



SECTION 1. Product and company identification

1.1 Product identifier

Product Name	: ARGON , LIQUID ARGON
Trade Names	: Argon-40; Argon, isotope of mass 40; 40Ar; ARGON; Argon,Welding Quality; ARGON, COMPRESSED
Chemical formula	: Ar
Cas No.	: 7440-37-1
EC No.	: 231-147-0

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

Relevant identified uses	: Industrial and professional. Perform risk assessment prior to use. Aerosol propellant. Balance gas for mixtures. Blanketing gas. Calibration gas. Carrier gas. Fire suppressant gas. Food packaging gas. Inerting gas. Inflating tyres. Laboratory use. Laser gas. Pressure head gas, operational assist gas in pressure systems. Process gas. Purge gas. Test gas. Consumer use. Beverage applications. Shielding gas in gas welding. It is the responsibility of the end user to ensure that the product as supplied is suitable for its intended use.
Uses advised against	: Industrial or technical grade is unsuitable for medical and/or food applications or inhalation.

1.3 Details of the supplier of the safety data sheet

Company identification	: United Industrial Gases Co., Ltd. 29 / 3 Moo.5 Bangna-Trad Road, T.Bangsaotong, A.Bangsaotong Samutprakarn 10570
Tel	: 0-2338-1460
Emergency telephone number	: (+66) 8516 71888
Fax	: 0-2708-3873
E-mail	: uiggases@gmail.com

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008/EC (CLP/GHS)

Physical hazards	: GASES UNDER PRESSURE - Compressed gas may explode if heated.
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2.2 Label elements

Classification according to Regulation (EC) No. 1272/2008/EC (CLP/GHS)

Hazard pictograms



GHS04

Signal word	: Warning
Hazard statements	: H280 Contains gas under pressure; may explode if heated. H380 May displace oxygen and cause rapid suffocation.
Precautionary statements (CLP)	
General	: P103 Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. P102 Keep out of reach of children. P101 If medical advice is needed, have product container or label at hand.
Prevention	: Not applicable.
Storage	: P410+403 Protect from sunlight. Store in a well-ventilated place.
Disposal	: Not applicable.
Response	: Not applicable.
Hazards not otherwise classified	: In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

SECTION 3. Composition / information on ingredients

Chemical Name	CAS No.	REACH Registration No.	%
Argon	7440-37-1	REACH Registration No. Listed in Annex IV/V of Regulation (EC) No1907/2006 (REACH),exempted from registration.	100%

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4. First aid measures

4.1 Description of first aid measures

Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10

minutes. Get medical attention if irritation occurs.

Ingestion : As this product is a gas, refer to the inhalation section.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation : No known significant effects or critical hazards. Acts as a simple asphyxiant.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

5.3 Special protective equipment and precautions for fire-fighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spills : Immediately contact emergency personnel. Stop leak if without risk.
Large spills : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use (s) : -

SECTION 8. Exposure controls / personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Argon	ACGIH TLV (United States, 3/2017). Oxygen Depletion [Asphyxiant].

8.2 Exposure controls

8.2.1 Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or

other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

8.2.2 Individual protection measures, e.g. personal protective equipment

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye / face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with sideshields.
- Hand/Skine protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Respiratory protection** : The gas can cause asphyxiation without warning by replacing the oxygen in the air. Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. If operating conditions cause high gas concentrations to be produced or any recommended or statutory exposure limit is exceeded, use an air-fed respirator or self-contained breathing apparatus. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

8.2.3 Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state

: Gas.

Colour

: Colorless.

Odour

: Odorless.

Odour threshold

: Not available.

pH value

: Not available.

Molecular weight	: 39.95 g/mole
Melting point	: -189.2°C (-308.6°F)
Freezing point	: Not available.
Boiling point	: -185.9°C (-302.6°F)
Flash point	: [Product does not sustain combustion.]
Critical temperature [°C]	: -122.4°C (-188.3°F)
Decomposition temperature	: Not available.
Evaporation rate (ether = 1)	: Not available.
Flammability range	: Not available.
Vapour pressure [20 °C]	: Not available.
Vapour pressure [50 °C]	: Not available.
Relative density, gas (air = 1)	: 0.103
Relative density, liquid (water = 1)	: Not available.
Vapor density	: 1.66 (Air = 1)
Solubility in water	: Not available.
Partition coefficient n-octanol / water [log Kow]	: 0.74
Auto-ignition temperature	: Not available.
Viscosity [20 °C]	: Not available.
Explosive Properties	: Not available.
Oxidising Properties	: Not available.
Coefficient of oxygen equivalency (Ci)	: Not available.

SECTION 10. Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Do not allow gas to accumulate in low or confined areas.
10.5 Incompatible material	: No specific data.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity	: Not available.
Irritation/Corrosion	: Not available.
Sensitization	: Not available.
Mutagenicity	: Not available.
Carcinogenicity	: Not available.
Reproductive toxicity	: Not available.
Teratogenicity	: Not available.
Specific target organ toxicity (single exposure)	: Not available.
Specific target organ toxicity (repeated exposure)	: Not available.
Aspiration hazard	: Not available.

Potential acute health effects

- Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.
- Inhalation** : No known significant effects or critical hazards. Acts as a simple asphyxiant.
- Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

SECTION 12. Ecological information

12.1 Toxicity : Not available.

12.2 Persistence and degradability : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Argon	0.74	-	low

12.4 Mobility in soil Assessment : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

SECTION 13. Disposal considerations

13.1 Disposal Methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

SECTION 14. Transport information**14.1 In accordance with TDG**

UN number : UN1006
 Proper shipping name : ARGON, COMPRESSED
 Transport hazard class(es) : 2.2
 Packing group : -

**14.2 Transport by sea****IMDG**

UN number : UN1006
 Proper shipping name : ARGON, COMPRESSED
 Transport hazard class(es) : 2.2
 Packing group : -

IATA

UN number : UN1006
 Proper shipping name : ARGON, COMPRESSED
 Transport hazard class(es) : 2.2
 Packing group : -

SECTION 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.

Clean Air Act Section 112 : Not listed

(b) Hazardous Air**Pollutants (HAPs)**

Clean Air Act Section 602 : Not listed

Class I Substances

Clean Air Act Section 602 : Not listed

Class II Substances

DEA List I Chemicals : Not listed

(Precursor Chemicals)

DEA List II Chemicals : Not listed

(Essential Chemicals)**SARA 302/304****Composition/information on ingredients**

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations**Massachusetts**

New York	: This material is listed.
New Jersey	: This material is not listed.
Pennsylvania	: This material is listed.
California Prop. 65	: This material is listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

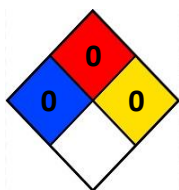
Not listed.

Inventory list

Australia	: This material is listed or exempted.
Canada	: This material is listed or exempted.
China	: This material is listed or exempted.
Europe	: This material is listed or exempted.
Japan	: Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
New Zealand	: This material is listed or exempted.
Philippines	: This material is listed or exempted.
Republic of Korea	: This material is listed or exempted.
Taiwan	: This material is listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: This material is listed or exempted.
Viet Nam	: Not determined.

SECTION 16. Other information

Other information



NFPA health hazard : 0 Substance not considered toxic under OSHA's Hazard Communication Standard. Under emergency conditions, this substance would offer no hazard beyond that of ordinary combustible material

NFPA fire hazard : 0 Substance is not considered combustible or flammable under OSHA's Hazard Communication Standard. Substance that will not burn.

NFPA reactivity : 0 Normally stable material that does not react with water.
Substance not considered explosive under OSHA's
Hazard Communication Standard.

NFPA specific hazard : -

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.