

SAFETY DATA SHEET

1072

Product Name **BETWEEN 0.93 TO 4.68% NITRIC OXIDE BALANCE NITROGEN**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name **BOC LIMITED (AUSTRALIA)**
Address 10 Julius Avenue, North Ryde, NSW, AUSTRALIA, 2113
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Emergency 1800 653 572 (24/7) (Australia only)
Web Site <http://www.boc.com.au/>
Synonym(s) 1072 - MSDS NUMBER • PRODUCT CODE: 292 • SPECIAL GAS MIXTURE
Use(s) CALIBRATION • INDUSTRIAL APPLICATIONS
SDS Date 26 Mar 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

RISK PHRASES

R23 Toxic by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.

SAFETY PHRASES

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S44 If you feel unwell, contact a doctor or Poisons Information Centre immediately (show label where possible).
S7/9 Keep container tightly closed and in a well ventilated place.

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

UN No.	1955	DG Class	2.3	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated	Hazchem Code	2RE	EPG	2B1

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
NITRIC OXIDE	N-O	10102-43-9	0.93-4.68%
NITROGEN	N2	7727-37-9	remainder

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor, or for at least 15 minutes.
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. For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor.
Ingestion	Due to product form and application, ingestion is considered unlikely.
Advice to Doctor	Treat symptomatically
First Aid Facilities	Eye wash facilities should be available.

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. Do not approach cylinders or containers suspected of being hot.
Extinguishing	Use water fog to cool containers from protected area.
Hazchem Code	2RE

6. ACCIDENTAL RELEASE MEASURES

Spillage	If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use personal protective equipment. Carefully move material to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.
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7. STORAGE AND HANDLING

Storage	Do not store near incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders 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.
Handling	Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

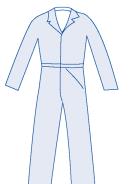
8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds	Ingredient	Reference	TWA		STEL	
			ppm	mg/m³	ppm	mg/m³
	Nitric oxide	ASCC (AUS)	25	31	--	--
	Nitrogen	ASCC (AUS)			Asphyxiant	

Biological Limits No biological limit allocated.

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 Wear safety boots, leather gloves, coveralls and safety glasses. Where an inhalation risk exists, wear: a Type NO (Nitrogen Oxides) respirator. At high vapour levels, wear: an Air-line respirator or self Contained Breathing Apparatus (SCBA).

**9. PHYSICAL AND CHEMICAL PROPERTIES**

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Appearance	COLOURLESS GAS	Solubility (Water)	REACTS
Odour	ODOURLESS	Specific Gravity	NOT APPLICABLE
pH	NOT APPLICABLE	% Volatiles	100 %
Vapour Pressure	NOT AVAILABLE	Flammability	NON FLAMMABLE
Vapour Density	NOT AVAILABLE	Flash Point	NOT RELEVANT
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT RELEVANT
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT RELEVANT
Evaporation Rate	NOT APPLICABLE		
Cylinder Pressure	13,000 kPa @ 15°C		

10. STABILITY AND REACTIVITY

Material to Avoid	Nitric oxide reacts in air to form nitrogen dioxide which is highly oxidising and reacts violently with fluorine and chlorine in the presence of moisture.
Decomposition	May evolve toxic gases if heated to decomposition.
Hazardous Reactions	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Toxic - irritant. Immediate effect is irritation of the nose and throat. Symptoms may be slight at first. Headache dizziness, lassitude, nausea and vomiting may occur in some cases. Some 6 to 24 hours after exposure further symptoms develop: lips become blue and soon breathing becomes difficult, accelerated and irregular choking, cyanosis and tightness of the chest follow and palpitations may occur. If untreated the onset of pulmonary oedema may result in death. Brief exposure to high concentrations causes sudden onset of pulmonary oedema which can be rapidly fatal. There may be some formation of methaemoglobin.
Eye	Corrosive - irritant. Contact may result in irritation, lacrimation, pain, redness, corneal burns and possible permanent damage.
Inhalation	Irritant - toxic. Results in chronic irritation of the respiratory tract in low doses.
Skin	Corrosive. Contact may result in irritation, redness, pain, rash and possible burns.
Ingestion	Ingestion is considered unlikely due to product form. However, ingestion of liquid may result in burns to the mouth and throat.
Toxicity Data	NITRIC OXIDE (10102-43-9) LC50 (Inhalation): 1068 mg/m ³ /4 hours (rat)

12. ECOLOGICAL INFORMATION

Environment	Nitrogen oxides react with volatile organic compounds to produce ozone, a principal factor in photochemical smog. Will form nitric acid in contact with water. Nitrates can persist for prolonged periods in water. Not expected to concentrate in the food chain.
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13. DISPOSAL CONSIDERATIONS

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

Transport	Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. Refer to Commonwealth, State and Territory Dangerous Goods Legislation which contain requirements which affect gas storage and transport.
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CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping Name	COMPRESSED GAS, TOXIC, N.O.S.		
UN No.	1955	DG Class	2.3
Packing Group	None Allocated	Hazchem Code	2RE

15. REGULATORY INFORMATION

Poison Schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
AICS	All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information	The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.
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APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European INventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: 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 Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as 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.

Report Status

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

It is based on information concerning the product which has been provided to RMT by the manufacturer 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.

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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Product Name

BETWEEN 0.93 TO 4.68% NITRIC OXIDE BALANCE NITROGEN

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SDS Date: 26 Mar 2010

End of Report