

Argon, Ref. Liq.



Description

Argon gas is inert, colourless, odourless and tasteless. In its liquid form colourless and odourless.

Applications

- G.M.A. and G.T.A. welding materials
- Inert atmospheres
- Filler gas in incandescent and neon lamps
- Plasma cutting (mixed with hydrogen)
- Gas chromatography
- Spectometry
- Purge gas
- Aluminium & steel production
- Glass manufacturing

Hazard statement(s)

- Contains refrigerated gas; may cause cryogenic burns or injury.

Prevention statement(s)

- Wear cold insulating gloves/face shield/eye protection.

Response statement(s)

- Get immediate medical advice/attention.
- Thaw frosted parts with lukewarm water. Do not rub affected area.

Storage statement(s)

- Store in a well-ventilated place.

Storage statement(s)

- Asphyxiant. Effects are proportional to oxygen displacement.

Signal Word: Warning

UN No.: 1951

Hazard No.: 2T

Chem Symbol: Ar

Pictograms:



Argon, Ref. Liq.

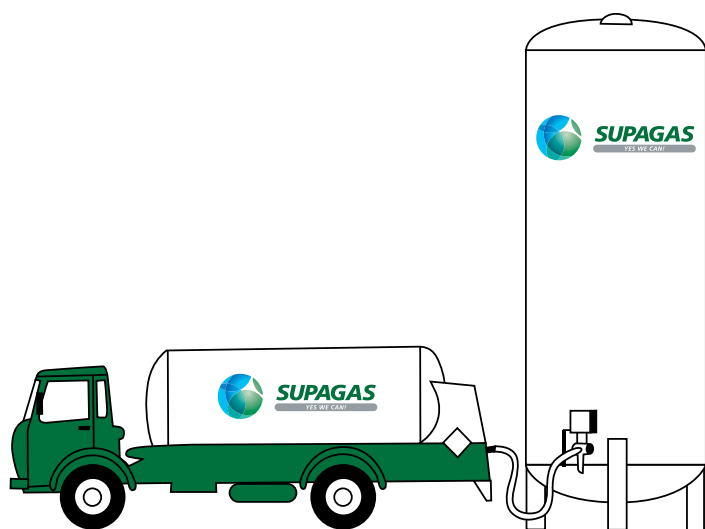


General Specifications

Physical Data	
Chemical Symbol	Ar
Boiling Point	-185.9°C
Relative Density (Air=1)	1.4
Molecular Weight	39.948
Critical Temperature	-122.4°C
Flashpoint	Non flammable
Density of Gas @ 101.3 kPa & 15°C	1.78 kg/m ³
Density of Liquid (B.Pt.)	1393 kg/m ³
Specific Volume @ 101.3 kPa & 15°C	0.591 m ³ /kg

Storage Tanks

Tank Size Range
>1,000 - < 60,000 lt



Typical Analysis

Product Type	Ar	O ₂	Moisture
Refrigerated Liquid	>99.999%	5ppm	<5ppm

Quality Assurance

Supagas Pty Ltd is committed to comply with the requirements of ISO 9001-2019 and to continually improve the effectiveness of our Quality Management System.

Everyone at Supagas understands we must provide a safe environment for both our employees and the wider community. We are therefore committed to implement and maintain a continual improvement approach throughout the organisation whilst also meeting all applicable statutory and regulatory requirements.

NATA Accreditation

The Supagas Laboratory located in Ingleburn, NSW has a NATA



Accreditation
(No. 18955).
Accredited for
compliance with
ISO/IEC 17025
and ISO 17034.

For Further Information

On how we can help you with all your residential and industrial gas needs, view our website supagas.com.au, call Customer Service on 13 78 72 or drop in to your local Supagas branch.



SUPAGAS

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1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name ARGON, REFRIGERATED LIQUID
Synonyms ARGON • REFRIGERATED ARGON

1.2 Uses and uses advised against

Uses REFRIGERANT

1.3 Details of the supplier of the product

Supplier name SUPAGAS PTY LIMITED
Address 5 Benson Rd, Ingleburn, NSW, 2565, AUSTRALIA
Telephone (02) 8788 4444
Fax (02) 8788 4445
Website <http://www.supagas.com.au>

1.4 Emergency telephone numbers

Emergency 1300 275 021

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Gases Under Pressure: Refrigerated liquefied gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H281 Contains refrigerated gas; may cause cryogenic burns or injury.

Prevention statements

P282 Wear cold insulating gloves and either face shield or eye protection.

Response statements

P336 + P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Storage statements

P403 Store in a well-ventilated place.

PRODUCT NAME ARGON, REFRIGERATED LIQUID

Disposal statements

None allocated.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ARGON	7440-37-1	231-147-0	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable.

5.3 Advice for firefighters

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.

5.4 Hazchem code

2T	
2	Fine Water Spray.
T	Wear full fire kit and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

PRODUCT NAME ARGON, REFRIGERATED LIQUID

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. Only experienced and properly instructed personnel should handle compressed gases.

7.2 Conditions for safe storage, including any incompatibilities

Portable liquid container should be stored below 65°C in a secure area and upright to prevent from falling. Portable liquid containers should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits. Ensure that containers are properly vented to prevent build up of pressure.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Argon	SWA [AUS]	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Ensure ventilation is adequate to maintain oxygen concentrations above 18 %.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS LIQUID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	-185.9°C
Melting point	-189°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE

PRODUCT NAME ARGON, REFRIGERATED LIQUID

9.1 Information on basic physical and chemical properties

Vapour density	NOT AVAILABLE
Relative density	1.38
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
Critical temperature	-122°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Compatible with most commonly used materials.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Eye	Not classified as an eye irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

PRODUCT NAME ARGON, REFRIGERATED LIQUID

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1951	1951	1951
14.2 Proper Shipping Name	ARGON, REFRIGERATED LIQUID	ARGON, REFRIGERATED LIQUID	ARGON, REFRIGERATED LIQUID
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code 2T

EmS F-C, S-V

Other information Transport on open top vehicles in accordance with local legislation.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings
AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)
All components are listed on AIIC, or are exempt.
EUROPE: EINECS (European Inventory of Existing Chemical Substances)
All components are listed on EINECS, or are exempt.

16. OTHER INFORMATION

PRODUCT NAME ARGON, REFRIGERATED LIQUID

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

Carbon Dioxide, Ref. Liq.



Description

Carbon Dioxide is a colourless, odourless, non flammable gas that is denser than air.

Applications

- Making dry ice snow
- Protective atmosphere in arc welding
- pH control for pools
- Carbonation of soft drinks, beers, juices, water, etc.
- Tapping and dispensing of beer
- Food packaging
- Food freezing, chilling, purging and inerting
- Blanketing of wine and grape juice
- Grain storage fumigation
- Refrigeration systems
- Solvent for extraction of organic chemicals
- Fire extinguishers
- Greenhouse atmosphere enrichment
- Propellant in aerosol packaging

Hazard statement(s)

- Contains refrigerated gas; may cause cryogenic burns or injury.
- May cause long lasting harmful effects to aquatic life.

Prevention statement(s)

- Avoid release to the environment.
- Wear cold insulating gloves/face shield/eye protection.

Response statement(s)

- Get immediate medical advice/attention.
- Thaw frosted parts with lukewarm water. Do not rub affected area.

Storage statement(s)

- Store in a well-ventilated place.

Disposal statement(s)

- Dispose of contents/container in accordance with relevant regulations.

Other Hazards

- In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns/frostbite.

Signal Word: Warning

UN No.: 2187

Hazard No.: 2T

Chem Symbol: CO₂

Pictograms:



Carbon Dioxide, Ref. Liq.

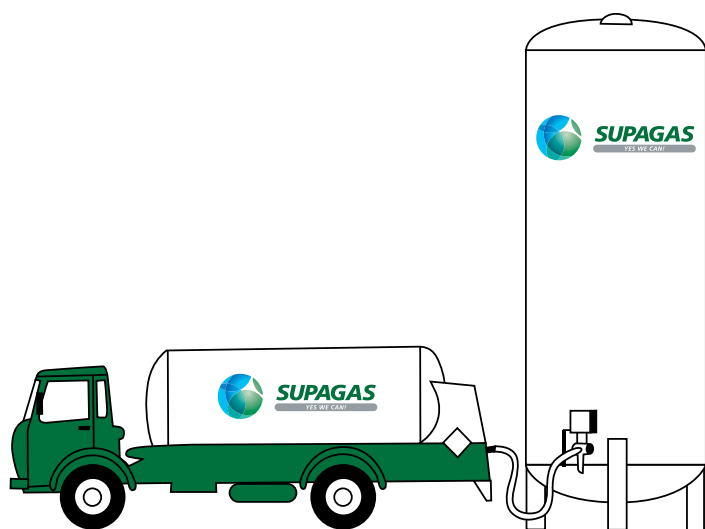


General Specifications

Physical Data	
Chemical Symbol	CO ₂
Boiling Point	-78.5°C
Relative Density (Air=1)	1.53
Molecular Weight	44.01
Critical Temperature	-21.0°C
Flashpoint	Non flammable
Density of Gas @ 101.3 kPa & 15°C	1.872 kg/m ³
Density of Liquid (B.Pt.)	6300 kg/m ³
Specific Volume @ 101.3 kPa & 15°C	0.535 m ³ /kg

Storage Tanks

Tank Size Range
≥250 - < 60,000 lt



Typical Analysis

Product Type	CO ₂	O ₂	Moisture
Refrigerated Liquid	≥99.9%	<30ppm	<20ppm

Quality Assurance

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NATA Accreditation

The Supagas Laboratory located in Ingleburn, NSW has a NATA



Accreditation
(No. 18955).
Accredited for
compliance with
ISO/IEC 17025
and ISO 17034.

For Further Information

On how we can help you with all your residential and industrial gas needs, view our website supagas.com.au, call Customer Service on 13 78 72 or drop in to your local Supagas branch.



SUPAGAS

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1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name CARBON DIOXIDE, REFRIGERATED LIQUID

Synonyms CARBON DIOXIDE, COMPRESSED • SUPAGAS CARBON DIOXIDE REFRIGERATED LIQUID

1.2 Uses and uses advised against

Uses CARBONATING/ PRESSURE DISPENSING • FIRE FIGHTING • FOOD PACKAGING • FREEZING APPLICATIONS • WELDING

1.3 Details of the supplier of the product

Supplier name SUPAGAS PTY LIMITED

Address 5 Benson Rd, Ingleburn, NSW, 2565, AUSTRALIA

Telephone (02) 8788 4444

Fax (02) 8788 4445

Website <http://www.supagas.com.au>

1.4 Emergency telephone numbers

Emergency 1300 275 021

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Gases Under Pressure: Refrigerated liquefied gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Aquatic Toxicity (Chronic): Category 4

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H281 Contains refrigerated gas; may cause cryogenic burns or injury.
H413 May cause long lasting harmful effects to aquatic life.

Prevention statements

P273 Avoid release to the environment.
P282 Wear cold insulating gloves and either face shield or eye protection.

Response statements

P336 + P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

PRODUCT NAME CARBON DIOXIDE, REFRIGERATED LIQUID

Storage statements

P403 Store in a well-ventilated place.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns/frostbite.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CARBON DIOXIDE	124-38-9	204-696-9	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	None allocated.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury. Low concentrations of CO₂ cause increased respiration and headache.

4.3 Immediate medical attention and special treatment needed

Treat for asphyxia and cold burns.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable.

5.3 Advice for firefighters

Temperatures in a fire may cause liquid vessels and related equipment to rupture. Storage vessels may contain fine particle insulation materials or foam products which may be hazardous or release hazardous decomposition products in a fire. Cool vessels exposed to fire by applying water from a protected location. Do not approach vessels suspected of being hot. Evacuate area if unable to keep vessels cool.

5.4 Hazchem code

2T

2 Fine Water Spray.

T Wear full fire kit and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

PRODUCT NAME CARBON DIOXIDE, REFRIGERATED LIQUID

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Refer to vessel operating instructions. Do not store near incompatible substances, heat or ignition sources and foodstuffs. Portable liquid containers should be stored: upright, prevented from falling, in a secure area; below 65°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Carbon dioxide	SWA [AUS]	5000	9000	30000	54000
Carbon dioxide in coal mines	SWA [AUS]	12500	22500	30000	54000
Carbon dioxide in coal mines	SWA [Proposed]	5000	9000	30000	54000

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLORLESS LIQUID
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT

9.1 Information on basic physical and chemical properties

Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	IMMEDIATE
pH	NOT AVAILABLE
Vapour density	1.53 (Air = 1)
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	6,300 kPa @ 25°C
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
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10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid contact with incompatible substances.

10.5 Incompatible materials

Moist carbon dioxide is corrosive, hence acid resistant materials are required (e.g. stainless steel). Certain properties of some plastics and rubbers may be affected by carbon dioxide (i.e. embrittlement, leaching of plasticisers, etc).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met. Low concentrations of carbon dioxide cause increased respiration and headache.
Skin	Not classified as a skin irritant. Contact with dry ice powder may cause frostbite injury or cold burns.
Eye	Not classified as an eye irritant. Contact with dry ice powder may cause frostbite injury or cold burns.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

PRODUCT NAME CARBON DIOXIDE, REFRIGERATED LIQUID**12.1 Toxicity**

May cause long-term adverse effects in the environment.

12.2 Persistence and degradability

Not expected to be persistent in the aquatic environment.

12.3 Bioaccumulative potential

Bioaccumulation is not expected.

12.4 Mobility in soil

The substance is a gas, not applicable.

12.5 Other adverse effects

When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Ensure all liquid and gas supply valves are shut. Notify the manufacturer that you will be returning the portable liquid container. Residual product will be disposed of under the manufacturer's supervision.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	2187	2187	2187
14.2 Proper Shipping Name	CARBON DIOXIDE, REFRIGERATED LIQUID	CARBON DIOXIDE, REFRIGERATED LIQUID	CARBON DIOXIDE, REFRIGERATED LIQUID
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code	2T
GTEPG	2C2
EmS	F-C, S-V
Other information	Transport on open top vehicles in accordance with local legislation.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Classifications	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
Inventory listings	AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

Nitrogen, Ref. Liq.



Description

Nitrogen is an almost totally inert gas which is both colourless and odourless. Liquid Nitrogen is non flammable and does not support combustion.

Applications

- Wine sparging/inerting
- Purging
- Tyre inflation
- Inert atmospheres
- Food packaging
- Gauge calibration
- Metal degassing
- Aerosol propellant
- Hydraulic systems
- Photo processing
- Mixed with H₂ or He for leak detection
- Food freezing
- Plastic forming
- Pipeline testing
- Air tools
- Firefighting
- Medical
- Laser Assist Gas
- Medical & Lab Applications

Hazard statement(s)

- Contains refrigerated gas; may cause cryogenic burns or injury.

Prevention statement(s)

- Wear cold insulating gloves/face shield/eye protection.

Response statement(s)

- Get immediate medical advice/attention.
- Thaw frosted parts with lukewarm water. Do not rub affected area.

Storage statement(s)

- Protect from sunlight. Store in a well-ventilated place.

Other hazards

- Asphyxiant. Effects are proportional to oxygen displacement.

Signal Word: Warning

UN No.: 1977

Hazard No.: 2T

Chem Symbol: N₂

Pictograms:





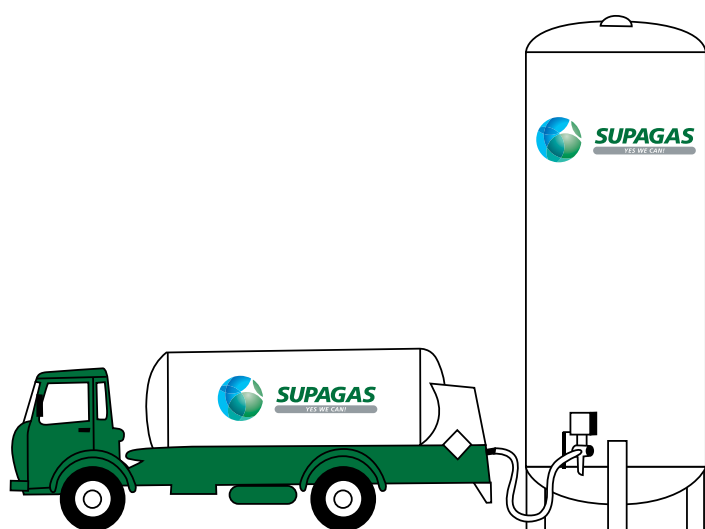
Nitrogen, Ref. Liq.

General Specifications

Physical Data	
Chemical Symbol	N ₂
Boiling Point	-195.8°C
Relative Density (Air=1)	0.967
Molecular Weight	28.013
Critical Temperature	-147.1°C
Flashpoint	Non flammable
Density of Gas @ 101.3 kPa & 15°C	1.170 kg/m ³
Density of Liquid (B.Pt.)	809 kg/m ³
Specific Volume @ 101.3 kPa & 15°C	0.855 m ³ /kg

Storage Tanks

Tank Size Range
≥250 - < 60,000 lt



Typical Analysis

Product Type	N ₂	O ₂	Moisture
Refrigerated Liquid	99.999%	<5ppm	<5ppm

Quality Assurance

Supagas Pty Ltd is committed to comply with the requirements of ISO 9001-2019 and to continually improve the effectiveness of our Quality Management System.

Everyone at Supagas understands we must provide a safe environment for both our employees and the wider community. We are therefore committed to implement and maintain a continual improvement approach throughout the organisation whilst also meeting all applicable statutory and regulatory requirements.

NATA Accreditation

The Supagas Laboratory located in Ingleburn, NSW has a NATA



Accreditation
(No. 18955).
Accredited for
compliance with
ISO/IEC 17025
and ISO 17034.

For Further Information

On how we can help you with all your residential and industrial gas needs, view our website supagas.com.au, call Customer Service on 13 78 72 or drop in to your local Supagas branch.



SUPAGAS

YES WE CAN!

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name NITROGEN (REFRIGERATED LIQUID)
Synonyms FOOD GRADE LIQUID NITROGEN • LIQUID NITROGEN • NITROGEN (REFRIGERATED)

1.2 Uses and uses advised against

Uses INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name SUPAGAS PTY LIMITED
Address 5 Benson Rd, Ingleburn, NSW, 2565, AUSTRALIA
Telephone (02) 8788 4444
Fax (02) 8788 4445
Website <http://www.supagas.com.au>

1.4 Emergency telephone numbers

Emergency 1300 275 021

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Gases Under Pressure: Refrigerated liquefied gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word WARNING

Pictograms



Hazard statements

H281 Contains refrigerated gas; may cause cryogenic burns or injury.

Prevention statements

P282 Wear cold insulating gloves and either face shield or eye protection.

Response statements

P336 + P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Storage statements

P403 Store in a well-ventilated place.

PRODUCT NAME NITROGEN (REFRIGERATED LIQUID)**Disposal statements**

None allocated.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
NITROGEN	7727-37-9	231-783-9	99.9%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable.

5.3 Advice for firefighters

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.

5.4 Hazchem code

2T

2 Fine Water Spray.

T Wear full fire kit and breathing apparatus. Dilute spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

PRODUCT NAME NITROGEN (REFRIGERATED LIQUID)

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Portable liquid container should be stored below 65°C in a secure area and upright to prevent from falling. Portable liquid containers should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Nitrogen	SWA [AUS]	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	-195.8°C
Melting point	-210°C
Evaporation rate	NOT RELEVANT
pH	NOT RELEVANT
Vapour density	0.967 (Air = 1)
Solubility (water)	NOT AVAILABLE

PRODUCT NAME NITROGEN (REFRIGERATED LIQUID)

9.1 Information on basic physical and chemical properties

Vapour pressure	NOT RELEVANT
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Critical temperature	-146.95°C
Density	808.6 kg/m ³ @ 15°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Compatible with most commonly used materials.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Eye	Not classified as an eye irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

PRODUCT NAME NITROGEN (REFRIGERATED LIQUID)**12.3 Bioaccumulative potential**

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Waste disposal** Cylinders should be returned to the manufacturer or supplier for disposal of contents.**Legislation** Dispose of in accordance with relevant local legislation.**14. TRANSPORT INFORMATION**

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1977	1977	1977
14.2 Proper Shipping Name	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code 2T
GTEPG 2C3
EmS F-C, S-V

Other information Transport on open top vehicles in accordance with local legislation.**15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Poison schedule** A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).**Classifications** Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).**Inventory listings**
AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)
All components are listed on AIIC, or are exempt.
EUROPE: EINECS (European Inventory of Existing Chemical Substances)
All components are listed on EINECS, or are exempt.**16. OTHER INFORMATION**

PRODUCT NAME NITROGEN (REFRIGERATED LIQUID)

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

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Prepared by

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[End of SDS]

Oxygen, Ref. Liq.



Description

Oxygen is colourless, odourless and tasteless. It is not flammable but vigorously supports combustion. In its liquid form appears pale blue in colour.

Applications

- Used for MAP (Modified Atmospheric Packaging) gases
- Oxy-acetylene welding
- Flame cleaning
- Oxy cutting
- Flame heating
- Flame hardening
- Water treatment
- Chemical reactions requiring increased oxidation rates
- Laser cutting assist gas

Hazard statement(s)

- May cause or intensify fire; oxidizer.
- Contains gas under pressure; may explode if heated.

Prevention statement(s)

- Keep/Store away from clothing/incompatible materials/combustible materials.
- Keep reduction valves free from grease and oil.
- Wear cold insulating gloves/face shield/eye protection.

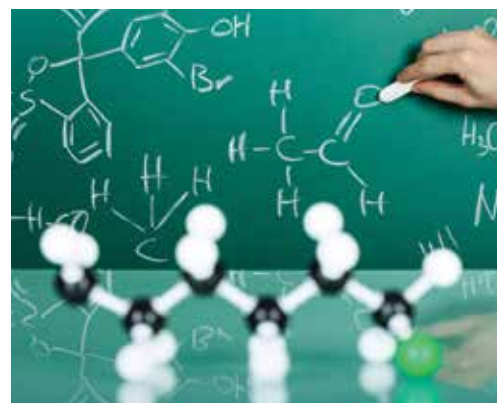
Response statement(s)

- Get immediate medical advice/attention.
- Thaw frosted parts with lukewarm water. Do not rub affected area.
- In case of fire: Stop leak if safe to do so.

Storage statement(s)

- Protect from sunlight. Store in a well-ventilated place.

Signal Word: Danger
UN No.: 1073
Hazard No.: 2P
Chem Symbol: O₂
Pictograms:



Oxygen, Ref. Liq.

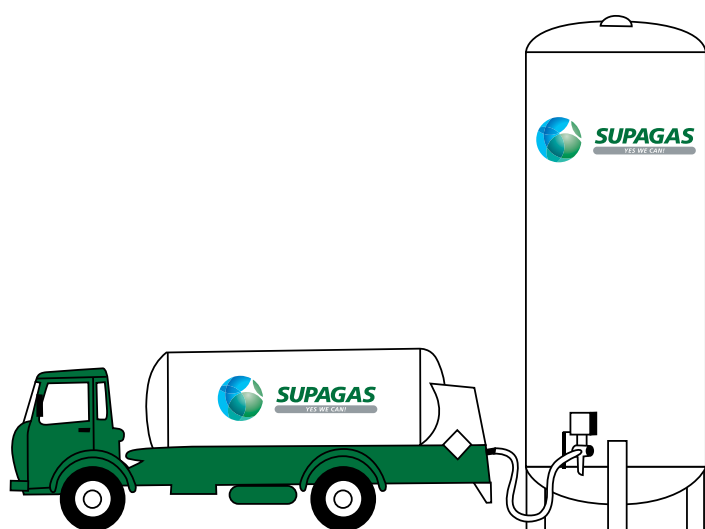


General Specifications

Physical Data	
Chemical Symbol	O ₂
Boiling Point	-183.0°C
Relative Density (Air=1)	1.105
Molecular Weight	31.999
Critical Temperature	-118.8°C
Flashpoint	Non flammable
Density of Gas @ 101.3 kPa & 15°C	1.355 kg/m ³
Density of Liquid (B.Pt.)	1141 kg/m ³
Specific Volume @ 101.3 kPa & 15°C	0.738 m ³ /kg

Storage Tanks

Tank Size Range
>1,000 - < 60,000 lt



Typical Analysis

Product Type	CO ₂	Moisture
Refrigerated Liquid	>99.5%	<20ppm

Quality Assurance

Supagas Pty Ltd is committed to comply with the requirements of ISO 9001-2015 and to continually improve the effectiveness of our Quality Management System.

Everyone at Supagas understands we must provide a safe environment for both our employees and the wider community. We are therefore committed to implement and maintain a continual improvement approach throughout the organisation whilst also meeting all applicable statutory and regulatory requirements.

NATA Accreditation

The Supagas Laboratory located in Ingleburn, NSW has a NATA

Accreditation
(No. 18955).



Accredited for
compliance with ISO/
IEC 17025 and ISO
Guide 34, Reference

Gas Mixtures prepared to ISO 6142.

For Further Information

On how we can help you with all your gas and welding needs, drop in to your local Supagas branch or call Customer Service on 13 78 72.



SUPAGAS

YES WE CAN!

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name OXYGEN (REFRIGERATED LIQUID)
Synonyms LOX • OXYGEN • REFRIGERATED LIQUID OXYGEN

1.2 Uses and uses advised against

Uses COMBUSTION AID • STEEL MANUFACTURE • WASTE TREATMENT • WELDING

1.3 Details of the supplier of the product

Supplier name SUPAGAS PTY LIMITED
Address 5 Benson Rd, Ingleburn, NSW, 2565, AUSTRALIA
Telephone (02) 8788 4444
Fax (02) 8788 4445
Website <http://www.supagas.com.au>

1.4 Emergency telephone numbers

Emergency 1300 275 021

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Oxidizing Gases: Category 1
Gases Under Pressure: Refrigerated liquefied gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H270 May cause or intensify fire; oxidizer.
H281 Contains refrigerated gas; may cause cryogenic burns or injury.

Prevention statements

P220 Keep away from clothing and other combustible materials.
P244 Keep valves and fittings free from oil and grease.
P282 Wear cold insulating gloves and either face shield or eye protection.

Response statements

P336 + P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.
P370 + P376 In case of fire: Stop leak if safe to do so.

PRODUCT NAME OXYGEN (REFRIGERATED LIQUID)

Storage statements

P403 Store in a well-ventilated place.

Disposal statements

None allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
OXYGEN	7782-44-7	231-956-9	99.5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	Due to product form / nature of use, an inhalation hazard is not anticipated.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Direct contact with the liquefied material or escaping compressed gas may cause cold burns similar to frostbite injury. Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable - oxidising agent. Supports combustion and may cause fire/explosion in contact with incompatible substances, strong acids, reducing agents, combustibles and flammables.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. Remove cool cylinders from the path of the fire if safe to do so. Ensure working area is well ventilated before re-use. Notify the manufacturer that you will be returning a faulty cylinder. Residual product will be disposed of when the cylinder is returned.

5.4 Hazchem code

2PE	
2	Fine Water Spray.
P	Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Dilute spill and run-off.
E	Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

PRODUCT NAME OXYGEN (REFRIGERATED LIQUID)

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible materials. Portable liquid container should be stored below 65°C in a secure area and upright to prevent from falling. Portable liquid containers should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Use local exhaust in combination with general ventilation as necessary to keep oxygen concentrations below 23.5%.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Not required under normal conditions of use.
Respiratory	Not required under normal conditions of use.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BLUE GAS (LIQUEFIED UNDER PRESSURE)
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	-183°C
Melting point	NOT AVAILABLE

PRODUCT NAME OXYGEN (REFRIGERATED LIQUID)

9.1 Information on basic physical and chemical properties

Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	1.105 (Air = 1)
Solubility (water)	NOT AVAILABLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	OXIDISING GAS
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Keep away from combustible materials.

10.5 Incompatible materials

Combustible materials such as oil and grease can spontaneously ignite at low temperatures in oxygen enriched atmospheres. Materials which burn in air, will burn more vigorously in oxygen enriched atmospheres.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin	Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Eye	Not classified as an eye irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Not classified as causing organ damage from single exposure.
STOT - repeated exposure	Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No ecological damage caused by this product.

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12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

Can cause frost damage to vegetation. No effect on the ozone layer or global warming.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1073	1073	1073
14.2 Proper Shipping Name	OXYGEN, REFRIGERATED LIQUID	OXYGEN, REFRIGERATED LIQUID	OXYGEN, REFRIGERATED LIQUID
14.3 Transport hazard classes	2.2 (5.1)	2.2 (5.1)	2.2 (5.1)
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code 2PE

GTEPG 2C7

EmS F-C, S-W

Other information Transport on open top vehicles in accordance with local legislation.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.
EUROPE: EINECS (European Inventory of Existing Chemical Substances)
All components are listed on EINECS, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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