



A-Gas Nitrogen, High Purity

A-Gas (Australia) Pty Ltd

Chemwatch: 4689-13

Version No: 3.1.1.1

Material Safety Data Sheet according to NOHSC and ADG requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 06/09/2013

Print Date: 13/02/2014

Initial Date: Not Available

S.Local.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	A-Gas Nitrogen, High Purity
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	NITROGEN, COMPRESSED
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

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

Relevant identified uses	The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation. A wide variety of applications including the manufacture of ammonia, nitric, acid, nitrates, cyanides, etc.; in manufacture of explosives., Blanket gas to form an oxygen free, inert atmosphere for the preservation of, materials, including food; metallurgy. Filling of incandescent bulbs.
--------------------------	---

Details of the supplier of the safety data sheet

Registered company name	A-Gas (Australia) Pty Ltd
Address	9-11 Oxford Road Laverton North VIC 3026 Australia
Telephone	[+61] (0) 3 93689222
Fax	[+61] (0) 3 93689233
Website	www.agas.com
Email	info.au@agas.com

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	TOLL: [+61] 1800 024 973
Other emergency telephone numbers	TOLL: [+61] 1800 024 973

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
1800 039 008	+612 9186 1132	Not Available

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

DANGEROUS GOODS. NON-HAZARDOUS SUBSTANCE. According to NOHSC Criteria, and ADG Code.

CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability	0		0 = Minimum
Toxicity	2		1 = Low
Body Contact	2		2 = Moderate
Reactivity	0		3 = High
Chronic	0		4 = Extreme

Poisons Schedule	None
Risk Phrases [1]	R44 Risk of explosion if heated under confinement.
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

A-Gas Nitrogen, High Purity

GHS Classification ^[1]

Gas under Pressure (Compressed gas)

Legend:

1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Label elements

GHS label elements



SIGNAL WORD

WARNING

Hazard statement(s)

H280

Contains gas under pressure; may explode if heated

AUH044

Risk of explosion if heated under confinement

Precautionary statement(s): Prevention

Not Applicable

Precautionary statement(s): Response

Not Applicable

Precautionary statement(s): Storage

P410+P403

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

Precautionary statement(s): Disposal

Not Applicable

Label elements

Relevant risk statements are found in section 2

Indication(s) of danger

Not Applicable

SAFETY ADVICE

S03

Keep in a cool place.

S15

Keep away from heat.

S56

Dispose of this material and its container at hazardous or special waste collection point.

Other hazards

Inhalation may produce health damage*.

Vapours potentially cause drowsiness and dizziness*.

May produce discomfort of the respiratory system*.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7727-37-9.	NotSpec.	nitrogen

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact

- ▶ If product comes in contact with eyes remove the patient from gas source or contaminated area.
- ▶ Take the patient to the nearest eye wash, shower or other source of clean water.
- ▶ Open the eyelid(s) wide to allow the material to evaporate.
- ▶ Gently rinse the affected eye(s) with clean, cool water for at least 15 minutes. Have the patient lie or sit down and tilt the head back. Hold the eyelid(s) open and pour water slowly over the eyeball(s) at the inner corners, letting the water run out of the outer corners.
- ▶ The patient may be in great pain and wish to keep the eyes closed. It is important that the material is rinsed from the eyes to prevent further damage.
- ▶ Ensure that the patient looks up, and side to side as the eye is rinsed in order to better reach all parts of the eye(s)
- ▶ Transport to hospital or doctor.
- ▶ Even when no pain persists and vision is good, a doctor should examine the eye as delayed damage may occur.
- ▶ If the patient cannot tolerate light, protect the eyes with a clean, loosely tied bandage.
- ▶ Ensure verbal communication and physical contact with the patient.

DO NOT allow the patient to rub the eyes

DO NOT allow the patient to tightly shut the eyes

DO NOT introduce oil or ointment into the eye(s) without medical advice

DO NOT use hot or tepid water.

A-Gas Nitrogen, High Purity

Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ Following exposure to gas, remove the patient from the gas source or contaminated area. ▶ NOTE: Personal Protective Equipment (PPE), including positive pressure self-contained breathing apparatus may be required to assure the safety of the rescuer. ▶ Prostheses such as false teeth, which may block the airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If the patient is not breathing spontaneously, administer rescue breathing. ▶ If the patient does not have a pulse, administer CPR. ▶ If medical oxygen and appropriately trained personnel are available, administer 100% oxygen. ▶ Summon an emergency ambulance. If an ambulance is not available, contact a physician, hospital, or Poison Control Centre for further instruction. ▶ Keep the patient warm, comfortable and at rest while awaiting medical care. ▶ MONITOR THE BREATHING AND PULSE, CONTINUOUSLY. ▶ Administer rescue breathing (preferably with a demand-valve resuscitator, bag-valve mask-device, or pocket mask as trained) or CPR if necessary.
Ingestion	<ul style="list-style-type: none"> ▶ Not considered a normal route of entry.

Indication of any immediate medical attention and special treatment needed

	<p>for gas exposures:</p> <p>-----</p> <p>BASIC TREATMENT</p> <p>-----</p> <ul style="list-style-type: none"> ▶ Establish a patent airway with suction where necessary. ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary. ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min. ▶ Monitor and treat, where necessary, for pulmonary oedema . ▶ Monitor and treat, where necessary, for shock. ▶ Anticipate seizures. <p>-----</p> <p>ADVANCED TREATMENT</p> <p>-----</p> <ul style="list-style-type: none"> ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred. ▶ Positive-pressure ventilation using a bag-valve mask might be of use. ▶ Monitor and treat, where necessary, for arrhythmias. ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications. ▶ Drug therapy should be considered for pulmonary oedema. ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications. ▶ Treat seizures with diazepam. ▶ Proparacaine hydrochloride should be used to assist eye irrigation. <p><i>BRONSTEIN, A.C. and CURRANCE, P.L.</i> <i>EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994</i></p>
--	---

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	<p>SMALL FIRE: Use extinguishing agent suitable for type of surrounding fire.</p> <p>LARGE FIRE: Cool cylinder.</p>
--	---

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
-----------------------------	-------------

Advice for firefighters

Fire Fighting	<p>-----</p> <p>GENERAL</p> <p>-----</p> <ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Containers may explode when heated - Ruptured cylinders may rocket ▶ Fire exposed containers may vent contents through pressure relief devices. ▶ High concentrations of gas may cause asphyxiation without warning. ▶ May decompose explosively when heated or involved in fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ Avoid breathing vapour and any contact with liquid or gas. Protective equipment including respirator should be used. ▶ DO NOT enter confined spaces were gas may have accumulated.
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of all unprotected personnel and move upwind. ▶ Alert Emergency Authority and advise them of the location and nature of hazard. ▶ Wear breathing apparatus and protective gloves. ▶ Prevent by any means available, spillage from entering drains and water-courses.
<p>Personal Protective Equipment advice is contained in Section 8 of the MSDS.</p>	

SECTION 7 HANDLING AND STORAGE

A-Gas Nitrogen, High Purity

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Consider use in closed pressurised systems, fitted with temperature, pressure and safety relief valves which are vented for safe dispersal. ▶ The tubing network design connecting gas cylinders to the delivery system should include appropriate pressure indicators and vacuum or suction lines. ▶ Fully-welded types of pressure gauges, where the bourdon tube sensing element is welded to the gauge body, are recommended. ▶ Before connecting gas cylinders, ensure manifold is mechanically secure and does not contain another gas.
Other information	<ul style="list-style-type: none"> ▶ Cylinders should be stored in a purpose-built compound with good ventilation, preferably in the open. ▶ Such compounds should be sited and built in accordance with statutory requirements. ▶ The storage compound should be kept clear and access restricted to authorised personnel only. ▶ Cylinders stored in the open should be protected against rust and extremes of weather.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Cylinder: ▶ Ensure the use of equipment rated for cylinder pressure. ▶ Ensure the use of compatible materials of construction. ▶ Valve protection cap to be in place until cylinder is secured, connected.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances

PACKAGE MATERIAL INCOMPATIBILITIES

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	nitrogen	Nitrogen	Not Available	Not Available	Not Available	Asphyxiant (see Chapter 10)

EMERGENCY LIMITS

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
nitrogen	65000(ppm)	65000(ppm)	230000(ppm)	400000(ppm)

Ingredient	Original IDLH	Revised IDLH
A-Gas Nitrogen, High Purity	Not Available	Not Available

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hand protection	<ul style="list-style-type: none"> ▶ When handling sealed and suitably insulated cylinders wear cloth or leather gloves.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Protective overalls, closely fitted at neck and wrist. ▶ Eye-wash unit. ▶ Ensure availability of lifeline in confined spaces. ▶ Staff should be trained in all aspects of rescue work.
Thermal hazards	

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the A-Gas Nitrogen, High Purity Not Available

Material	CPI

* CPI - Chemwatch Performance Index

A: Best Selection

Respiratory protection

Not Applicable

B: Satisfactory; may degrade after 4 hours continuous immersion
 C: Poor to Dangerous Choice for other than short term immersion

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Colourless, odourless compressed gas; sparingly soluble in water. Soluble in liquid ammonia, alcohol. Packed under pressure in pewter-coloured cylinders fitted with AS2473 Type10 valve outlet. rapid generation of large volume of asphyxiant gas. warning of exposure. Compressed nitrogen is available at different pressures. For example, (a) normal - 13,700 kPa @ 15 deg. C; (b) high - 25,000 kPa @ 15 deg.		
Physical state	Compressed gas	Relative density (Water = 1)	Not available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not applicable
pH (as supplied)	Not Applicable	Decomposition temperature	Not Applicable
Melting point / freezing point (°C)	-209.9	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	-195.8	Molecular weight (g/mol)	28.02
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not applicable	Volatile Component (%vol)	100
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution(1%)	Not Applicable
Vapour density (Air = 1)	0.967	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▸ Presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation.
Ingestion	Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). Direct contact with the eye may not cause irritation because of the extreme volatility of the gas; however concentrated atmospheres may produce irritation after brief exposures..
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Principal route of occupational exposure to the gas is by inhalation.

A-Gas Nitrogen, High Purity	TOXICITY	IRRITATION
	Not Available	Not Available

A-Gas Nitrogen, High Purity

nitrogen	TOXICITY	IRRITATION
	Not Available	Not Available

* Value obtained from manufacturer's msds
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

A-Gas Nitrogen, High Purity, NITROGEN	No significant acute toxicological data identified in literature search.		
Acute Toxicity	Not Applicable	Carcinogenicity	Not Applicable
Skin Irritation/Corrosion	Not Applicable	Reproductivity	Not Applicable
Serious Eye Damage/Irritation	Not Applicable	STOT - Single Exposure	Not Applicable
Respiratory or Skin sensitisation	Not Applicable	STOT - Repeated Exposure	Not Applicable
Mutagenicity	Not Applicable	Aspiration Hazard	Not Applicable

CMR STATUS

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

Mobility in soil

Ingredient	Mobility
Not Available	Not Available


SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> Evaporate residue at an approved site. Return empty containers to supplier. If containers are marked non-returnable establish means of disposal with manufacturer prior to purchase. Ensure damaged or non-returnable cylinders are gas-free before disposal.
------------------------------	---

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2T

Land transport (ADG)

UN number	1066
Packing group	Not Available
UN proper shipping name	NITROGEN, COMPRESSED
Environmental hazard	No relevant data
Transport hazard class(es)	Class : 2.2 Subrisk :
Special precautions for user	Special provisions : limited quantity : 120 ml

A-Gas Nitrogen, High Purity

Air transport (ICAO-IATA / DGR)

UN number	1066	
Packing group	Not Available	
UN proper shipping name	Nitrogen, compressed	
Environmental hazard	No relevant data	
Transport hazard class(es)	ICAO/IATA Class	2.2
	ICAO / IATA Subrisk	
	ERG Code	2L
Special precautions for user	Special provisions	A69
	Cargo Only Packing Instructions	200
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	200
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Forbidden
	Passenger and Cargo Maximum Qty / Pack	Forbidden

Sea transport (IMDG-Code / GGVSee)

UN number	1066	
Packing group	Not Available	
UN proper shipping name	NITROGEN, COMPRESSED	
Environmental hazard	No relevant data	
Transport hazard class(es)	IMDG Class	2.2
	IMDG Subrisk	
Special precautions for user	EMS Number	F-C,S-V
	Special provisions	
	Limited Quantities	120 ml

SECTION 15 REGULATORY INFORMATION

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

nitrogen(7727-37-9.) is found on the following regulatory lists	"International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "Australia Dangerous Goods Code (ADG Code) - Packing Instruction - Compressed Gases", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List"
--	---

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.