

## SAFETY DATA SHEET

# 1103

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Product name** BETWEEN 2.25 AND 9.86% SULPHUR DIOXIDE BALANCE NITROGEN  
**Synonym(s)** 1103 - SDS NUMBER • PRODUCT CODE: 292 • SPECIAL GAS MIXTURE

#### 1.2 Uses and uses advised against

**Use(s)** CALIBRATION • INDUSTRIAL APPLICATIONS

#### 1.3 Details of the supplier of the product

**Supplier name** BOC LIMITED (AUSTRALIA)  
**Address** 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA  
**Telephone** 131 262, (02) 8874 4400  
**Fax** 132 427 (24 hours)  
**Website** <http://www.boc.com.au>

#### 1.4 Emergency telephone number(s)

**Emergency** 1800 653 572 (24/7) (Australia only)

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO AUSTRALIAN WHS REGULATIONS

**GHS classification(s)** Gases Under Pressure: Compressed gas  
Skin Corrosion/Irritation: Category 1B  
Acute Toxicity: Inhalation: Category 4

#### 2.2 Label elements

**Signal word** DANGER

**Pictogram(s)**



#### Hazard statement(s)

H280 Contains gas under pressure; may explode if heated.  
H314 Causes severe skin burns and eye damage.  
H332 Harmful if inhaled.

#### Prevention statement(s)

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**PRODUCT NAME BETWEEN 2.25 AND 9.86% SULPHUR DIOXIDE BALANCE NITROGEN****Response statement(s)**

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P321 Specific treatment is advised - see first aid instructions.  
P363 Wash contaminated clothing before reuse.

**Storage statement(s)**

P405 Store locked up.  
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

**Disposal statement(s)**

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

**2.3 Other hazards**

Asphyxiant. Effects are proportional to oxygen displacement.

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**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

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**3.1 Substances / Mixtures**

| Ingredient      | CAS Number | EC Number | Content (v/v) |
|-----------------|------------|-----------|---------------|
| SULPHUR DIOXIDE | 7446-09-5  | 231-195-2 | 2.25 to 9.86% |
| NITROGEN        | 7727-37-9  | 231-783-9 | Remainder     |

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**4. FIRST AID MEASURES**

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**4.1 Description of 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.

**First aid facilities** No information provided.

**4.2 Most important symptoms and effects, both acute and delayed**

Causes severe skin burns and eye damage. Irritating to the upper and lower respiratory tract. May have fatal consequences as a result of spasm, inflammation and oedema of the larynx and bronchi, chemical pneumonitis and pulmonary oedema.

**4.3 Immediate medical attention and special treatment needed**

Treat symptomatically. Adrenaline may be useful in presence of bronchospasm.

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**5. FIRE FIGHTING MEASURES**

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**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

2TE

2 Fine Water Spray.

T Wear full fire kit 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

### 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 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.

### 7.2 Conditions for safe storage, including any incompatibilities

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.

### 7.3 Specific end use(s)

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Exposure standards

| Ingredient      | Reference | TWA        |                   | STEL |                   |
|-----------------|-----------|------------|-------------------|------|-------------------|
|                 |           | ppm        | mg/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |
| Nitrogen        | SWA (AUS) | Asphyxiant |                   |      |                   |
| Sulphur dioxide | SWA (AUS) | 2          | 5.2               | 5    | 13                |

### Biological limits

No biological limit values have been entered for this product.

### 8.2 Exposure controls

**Engineering controls** Provide suitable ventilation to minimise or eliminate exposure. Confined areas (e.g. tanks) should be adequately ventilated or gas tested. Maintain vapour levels below the recommended exposure standard.

**PPE**

|                    |                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye / Face</b>  | Wear safety glasses.                                                                                                                         |
| <b>Hands</b>       | Wear leather gloves.                                                                                                                         |
| <b>Body</b>        | Wear coveralls and safety boots.                                                                                                             |
| <b>Respiratory</b> | Wear a Type E (Sulphur dioxide) respirator. At high vapour levels, 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

|                                  |                                |
|----------------------------------|--------------------------------|
| <b>Appearance</b>                | COLOURLESS GAS                 |
| <b>Odour</b>                     | PUNGENT IRRITATING ODOUR       |
| <b>Flammability</b>              | NON FLAMMABLE                  |
| <b>Flash point</b>               | NOT RELEVANT                   |
| <b>Boiling point</b>             | NOT AVAILABLE                  |
| <b>Melting point</b>             | NOT AVAILABLE                  |
| <b>Evaporation rate</b>          | NOT APPLICABLE                 |
| <b>pH</b>                        | NOT APPLICABLE                 |
| <b>Vapour density</b>            | NOT AVAILABLE                  |
| <b>Specific gravity</b>          | NOT APPLICABLE                 |
| <b>Solubility (water)</b>        | 0.1128 kg/kg (Sulphur dioxide) |
| <b>Vapour pressure</b>           | NOT AVAILABLE                  |
| <b>Upper explosion limit</b>     | NOT RELEVANT                   |
| <b>Lower explosion limit</b>     | NOT RELEVANT                   |
| <b>Partition coefficient</b>     | NOT AVAILABLE                  |
| <b>Autoignition temperature</b>  | NOT AVAILABLE                  |
| <b>Decomposition temperature</b> | NOT AVAILABLE                  |
| <b>Viscosity</b>                 | NOT AVAILABLE                  |
| <b>Explosive properties</b>      | NOT AVAILABLE                  |
| <b>Oxidising properties</b>      | NOT AVAILABLE                  |
| <b>Odour threshold</b>           | NOT AVAILABLE                  |

### 9.2 Other information

|                             |                  |
|-----------------------------|------------------|
| <b>Critical temperature</b> | 13000 kPa @ 15°C |
| <b>% Volatiles</b>          | 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 shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Incompatible (violently) with strong alkalis and acids. Corrodes most materials when moist.

### 10.6 Hazardous decomposition products

This material will not decompose to form hazardous products other than that already present.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

|                                 |                                                                                                                                                                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acute toxicity</b>           | Harmful if inhaled. Gas and liquid are extremely irritating and corrosive. May have fatal consequences as a result of spasm, inflammation and oedema of the larynx and bronchi, chemical pneumonitis and pulmonary oedema.                                       |
|                                 | SULPHUR DIOXIDE<br>LC50 (Inhalation): 2520 ppm / 1 hour (rat)                                                                                                                                                                                                    |
| <b>Skin</b>                     | Causes burns. Contact may result in irritation, redness, pain, rash, dermatitis and possible burns.                                                                                                                                                              |
| <b>Eye</b>                      | Causes severe burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible permanent eye damage.                                                                                                                          |
| <b>Sensitization</b>            | Not classified as causing skin sensitisation. Some animal studies have shown that exposure to low levels of sulphur dioxide can cause allergic respiratory responses.                                                                                            |
| <b>Mutagenicity</b>             | Not classified as a mutagen.                                                                                                                                                                                                                                     |
| <b>Carcinogenicity</b>          | Not classified as a carcinogen.                                                                                                                                                                                                                                  |
| <b>Reproductive</b>             | Some studies have detected effects on the reproductive performance of animals exposed to sulphur dioxide.                                                                                                                                                        |
| <b>STOT – single exposure</b>   | Over exposure may result in mucous membrane irritation of the respiratory tract, coughing and possible burns. High level exposure may result in ulceration of the respiratory tract, breathing difficulties, chemical pneumonitis and pulmonary oedema.          |
| <b>STOT – repeated exposure</b> | Effects caused by chronic exposure to sulphur dioxide occur are a result of irritation of the mucous membranes of the upper respiratory gastro-intestinal tract. Chronic bronchic emphysema, chronic conjunctivitis and dental degradation have been documented. |
| <b>Aspiration</b>               | 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

Sulphur dioxide in air is oxidised to sulphuric acid, which is a major component of acid rain. Acid rain has been associated with accelerated leaching of heavy metals from plumbing systems and generally fixed sites such as insoluble deposits and ores, and with bioaccumulation of heavy metals, especially mercury, in fish. Sulphur dioxide is harmful to aquatic life in very low concentrations.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

|                       |                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------|
| <b>Waste disposal</b> | Cylinders should be returned to the manufacturer or supplier for disposal of contents. |
| <b>Legislation</b>    | 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<br>(ADG)                       | SEA TRANSPORT<br>(IMDG / IMO)                 | AIR TRANSPORT<br>(IATA / ICAO)                |
|------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <b>14.1 UN Number</b>              | 1956                                          | 1956                                          | 1956                                          |
| <b>14.2 Proper Shipping Name</b>   | COMPRESSED GAS, N.O.S.<br>(Contains nitrogen) | COMPRESSED GAS, N.O.S.<br>(Contains nitrogen) | COMPRESSED GAS, N.O.S.<br>(Contains nitrogen) |
| <b>14.3 Transport hazard class</b> | 2.2                                           | 2.2                                           | 2.2                                           |
| <b>14.4 Packing Group</b>          | None Allocated                                | None Allocated                                | None Allocated                                |

**14.5 Environmental hazards** No information provided

**14.6 Special precautions for user**

Hazchem code 2TE  
GTEPG 2C1  
EMS F-C, S-V

**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**

**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** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

**Hazard codes** C Corrosive  
Xn Harmful

**Risk phrases** R20 Harmful by inhalation.  
R34 Causes burns.

**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  
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).

**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.

**APPLICATION METHOD:** Gas withdrawal: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment. Liquid withdrawal with flow and pressure control through vapouriser or direct to specialised equipment.

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this 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.

**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 <sup>3</sup> | 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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