
1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ENTONOX (NZ)**
Synonyms PRODUCT CODE: 182

1.2 Uses and uses advised against

Uses ANALGESIC • MEDICAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name **BOC LIMITED (NEW ZEALAND)**
Address 988 Great South Road, Penrose, Auckland, NEW ZEALAND
Telephone +64 9 525 5600
Fax +64 9 525 7889
Email customer.servicenz@boc.com
Website <http://www.boc.co.nz>

1.4 Emergency telephone numbers

Emergency 0800 111 333 (NZ only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

Physical Hazards

5.1.2A - Oxidising substances that are gases

Health Hazards

6.8B - Substances that are suspected human reproductive or developmental toxicants
6.9B - Substances that are harmful to human target organs or systems: Single

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.
H361 Suspected of damaging fertility or the unborn child.
H371 May cause damage to organs.

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Prevention statements

| | |
|------|---|
| P103 | Read label before use. |
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P220 | Keep/Store away from clothing/incompatible materials/combustible materials. |
| P244 | Keep reduction valves free from grease and oil. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P281 | Use personal protective equipment as required. |

Response statements

| | |
|-------------|---|
| P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |
| P309 + P311 | IF exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician. |
| P370 + P376 | In case of fire: Stop leak if safe to do so. |

Storage statements

| | |
|------|-----------------------------------|
| P403 | Store in a well-ventilated place. |
| P405 | Store locked up. |

Disposal statements

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

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|---------------|------------|-----------|-----------|
| NITROUS OXIDE | 10024-97-2 | 233-032-0 | 48 to 52% |
| OXYGEN | 7782-44-7 | 231-956-9 | 48 to 52% |

4. FIRST AID MEASURES

4.1 Description of first aid measures

| | |
|----------------------|---|
| Eye | None required. |
| Inhalation | If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. |
| Skin | None required. |
| Ingestion | Due to product form and application, ingestion is considered unlikely. |
| First aid facilities | None allocated. |

4.2 Most important symptoms and effects, both acute and delayed

Non-toxic and non-irritating. An analgesic and a weak anaesthetic. May result in central nervous system effects such as euphoria and pain reduction.

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.

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5.4 Hazchem code

2S
2 Fine Water Spray.
S Risk of violent reaction or explosion. 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.

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

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

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

Use of safe work practices are recommended to avoid 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.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 65°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.

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 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 gloves. |
| Body | Wear safety boots. |
| 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 | SLIGHT SWEET ODOUR |
| Flammability | NON FLAMMABLE |
| Flash point | NOT RELEVANT |
| Boiling point | -88°C |
| Melting point | NOT AVAILABLE |
| Evaporation rate | NOT APPLICABLE |
| pH | NOT APPLICABLE |
| Vapour density | 1.6 (Air = 1) |
| Relative density | NOT APPLICABLE |
| Solubility (water) | 0.1 % |
| Vapour pressure | 12000 kPa @ 15°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 | OXIDISING GAS |
| Odour threshold | NOT AVAILABLE |

9.2 Other information

| | |
|-------------|-------|
| % Volatiles | 100 % |
|-------------|-------|

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

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 nitrogen oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met. Nitrous oxide passes into all gas containing spaces in the body faster than nitrogen passes out, thus it should not be used with any condition where its expansion might be dangerous. May induce vomiting in susceptible individuals.

Information available for the ingredients:

| Ingredient | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---------------|-----------|-------------|------------------------------|
| NITROUS OXIDE | -- | -- | 1068 mg/m ³ (rat) |

Skin Not classified as a skin irritant.

Eye Not classified as an eye irritant.

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| | |
|---------------------------------|---|
| Sensitisation | Not classified as causing skin or respiratory sensitisation. |
| Mutagenicity | Not classified as a mutagen. |
| Carcinogenicity | Not classified as a carcinogen. |
| Reproductive | Reduced fertility in healthcare personnel has been reported where they have been repeatedly exposed to levels of nitrous oxide above the specified occupational exposure limits in inadequately ventilated rooms. There is no documented evidence to confirm or exclude the existence of any causal connection between these cases and exposure to nitrous oxide. |
| STOT - single exposure | Anaesthetic gas. May have short term effects on the central nervous system, including euphoria and anxiolytic and analgesic effects. |
| STOT - repeated exposure | Chronic exposure to nitrous oxide can result in some symptoms of pernicious anaemia: Megaloblastic bone-marrow depression or peripheral and central neuropathy (tingling, numbness, impairment of equilibrium, difficulty in thinking clearly). |
| Aspiration | Not classified as causing aspiration. |

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No information provided.

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 ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA**

| | LAND TRANSPORT (NZS 5433) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|--------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 14.1 UN Number | 3156 | 3156 | 3156 |
| 14.2 Proper Shipping Name | COMPRESSED GAS, OXIDIZING, N.O.S. | COMPRESSED GAS, OXIDIZING, N.O.S. | COMPRESSED GAS, OXIDIZING, N.O.S. |
| 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

Not a Marine Pollutant.

14.6 Special precautions for user

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| | |
|--------------------------|--|
| Hazchem code | 2S |
| EmS | F-C, S-W |
| Other information | Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. |

15. REGULATORY INFORMATION

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

| | |
|---------------------------|--|
| Approval code | HSR002534 |
| Group standard | Compressed Gases (Oxidising) Group Standard 2006 |
| Inventory listings | NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt. |

16. OTHER INFORMATION

Additional information APPLICATION METHOD: Gas regulator and demand flow control to mask or mouthpiece.

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 |
| CCID | Chemical Classification and Information Database (HSNO) |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| EPA | Environmental Protection Authority [New Zealand] |
| GHS | Globally Harmonized System |
| HSNO | Hazardous Substances and New Organisms |
| 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) |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

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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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