

MATERIALS SAFETY DATA SHEET (MSDS)



ARGON

SECTION 1 – IDENTIFICATION (MATERIAL & SUPPLIER)

Product Identifier Argon, Compressed

Other Means of Identification SDS PG21

Chemical Formula Ar

Recommended Use (of the Chemical and Restrictions on use)
Shielding gas for welding various.
Industrial & food applications requiring inert gas. In analytical chemistry as a reference gas.

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MSDS Date: May 2022

SECTION 2 – HAZARDS IDENTIFICATION

Compressed Argon is

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA but rather

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE.

Hazard Class and Category Code Regulation EC 1272/2008 (CLP) Physical Hazards Gases under pressure Compressed gas - Warning -

(CLP : Press. Gas) - H280

Classification EC 67/548 or EC 1999/45

Not classified as dangerous substance/mixture.

Label Elements, including Precautionary Statements

Labelling Regulation EC 1272/2008 (CLP)

Hazard Pictograms



Hazard Pictograms Code GHS04
Signal Word Warning
Hazard Statements H280 - Contains gas under pressure; may explode if heated.

Precautionary Statements
Storage P403
Store in a well ventilated place.

Other Hazards None.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Material	Abbreviation	Contents	CAS No.	EC NO
Argon	Ar	100%	7440-37-1	231-147-0

SECTION 4 – FIRST AID MEASURES

4.1. Description of First Aid Measures

First Aid Measures

Inhalation In high concentrations will cause asphyxiation. Symptoms may include loss of mobility/consciousness. The affected person may not be aware of asphyxiation. Remove the affected person to a ventilated & non contaminated area wearing Rescuers must be wearing & use self contained breathing apparatus (SCBA). Keep the affected person warm and allow to rest & recover. Call a doctor. Apply artificial respiration if breathing stopped.

Skin Contact No adverse effects expected.
Eye Contact No adverse effects expected.
Ingestion An unlikely route for adverse reactions.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed
See section 11.

4.3. Indication of any immediate Medical Attention and Special Treatment needed

None.

Swallowed: Not applicable.
Skin: Not applicable.
Eyes: Not applicable.
Inhaled: Remove the affected person from the Argon rich incident area to the nearest well ventilated & safe area by means of personnel wearing/using SCBA so as to avoid themselves becoming asphyxiated injury. Check the state of consciousness of the affected person and whether breathing. If not, perform artificial respiration preferably using an automated oxygen resuscitator. Keep the affected person's body warm and level. Dial 000 for medical assistance.

SECTION 5 – FIRE-FIGHTING MEASURES

Flammability Non flammable.

Fire and Explosion Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot. Isolate gas flow where safe to do so.

Extinguishing Use water fog to cool containers from protected area.
Hazchem Code 2T
2 Fine Water Spray.
T Wear full fire kit and breathing apparatus.
Dilute spill and run-off.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures
If possible prevent gas from discharging.

Personnel Precautions

Evacuate area.
Rescuers to wear SCBA when entering area unless atmosphere is confirmed safe.
Open windows or use fans to make sure that there is sufficient fresh air entering the affected area.

6.2. Environmental Precautions

None.
Try to stop release.
Prevent from entering low lying areas such as cellars, basements and work pits, or any such place where Argon accumulation & buildup would prove to be dangerous.

6.3. Methods and Material for Containment and Cleaning Up

None.

Clean Up Procedure

Ventilate area.

6.4. Reference to Subsequent Sections

See also sections 8 & 13.

SECTION 7 – HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

Observe the following requirement of the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Observe the requirements of State Dangerous Goods (Storage and Handling) Regulations.

7.1 Storage and Handling

Storage Temperature Room Temperature
UN Class 2.2 Non-Flammable, Non-toxic gas
Packaging Group Not assigned
UN Number 1006 Argon, compressed
EPG Number 2C1
Correct Shipping Name Argon, compressed

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ARGON *continued*

7.2 Storage Conditions (See Also AS4332 For Details)

Cylinders (Containers) are to be stored upright with their valve protective cap fitted, ideally outside of buildings or in a well ventilated area. Keep cylinders cool to minimise the pressure build up inside the cylinder (Container), i.e. Do not store the Cylinders (Containers) in direct sunlight.

Argon Cylinders (Containers) should be stored in areas not exceeding 45°C.

Observe safe manual handling of Cylinders (Containers) to avoid back or other injuries. Always move Cylinders (Containers) with cylinder dollies or portable racks; never roll or drag a bottle.

Store Argon Cylinders (Containers) in an area away from foot and vehicle traffic to reduce the risk of accidental damage or impact & make sure that they are secured to say a wall bracket with a strap or chain. For indoors, use a well-ventilated storage area.

For outdoors, use a storage area that's protected from weather and equipped with a lock to prevent theft or tampering.

7.3 Spills, Leaks and Disposal

CAUTION: In the event of a cylinder (Container) rupture or uncontrolled release, evacuate all non-essential personnel from the immediate vicinity until the cylinder (Container) gas release has subsided & dissipated.

Use the necessary protective measures (i.e. Wear gloves and goggles) when approaching the discharged cylinder (Container). If in a confined or non ventilated space use a self-contained breathing apparatus.

Do not attempt to repair leaking BD's or cylinder valves but simply fit a secure tag & print whether the valve and/or BD are defective and leaking. If possible date and print your name & contact details.

Argon gas is non-flammable and does not support combustion. Exposing the cylinder (Container) to intense heat or flame (e.g. a fire.)

may cause the cylinder to vent rapidly and/or rupture violently. To prevent the above happening, all Argon cylinder valves are fitted with a BD (Burst disc.)

This should in most cases prevent the Cylinder (Container) from rupturing.

The BD's act as a safety valve and are designed to vent the Argon gas when exposed to an elevated temperature of 65 degrees Centigrade.

If the cylinders have simply become hot and the BDs have not released any gas cool/spray with water from a hose until cooled to the ambient air temperature.

If the Cylinders (Containers) are in a fire call the emergency services or fire brigade to deal with the situation as they are trained & have the equipment to deal with the matter.

7.4 Decomposition Products

Argon None (Remains as Argon.)

In case of Small

Fire/Explosion use: Water

In case of Major

Emergency

Hazchem Code: 2(T)

Extinguishing Medium: Water fog or fine water spray

Danger of Violent

Reaction or Explosion: Not from the Argon gas decomposition or some chemical reaction.

Protective Clothing: For Cylinder handling & when using with gas regulators: Wear appropriate protective work gloves, safety shoes and safety glasses.

For rescue operations of people affected by Argon build up in a confined space, ensure rescuers are wearing & using self contained breathing apparatus (SCBA) to ensure that they do not suffer the risk of asphyxiation.

Appropriate Measures: Isolate the Argon leak & dilute the effect of the presence of Argon by increased ventilation by opening all doors & windows or by forced ventilation if available.

Evacuate All other personnel in the immediate vicinity of the incident area.

7.5 Other Information

Store and use compressed Argon in well ventilated areas.

Do not drop, tip, or roll Cylinders (Containers) on their sides.

Do not use oil and grease on Cylinders (Containers), cylinder valves or the threaded valve caps.

Connect the Equipment or Materials properly as detailed in the Manufacturer's instructions.

Only use regulators, interconnecting piping and equipment with the correct mating connections and that are designed to withstand the high pressures to be encountered.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1. Control Parameters

DNEL: Derived No Effect Level None available.

PNEC: Predicted No Effect

Concentration None available.

8.2. Exposure Controls

8.2.1. Appropriate Engineering - Controls Systems under pressure are to be regularly checked for leakages. Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.

8.2.2. Individual Protection A risk assessment should be such measures as PPE 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:

Wear safety glasses with side shields, leather safety gloves, safety shoes when manually handling cylinders.

Personal Protection Ensure adequate ventilation.

8.2.3. Environmental Exposure Controls Refer to local regulations for restriction of emissions to the atmosphere. See also section 13 for controls specific methods for waste gas treatment.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Appearance

Physical state at 20°C / 101.3kPa Gas.

Colour

Colourless.

Odour

Nil

Odour threshold

Odour threshold is subjective and inadequate to warn for overexposure.

pH value

N/A.

Molar mass [g/mol]

N/A.

Melting point [°C]

-189

Boiling point [°C]

-186

Critical temperature [°C]

-122

Flash point [°C]

N/A.

Evaporation rate (ether=1)

N/A.

Flammability range [vol% in air]

Non flammable.

Vapour pressure [20°C]

N/A.

Relative density, gas (air=1)

1.38

Relative density, liquid (water=1)

N/A.

Solubility in water [mg/l]

61

Partition coefficient n-octanol/water

N/A.

Viscosity at 20°C [mPa.s]

N/A.

Explosive Properties

N/A.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity

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

Stability and reactivity: Stable.

Chemical Stability

Stable.

Possibility of Hazardous Reactions

None.

Conditions to Avoid

None.

Incompatible Materials

None.

Hazardous Decomposition Products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 – TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Toxicity Information No known toxicological effects from this product.

Acute Toxicity No known toxicological effects from this product.

Rat Inhalation LC50 [ppm/4h] No data available.

Skin Corrosion/irritation No known effects from this product.

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Serious Eye Damage/Irritation	No known effects from this product.
Respiratory or Skin Sensitisation	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	N/A.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity	No data available.
Persistence degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Results of PBT and vPvB assessment	No data available.

Other Adverse Effects

Ecological Effects Information

No known ecological damage caused by this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods	May be vented to atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous.
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Refer to the code of practice of EIGA (Doc. 30/10 "Disposal of Gases, downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods.
Contact supplier if guidance is required.
General: Do not discharge into any place where its accumulation could be dangerous.
May be vented to atmosphere in a well ventilated place.
Contact supplier if guidance is required.

Additional information	None.
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SECTION 14 – TRANSPORT INFORMATION

Un Number	1006
Labelling ADR, IMDG, IATA	



2.2 : Non flammable, non toxic gas.

Land Transport (Adriid)	
H.I. nr	20
UN Proper Shipping Name	ARGON, COMPRESSED
Transport Hazard Class(es)	2
Classification Code	1 A
Packing Instruction(s)	P200
Tunnel Restriction	E Passage forbidden through tunnels of category E.
HAZCHEM - Emergency Action Code	2T
	2 = Fine water spray. T = Recommended personal protective equipment : Full fire kit and breathing apparatus. Appropriate measures: Dilute.

Sea Transport (IMDG)	
Proper Shipping Name	ARGON, COMPRESSED
Class	2.2
Emergency Schedule (EmS) - Fire	F-C
Emergency Schedule (EmS) - Spillage	S-V
Packing Instruction	P200

Air Transport (ICAO-TI / IATA-DGR)	
Proper Shipping Name (IATA)	ARGON, COMPRESSED
Class	2.2
Passenger and Cargo Aircraft	Allowed.
Packing Instruction - Passenger & Cargo Aircraft	200
Cargo Aircraft Only	Allowed.

Packing Instruction - Cargo Aircraft Only	200
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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 there is adequate ventilation.
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.

Labelling ADR Other Transport Information

2.2: Non flammable, non toxic gas.

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.
Compliance with applicable regulations.

SECTION 15 – REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture.

EU Legislation	Not covered.
Seveso Directive 96/82/EC	
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 – ANY OTHER RELEVANT INFORMATION

Indication of Changes	Revised safety data sheet in accordance with commission regulation (EU) No 453/2010
Training Advice	Receptacle under pressure. Asphyxiate in high concentrations. Keep container in a well-ventilated place. Do not breathe the gas. Ensure all national/local regulations are observed. 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 compressed gas; may cause cold burns when gas is expanding or injury.
Further Information	Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP/ (EC) 1999/45 DPD.

Note: This Safety Data Sheet has been established in accordance with "Preparation of safety data sheets for hazardous chemicals" - code of practice.

DISCLAIMER OF LIABILITY

Details given in this document are believed to be correct at the time of issue. Although proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Before using this product in **any new process or experiment**, a thorough material compatibility and safety study should be carried out.