BOC
A Member of The Linde Group

# SAFETY DATA SHEET

**# 2215**

**Product Name** **2 COMPONENT MIXTURE (NO2 IN AIR)**

## 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)** | 2215 - MSDS NUMBER · SPECIAL GAS MIXTURE |
| **Use(s)** | CALIBRATION · INDUSTRIAL APPLICATIONS |
| **SDS Date** | 26 April 2012 |

## 2. HAZARDS IDENTIFICATION

**CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA**

**RISK PHRASES**

| | |
|---|---|
| R20 | Harmful by inhalation. |

**SAFETY PHRASES**

| | |
|---|---|
| S9 | Keep container in a well ventilated place. |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |
| S28 | After contact with skin, wash immediately with plenty of water. |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S45 | In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). |

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

| | | | |
|---|---|---|---|
| **UN Number** | 1956 | **DG Division** | 2.2 |
| **Packing Group** | None Allocated | **Subsidiary Risk(s)** | None Allocated |
| **Hazchem Code** | 2TE | | |

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

| Ingredient | Identification | Classification | Content |
|---|---|---|---|
| NITROGEN DIOXIDE | CAS: 10102-44-0<br>EC: 233-272-6 | T+;R26 C;R34 O;R8 | 0.12% |
| AIR | Not Available | Not Available | Remainder |

## 4. FIRST AID MEASURES

| | |
|---|---|
| **Eye** | If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, 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). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available. For advice, contact a Poison 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 or a doctor.

**Ingestion** Due to product form and application, ingestion is considered unlikely.

**Advice to Doctor** Management of pulmonary oedema. Treat eye and skin burns as corrosive. Methaemoglobin may be used as a biological monitor.

## 5. FIRE FIGHTING MEASURES

**Flammability** Non flammable.

**Fire and Explosion** Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Do not approach cylinders. Use waterfog to cool intact containers and nearby storage areas.

**Extinguishing** Use water fog to cool containers from protected area.

**Hazchem Code** 2TE

| | |
|---|---|
| 2 | Water Fog (or fine water spray if fog unavailable) |
| T | Self Contained Breathing apparatus and protective gloves. |
| E | Evacuation of people in the vicinity of the incident should be considered. |

## 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.

## 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 Standards**

| Ingredient | Reference | TWA | | STEL | |
|---|---|---|---|---|---|
| | | ppm | mg/m³ | ppm | mg/m³ |
| Nitrogen dioxide | SWA (AUS) | 3 | 5.6 | 5 | 9.4 |

**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**

**Eye / Face** Wear safety glasses.

**Hands** Wear leather gloves.

**Body** Wear safety boots.

**Respiratory** Where an inhalation risk exists, wear an Air-line respirator or a Type NO (Nitrogen Oxides) respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance** | BROWN COLOURED GAS |
| **Odour** | PUNGENT ODOUR |
| **Flammability** | NON FLAMMABLE |
| **Flash point** | NOT RELEVANT |
| **Boiling point** | NOT AVAILABLE |
| **Melting point** | NOT AVAILABLE |
| **Evaporation rate** | NOT APPLICABLE |
| **pH** | NOT APPLICABLE |
| **Vapour density** | NOT AVAILABLE |
| **Specific gravity** | NOT APPLICABLE |
| **Solubility (water)** | NOT AVAILABLE |
| **Vapour pressure** | NOT AVAILABLE |
| **Upper explosion limit** | NOT RELEVANT |
| **Lower explosion limit** | NOT RELEVANT |
| **% Volatiles** | 100 % |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Chemical Stability** | Stable under recommended conditions of storage. |
| **Conditions to Avoid** | Avoid heat, sparks, open flames and other ignition sources. |
| **Material to Avoid** | Nitrogen dioxide is highly oxidising and reacts violently with fluorine and chlorine in the presence of moisture. |
| **Hazardous Decomposition Products** | May evolve toxic gases if heated to decomposition. |
| **Hazardous Reactions** | Polymerization will not occur. |

## 11. TOXICOLOGICAL INFORMATION

**Health Hazard Summary**

Toxic - irritant. This product has the potential to cause adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Nitrogen dioxide forms corrosive nitric acid upon contact with moist surfaces. Nitrogen dioxide is reported to be dangerous at concentrations of 100 ppm and fatal at 200 ppm and is moderately toxic with chronic exposure. Chronic exposure to this product may lead to fibrotic changes in the lungs. Possible production of methaemoglobinemia may lead to drowsiness, dizziness and vomiting.

**Eye**

Irritant. Contact may result in irritation. Contact lenses should not be worn when using this product.

**Inhalation**

Irritant - toxic. Over exposure may result in irritation of the nose and throat, coughing, dizziness and headache. High level exposure may result in weakness, pain, cyanosis (bluish/grey appearance), breathing difficulties, lung inflammation and pulmonary oedema which may be fatal.

**Skin**

Irritant. Contact may result in irritation.

**Ingestion**

Ingestion is considered unlikely due to product form.

**Toxicity Data**

NITROGEN DIOXIDE (10102-44-0)

| | |
|---|---|
| LC50 (inhalation) | 88 ppm/4 hours (rat) |
| LCLo (inhalation) | 200 ppm/1 minute (human) |
| TCLo (inhalation) | 6200 ppb/10 minutes (man) |

## 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.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal**

Return cylinder and contents to manufacturer or supplier for recycling. Contact the manufacturer for additional information.

**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) |
|---|---|---|---|
| **UN Number** | 1956 | - | - |
| **Proper Shipping Name** | COMPRESSED GAS, N.O.S. | - | - |
| **DG Class/ Division** | 2.2 | - | - |
| **Subsidiary Risk(s)** | None Allocated | - | - |
| **Packing Group** | None Allocated | - | - |
| **GTEPG** | 2C1 | | |
| **Hazchem Code** | 2TE | | |

**Other Information** 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.

## 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 Medicines and Poisons (SUSMP)

**Inventory Listing(s)** **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

## 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.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this ChemAlert 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.

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 ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Product Name** **2 COMPONENT MIXTURE (NO2 IN AIR)**

**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 |
| GHS | Globally Harmonized System |
| IARC | International Agency for Research on Cancer |
| $mg/m^3$ | Milligrams per Cubic Metre |
| PEL | Permissible Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| REACH | Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals |
| 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 |
| TLV | Threshold Limit Value |
| TWA/OEL | Time Weighted Average or Occupational Exposure Limit |

**Revision History**

| Revision | Description |
|---|---|
| 1.0 | Standard SDS Review. |

**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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**Revision:** 1
**SDS Date:** 26 April 2012

## End of SDS