppling. Stored containers should be periodically checked for general condition and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.  
Containers should not be stored in conditions likely to encourage corrosion.

**Specific end use(s)**

: None.

**SECTION 8. Exposure controls/personal protection****Control parameters**

**DNEL: Derived no effect level** : None available.

**PNEC: Predicted no effect concentration** : None available.

**Exposure controls**

**Appropriate engineering controls** : Oxygen detectors should be used when asphixiating gases may be released.  
Consider work permit system e.g. for maintenance activities.  
Systems under pressure should be regularly checked for leakages.  
Provide adequate general and local exhaust ventilation.

**Individual protection measures, e.g. personal protective equipment** : A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk.  
The following recommendations should be considered.  
Protect eyes, face and skin from liquid splashes.  
Wear cold insulating gloves when transfilling or breaking transfer connections.  
Wear goggles and a face shield when transfilling or breaking transfer connections

**Environmental exposure controls** : None necessary.

**SECTION 9. Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

- Physical state at 20°C / 101.3kPa : Gas.

- Colour : Colourless.

**Odour** : No odour warning properties.

**Odour threshold** : Odour threshold is subjective and inadequate to warn for overexposure.

**Molar mass [g/mol]** : 40

**Melting point [°C]** : -189

**Boiling point [°C]** : -186

**Critical temperature [°C]** : -122

**Flash point [°C]** : Not applicable for gases and gas-mixtures.

**Evaporation rate (ether=1)** : Not applicable for gases and gas-mixtures.

**Flammability range [vol% in air]** : Non flammable.

**Vapour pressure [20°C]** : Not applicable.

**Relative density, gas (air=1)** : 1.38

**Relative density, liquid (water=1)** : 1.4

**Solubility in water [mg/l]** : 67

**Argon (refrigerated)****ALSA003B****SECTION 9. Physical and chemical properties (continued)**

Partition coefficient n-octanol/water : Not applicable for inorganic gases.

Auto-ignition temperature [°C] : 40 Not applicable.

**Other information**

Other data : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**SECTION 10. Stability and reactivity****Reactivity**

: No reactivity hazard other than the effects described in sub-sections below.

**Chemical stability**

: Stable under normal conditions.

**Possibility of hazardous reactions**

: None.

**Conditions to avoid**

: None under recommended storage and handling conditions (see section 7).

**Incompatible materials**: None.  
For additional information on compatibility refer to ISO 11114**Hazardous decomposition products**

: None.

**SECTION 11. Toxicological information****Information on toxicological effects**

Acute toxicity : No known toxicological effects from this product.

Skin corrosion/irritation : No known effects from this product.

Serious eye damage/irritation : No known effects from this product.

Respiratory or skin sensitisation : No known effects from this product.

Carcinogenicity : No known effects from this product.

Germ cell mutagenicity : No known effects from this product.

Reproductive toxicity : No known effects from this product.

STOT-single exposure : No known effects from this product.

STOT-repeated exposure : No known effects from this product.

Aspiration hazard : Not applicable for gases and gas-mixtures.

**SECTION 12. Ecological information****Toxicity**

: No known ecological damage caused by this product.

**Persistence - degradability**

: No data available.

**Bioaccumulative potential**

: No data available.

**Mobility in soil**

**Argon (refrigerated)****ALSA003B****SECTION 12. Ecological information (continued)**

: No data available.

**Results of PBT and vPvB assessment**

: Not classified as PBT or vPvB.

**Other adverse effects**

Effect on ozone layer : Can cause frost damage to vegetation.  
Effect on the global warming : None.  
: No known effects from this product.

**SECTION 13. Disposal considerations****Waste treatment methods**

: Do not discharge into any place where its accumulation could be dangerous.  
May be vented to atmosphere in a well ventilated place.  
Consult supplier for specific recommendations.

**Additional information**

: None.

**SECTION 14. Transport information**

UN number : 1951  
Labelling ADR, IMDG, IATA



: 2.2 : Non flammable, non toxic gas.

**Land transport (ADR/RID)**

H.I. nr : 22  
UN proper shipping name : ARGON, REFRIGERATED LIQUID  
Transport hazard class(es) : 2  
Classification code : 3 A  
Packing Instruction(s) : P203  
Tunnel Restriction : C/E Tank carriage: Passage forbidden through tunnels of category C, D and E; Other carriage: Passage forbidden through tunnels of category E  
Environmental hazards : None.

**Sea transport (IMDG)**

Proper shipping name : ARGON, REFRIGERATED LIQUID  
Class : 2.2  
Packing group : P203  
Emergency Schedule (EmS) - Fire : F-C  
Emergency Schedule (EmS) - Spillage : S-V  
Packing instruction : P203

**Air transport (ICAO-TI / IATA-DGR)**

Proper shipping name (IATA) : ARGON, REFRIGERATED LIQUID  
Class : 2.2  
Passenger and Cargo Aircraft : Allowed.  
Packing instruction - Passenger and Cargo Aircraft : 202

**Argon (refrigerated)****ALSA003B****SECTION 14. Transport information (continued)**

Cargo Aircraft only : Allowed.  
Packing instruction - Cargo Aircraft only : 202

**Special precautions for user**

: Avoid transport on vehicles where the load space is not separated from the driver's compartment.  
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.  
Before transporting product containers :  
- Ensure that containers are firmly secured.  
- Ensure cylinder valve is closed and not leaking.  
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.  
- Ensure valve protection device (where provided) is correctly fitted.  
- Ensure there is adequate ventilation.

**SECTION 15. Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****EU legislation**

Restrictions on use : None.  
Seveso directive 96/82/EC : Not covered.

**National legislation**

: Ensure all national/local regulations are observed.

**Chemical Safety Assessment**

: A CSA does not need to be carried out for this product.

**SECTION 16. Other information**

**Indication of changes** : Revised safety data sheet in accordance with commission regulation (EU) No 453/2010  
**Training advice** : The hazard of asphyxiation is often overlooked and must be stressed during operator training.  
**List of full text of H-statements in section 3.** : H281 - Contains refrigerated gas; may cause cryogenic burns or injury.  
**Note** : This Safety Data Sheet has been established in accordance with the applicable European Union legislation.  
**DISCLAIMER OF LIABILITY** : Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.  
Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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