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## MATERIAL SAFETY DATA SHEET

# 1535

PRODUCT NAME **4 COMPONENT MIXTURE (C2H2, C2H4, CH4, BALANCE N2)**

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Supplier Name** BOC LIMITED (AUSTRALIA)  
**Address** 10 Julius Avenue, North Ryde, NSW, AUSTRALIA, 2113  
**Telephone** +61 131 262, (02) 8874 4400  
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**Emergency** 1800 653 572 (24/7) (Australia only)  
**Web Site** <http://www.boc.com.au/>  
**Synonym(s)** 1535 - MSDS NUMBER • PRODUCT CODES: 285, 288 • SPECIAL GAS MIXTURE  
**Use(s)** CALIBRATION • INDUSTRIAL APPLICATIONS  
**MSDS Date** 28 June 2007

### 2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA

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

<b>UN No.</b>	1956	<b>DG Class</b>	2.2	<b>Subsidiary Risk(s)</b>	None Allocated
<b>Pkg Group</b>	None Allocated	<b>Hazchem Code</b>	2T	<b>EPG</b>	2C1

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
ACETYLENE	C2-H2	74-86-2	<1.0E-4%
ETHYLENE	C2-H4	74-85-1	<1.0E-4%
METHANE	C-H4	74-82-8	1.0E-4%
NITROGEN	N2	7727-37-9	remainder

### 4. FIRST AID MEASURES

**Eye** Exposure is considered unlikely.

**Inhalation** Remove from area of exposure immediately. If assisting a victim avoid becoming a casualty, wear an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. If victim is not breathing apply artificial respiration and seek urgent medical attention. Give oxygen if available. Keep warm and rested.

**Skin** Exposure is considered unlikely.

**Ingestion** For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor. Due to product form and application, ingestion is considered unlikely.

**Advice to Doctor** Treat symptomatically

# PRODUCT NAME 4 COMPONENT MIXTURE (C<sub>2</sub>H<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>, CH<sub>4</sub>, BALANCE N<sub>2</sub>)

## 5. FIRE FIGHTING MEASURES

<b>Flammability</b>	Non flammable.
<b>Fire and Explosion</b>	Non flammable. Temperatures in a fire may cause cylinders to rupture. Call fire brigade. Cool cylinders exposed to fire by applying water from a protected location. Do not approach cylinders suspected of being hot.
<b>Extinguishing</b>	Non flammable. Use water fog to cool containers from protected area.
<b>Hazchem Code</b>	2T

## 6. ACCIDENTAL RELEASE MEASURES

<b>Spillage</b>	GAS CYLINDERS: If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and carefully move it 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

<b>Storage</b>	Do not store near sources of ignition or 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.
<b>Handling</b>	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

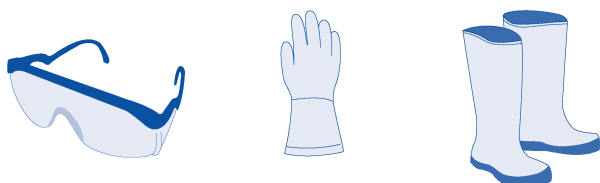
## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure Standards</b>	ACETYLENE (74-86-2) ES-TLV (ACGIH): Simple asphyxiant ES-TWA: Simple asphyxiant WES-TWA: Simple asphyxiant ETHYLENE (74-85-1) ES-TWA: Asphyxiant WES-TWA: Asphyxiant METHANE (74-82-8) ES-TWA: 1000 ppm (ACGIH) ES-TWA#: Asphyxiant - No values assigned (NOHSC) NITROGEN (7727-37-9) ES-TWA: Asphyxiant - No values assigned
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**Biological Limit Values** No biological limit allocated.

**Engineering Controls** Maintain adequate ventilation. Confined areas (eg. tanks) should be adequately ventilated or gas tested.

**PPE** Wear safety boots, leather gloves and safety glasses. When using large quantities or where heavy contamination is likely, wear coveralls. Where an inhalation risk exists, wear an Air-line respirator or self Contained Breathing Apparatus (SCBA).



## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	COLOURLESS GAS	<b>Solubility (water)</b>	NOT AVAILABLE
<b>Odour</b>	SWEET ODOUR	<b>Specific Gravity</b>	NOT AVAILABLE
<b>pH</b>	NOT AVAILABLE	<b>% Volatiles</b>	NOT AVAILABLE
<b>Vapour Pressure</b>	NOT AVAILABLE	<b>Flammability</b>	NON FLAMMABLE
<b>Vapour Density</b>	NOT AVAILABLE	<b>Flash Point</b>	NOT RELEVANT

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<b>Boiling Point</b>	NOT AVAILABLE	<b>Upper Explosion Limit</b>	NOT RELEVANT
<b>Melting Point</b>	NOT AVAILABLE	<b>Lower Explosion Limit</b>	NOT RELEVANT
<b>Evaporation Rate</b>	NOT AVAILABLE	<b>Autoignition Temperature</b>	NOT AVAILABLE
<b>Cylinder pressure (when full)</b>	13,000 kPa @ 15°C		

## 10. STABILITY AND REACTIVITY

<b>Material to Avoid</b>	Compatible with most commonly used materials. Avoid heating cylinders Ethylene explodes spontaneously when mixed with chlorine in sunlight. Also reacts vigorously with oxidising agents.
<b>Decomposition</b>	May evolve toxic gases if heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

<b>Health Hazard Summary</b>	Asphyxiant gas. Symptoms of exposure are directly related to displacement of oxygen from air. As the amount of oxygen inhaled is reduced from 21-14% volume, the pulse rate will accelerate and the rate and volume of breathing will 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 cause no pain. Muscular effort lead to rapid fatigue. Further reduction to 6% may cause 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 will follow in minutes.
<b>Eye</b>	Non irritating.
<b>Inhalation</b>	Non irritating - Asphyxiant. Effects are proportional to oxygen displacement.
<b>Skin</b>	Non irritating.
<b>Ingestion</b>	Due to product form, ingestion is considered highly unlikely.
<b>Toxicity Data</b>	ETHYLENE (74-85-1) LC50 (Inhalation): 95 ppm/2 hour

## 12. ECOLOGICAL INFORMATION

<b>Environment</b>	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.
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## 13. DISPOSAL CONSIDERATIONS

<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

<b>Transport</b>	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. Keep locked up and out of reach of children.
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### CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

<b>Shipping Name</b>	COMPRESSED GAS, N.O.S.				
<b>UN No.</b>	1956	<b>DG Class</b>	2.2	<b>Subsidiary Risk(s)</b>	None Allocated
<b>Pkg Group</b>	None Allocated	<b>Hazchem Code</b>	2T	<b>EPG</b>	2C1

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## 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** APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

### ABBREVIATIONS:

mg/m<sup>3</sup> - Milligrams per cubic metre

ppm - Parts Per Million

TWA/ES - Time Weighted Average or Exposure Standard.

CNS - Central Nervous System

NOS - Not Otherwise Specified

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.

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

M - moles per litre, a unit of concentration.

IARC - International Agency for Research on Cancer.

### 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.

### 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.

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

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 MSDS, 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 MSDS.

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**MSDS Date:** 28 June 2007

**End of Report**