SECTION 1: Identification

1.1. Product identifier

Product form	:	Substance
Name	:	Argon, refrigerated liquid
CAS No	:	7440-37-1
Formula	:	Ar
Other means of identification	:	Argon, refrigerated liquid
Product group	:	Core Products

1.2. Recommended use and restrictions on use

Recommended uses and restrictions	:	Industrial use Use as directed

1.3. Supplier

	:	Airtec Group of Companies.
	:	Refrigeration and Oxygen Company.
	:	P.O box Safat **13006,**
	:	Kuwait
	:	www.airtecgulf.com

1.4. Emergency telephone number

Emergency number	:	Onsite Emergency: +965-1844-844
Fax no	:	+965-2484-3020
Email	:	info@rocq8.com

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-CA classification

Simple Asphyxiant	H380
Refrigerated liquefied gas	H281

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms :

GHS04

Signal word : WARNING

Hazard statements	:	CONTAINS REFRIGERATED GAS; MAY CAUSE CRYOGENIC BURNS OR INJURY MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION
Precautionary statements	:	Do not handle until all safety precautions have been read and understood Use and store only outdoors or in a well-ventilated area Wear cold insulating gloves and either face shield or eye protection Use a back flow preventive device in the piping Close valve after each use and when empty DO NOT change or force fit connections

2.3. Other hazards

Other hazards not contributing to the classification	:	Asphyxiant in high concentrations. Contact with liquid may cause cold burns/frostbite.

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	CAS No.	% (Vol.)	Common Name (synonyms)
Argon, refrigerated liquid (Main constituent)	(CAS No) 7440-37-1	100	Argon, compressed

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after 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.

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (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. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : None.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Explosion hazard : CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED.

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

Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : DANGER! Extremely cold liquid and gas under pressure. Take care not to direct spray onto vents on top of container. Do not discharge sprays directly into liquid; cryogenic liquid can freeze water rapidly

Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.

Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.

Special protective equipment for fire fighters : Use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

Specific methods	:	Stop flow of product if safe to do so. Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. Use water spray or fog to knock down fire fumes if possible. If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire. Exposure to fire may cause containers to rupture/explode.
Other information	:	Cryogenic liquid causes severe frostbite, a burn-like injury. Heat of fire can build pressure in a closed container and cause it to rupture. Venting vapors may obscure visibility. Air will condense on surfaces such as vaporizers or piping exposed to liquid or cold gas. Nitrogen, which has a lower boiling point than oxygen, evaporates first, leaving an oxygen-enriched condensate.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.

6.2. Reference to other sections

For further information refer to section 8: Exposure controls/personal protection

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods **OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

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

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Safety glasses, Face shield, Gloves.

Hand protection : Wear work gloves when handling containers. Wear heavy rubber gloves where contact with product may occur.

Eye protection : Wear goggles and a face shield when transfilling or breaking transfer connections. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

Respiratory protection : **Respiratory protection:** Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves. Wear cold insulating gloves when transfilling or breaking transfer connections.

Environmental exposure controls : None necessary.

Other information : **Other protection :** Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of flame resistant anti-static safety clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	Colorless gas.
Molecular mass	:	40 g/mol
Colour	:	Colourless.
Odour	:	Odourless.
Odour threshold	:	No data available
pH	:	Not applicable.
pH solution	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	Not applicable.
Melting point	:	-189 °C
Freezing point	:	No data available
Boiling point	:	-185.9 °C
Flash point	:	No data available
Critical temperature	:	-122.4 °C
Auto-ignition temperature	:	Not applicable.
Decomposition temperature	:	No data available
Vapour pressure	:	Not applicable.
Vapour pressure at 50 °C	:	No data available
Critical pressure	:	4898 kPa
Relative vapour density at 20 °C	:	No data available
Relative density	:	1.4
Relative density of saturated gas/air mixture	:	No data available
Density	:	1.654 kg/m³ Vapor density, 70°F (21.1°C), 1 atm
Relative gas density	:	1.38
Solubility	:	Water: 67 mg/l

Log Pow	:	Not applicable.
Log Kow	:	Not applicable.
Viscosity, kinematic	:	Not applicable.
Viscosity, dynamic	:	Not applicable.
Viscosity, kinematic (calculated value) (40 °C)	:	No data available
Explosive properties	:	Not applicable.
Oxidizing properties	:	None.
Flammability (solid, gas)	:	None.

9.2. Other information

Gas group	:	Refrigerated liquefied gas
Additional information	:	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

10.1. 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.
Hazardous decomposition products	:	None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified
Skin corrosion/irritation	:	Not classified pH: Not applicable.
Serious eye damage/irritation	:	Not classified pH: Not applicable.
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

12.2. Persistence and degradability

Argon, refrigerated liquid (7440-37-1)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

Argon, refrigerated liquid (7440-37-1)	
Log Pow	Not applicable.
Log Kow	Not applicable.

Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Argon, refrigerated liquid (7440-37-1)	
Mobility in soil	No data available.
Log Pow	Not applicable.
Log Kow	Not applicable.
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : May be vented to atmosphere in a well ventilated place. Consult supplier for specific recommendations.
Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : UN1951
TDG Primary Hazard Classes : 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas.
Proper shipping name : ARGON, REFRIGERATED LIQUID
Explosive Limit and Limited Quantity Index : 0.125 L
Passenger Carrying Ship Index : Forbidden
HS Code : 2804.21.00
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 75 L

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1951
Proper Shipping Name (IMDG) : ARGON, REFRIGERATED LIQUID
Class (IMDG) : 2 - Gases
MFAG-No : 120

IATA

UN-No. (IATA) : 1951
Proper Shipping Name (IATA) : Argon, refrigerated liquid
Class (IATA) : 2

SECTION 15: Regulatory information

15.1. National regulations

Argon, refrigerated liquid (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Argon, refrigerated liquid (7440-37-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed
on INSQ (Mexican national Inventory of Chemical Substances)

SECTION 16: Other information

Indication of changes:

Training advice : The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Other information : Airtec asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Airtec, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Airtec, Inc, it is the user's obligation to determine the conditions of safe use of the product

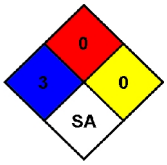
Airtec SDSs are furnished on sale or delivery by Airtec or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Airtec sales representative.

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

NFPA specific hazard : SA - This denotes gases which are simple asphyxiants.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

Use proper connections; do not use adapters. Do not force fit!!

DISCLAIMER

The information and recommendations in this Safety Data Sheet relate only to the specific material mentioned herein and do not relate to use otherwise ie.in combination with any other material or in any process. The information and recommendations herein are taken from our extensive experiences and the data contained in recognized references and believed by us to be true. Airtec group of companies make no warranties either expressed or implied with respect there to and assume no liability in connection with the use of such information and recommendation.