

## SAFETY DATA SHEET

# 2021

Product Name **LESS THAN 1.2% PHOSPHINE, 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)** 2021 - MSDS NUMBER · PRODUCT CODES: 285, 288 · 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

S28 After contact with skin, wash immediately with plenty of water.  
S36/37 Wear suitable protective clothing and gloves.  
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).  
S63 In case of accident by inhalation, remove casualty to fresh air and keep at rest.

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

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

### 3. COMPOSITION/ INFORMATION ON INGREDIENTS

| Ingredient | Identification                  | Classification                  | Content   |
|------------|---------------------------------|---------------------------------|-----------|
| PHOSPHINE  | CAS: 7803-51-2<br>EC: 232-260-8 | F+;R12 F;R17 T+;R26 C;R34 N;R50 | <1.2%     |
| NITROGEN   | CAS: 7727-37-9<br>EC: 231-783-9 | 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.

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**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** Treat symptomatically.

## 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. 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.

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

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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** 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/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |
| Nitrogen   | SWA (AUS) | Asphyxiant |                   |      |                   |
| Phosphine  | SWA (AUS) | 0.3        | 0.42              | 1    | 1.4               |

**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 cotton or 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

|                           |                       |
|---------------------------|-----------------------|
| Appearance                | COLOURLESS GAS        |
| Odour                     | ROTTEN FISH 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            | 1.18 (Phosphine)      |
| Specific gravity          | NOT APPLICABLE        |
| Solubility (water)        | 0.0149 L/L (Nitrogen) |
| Vapour pressure           | NOT AVAILABLE         |
| Upper explosion limit     | NOT RELEVANT          |
| Lower explosion limit     | NOT RELEVANT          |
| Autoignition temperature  | NOT AVAILABLE         |
| Decomposition temperature | NOT AVAILABLE         |
| Viscosity                 | NOT AVAILABLE         |
| Partition coefficient     | NOT AVAILABLE         |
| % Volatiles               | 100 %                 |

## 10. STABILITY AND REACTIVITY

|                                  |                                                                                            |
|----------------------------------|--------------------------------------------------------------------------------------------|
| Chemical Stability               | Stable under recommended conditions of storage.                                            |
| Conditions to Avoid              | Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources. |
| Material to Avoid                | Compatible with most commonly used materials. Avoid heating cylinders.                     |
| Hazardous Decomposition Products | May evolve toxic gases if heated to decomposition.                                         |
| Hazardous Reactions              | Polymerization will not occur.                                                             |

## 11. TOXICOLOGICAL INFORMATION

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Health Hazard Summary | Asphyxiant gas - irritant. May replace oxygen in the inhaled air and cause asphyxiation. As the amount of oxygen inhaled is reduced from 21-14% volume, the pulse rate may accelerate and the rate and volume of breathing may increase. The ability to maintain attention and think clearly is diminished, muscular co-ordination is somewhat disturbed. As oxygen decreases from 14-10% volume, judgement becomes faulty, severe injuries may result in no pain. Muscular effort may lead to rapid fatigue. Further reduction to 6% may result in nausea and vomiting. Ability to move may be lost. Permanent brain damage may result even after resuscitation from exposure to this low level of oxygen. Below 6% breathing is in gasps and convulsions may occur. Inhalation of a mixture containing no oxygen may result in unconsciousness from the first breath and death may follow in minutes. |  |
| Eye                   | Irritant vapour. Injury to eyes may occur if wearing contact lenses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| Inhalation            | Irritant - asphyxiant. Effects are proportional to oxygen displacement. Overexposure to silica may result in silicosis, a fibrosis of the lungs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| Skin                  | Irritating vapour. Contact may result in irritation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| Ingestion             | Ingestion is considered unlikely due to product form.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Toxicity Data         | <b>PHOSPHINE (7803-51-2)</b><br>LC50 (inhalation) 11ppm/4 hours (rat)<br>LCLo (inhalation) 1000ppm/5min (human)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |

## 12. ECOLOGICAL INFORMATION

|             |                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment | Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment. |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 13. DISPOSAL CONSIDERATIONS

|                |                                                                                        |
|----------------|----------------------------------------------------------------------------------------|
| Waste Disposal | Cylinders should be returned to the manufacturer or supplier for disposal of contents. |
|----------------|----------------------------------------------------------------------------------------|

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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<br>(ADG)                                                                                                                                                                                                                | SEA TRANSPORT<br>(IMDG / IMO) | AIR TRANSPORT<br>(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      | Classified as a Schedule 7 (S7) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).                     |
| Inventory Listing(s) | <b>AUSTRALIA: AICS (Australian Inventory of Chemical Substances)</b><br>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.

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|                      |                   |                                                                                                 |
|----------------------|-------------------|-------------------------------------------------------------------------------------------------|
| <b>Abbreviations</b> | 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 <sup>3</sup> | 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.

**Prepared By**

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**SDS Date:** 26 April 2012

**End of SDS**