BOC Limited
ABN 95 000 029 729
10 Julius Avenue
NORTH RYDE NSW 2113
Tel +61 131 262
Fax +61 1300 728 990

MATERIAL SAFETY DATA SHEET

Product Name **3 COMPONENT MIXTURE (AR, HE, BALANCE CH4)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde NSW, 2113, AUSTRALIA
Telephone +61 131 262, (02) 8874 4400
Fax +61 132 427 (24 hours)
Emergency 1800 658 278 (A/H) (Australia only)

Synonyms PRODUCT CODE: 285, 288, SPECIAL GAS MIXTURE.

Uses CALIBRATION, INDUSTRIAL APPLICATIONS.

2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA
CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
HELIUM	He	0.005%	7440-59-7
ARGON	Ar	0.005%	7440-37-1
METHANE	C-H4	Remainder	74-82-8

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 Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor. Ingestion is considered unlikely due to product form.

Advice To Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability Highly flammable. Heating to decomposition produces acrid smoke and irritating fumes. Product will add fuel to a fire. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

Colour Rating AMBER

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5. FIRE FIGHTING MEASURES cont.

Fire and Explosion Highly flammable. Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Call fire brigade. This product will add fuel to a fire. Cool cylinders exposed to fire by applying water from a protected location. Do not approach cylinders suspected of being hot.

Extinguishing Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur. Await arrival of emergency services or manufacturer's advisor. Drench and cool cylinders with water spray from protected area at a safe distance. If it is absolutely necessary to extinguish the flame, use only a dry chemical powder extinguisher. Do not move cylinders for at least 24 hours. Avoid shock and bumps to cylinders.

Hazchem Code 2SE

6. ACCIDENTAL RELEASE MEASURES

Spillage 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.

7. HANDLING AND STORAGE

Handling 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 (eg. if container is damaged).

Storage 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation Maintain adequate ventilation. Confined areas (eg. tanks) should be adequately ventilated or gas tested. Maintain vapour levels below the recommended exposure standard.

Exposure Standards

HELIUM (7440-59-7)
ES-TWA : Asphyxiant
WES-TWA : Asphyxiant

ARGON (7440-37-1)
ES-TWA : Asphyxiant
WES-TWA : Asphyxiant

METHANE (74-82-8)
ES-TWA : 1000 ppm (ACGIH)
ES-TWA# : Asphyxiant - No values assigned (NOHSC)
WES-TWA : Asphyxiant

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION cont.

PPE Wear safety glasses, safety boots and leather gloves. Where an inhalation risk exists, wear an Air-line respirator or Self Contained Breathing Apparatus (SCBA).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	COLOURLESS GAS
Odour:	ODOURLESS
pH:	NOT AVAILABLE
Vapour Pressure:	NOT AVAILABLE
Vapour Density:	NOT AVAILABLE
Boiling Point:	NOT AVAILABLE
Melting Point:	NOT AVAILABLE
Evaporation Rate:	NOT AVAILABLE
Solubility (water):	INSOLUBLE
Specific Gravity:	NOT AVAILABLE
% Volatiles:	NOT AVAILABLE
Flammability:	HIGHLY FLAMMABLE
Flash Point:	NOT AVAILABLE
Upper Explosion Limit:	15 % (Methane)
Lower Explosion Limit:	5.3 % (Methane)
Autoignition Temperature:	537 C (Methane)
Cylinder pressure (when full):	11000 kPa @ 15 C

10. STABILITY AND REACTIVITY

Reactivity Incompatible with oxidising agents, acids, heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides.

Decomposition Products Heating to decomposition produces acrid smoke and irritating fumes.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary 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.

Eye Non irritating.

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11. TOXICOLOGICAL INFORMATION cont.

Inhalation Non irritating - Asphyxiant. Effects are proportional to oxygen displacement.

Skin Non irritating.

Ingestion Due to product form, ingestion is considered highly unlikely.

12. ECOLOGICAL INFORMATION

Environment No known ecological damage is caused by this product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Cylinders should be returned to the manufacturer or supplier for disposal.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Transport 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.

UN Number 1954
Shipping Name COMPRESSED GAS, FLAMMABLE, N.O.S.
DG Class 2.1
Subsidiary Risk(s) None Allocated
Packing Group None Allocated
Hazchem Code 2SE

15. REGULATORY INFORMATION

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

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).

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:

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16. OTHER INFORMATION cont.

mg/m3 - 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.
COLOUR RATING SYSTEM: Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

Report Reviewed 8th March 2006

Date Printed 20th July 2006

Report Status Chem Alert reports are compiled as an independent source of information by RMT's scientific department. The information is based on the latest chemical and toxicological research, and in compliance with relevant standards, guidance notes and legislation (where applicable). The Chem Alert report is not intended as a replacement to the manufacturer's original MSDS that is provided to Chem Alert subscribers for convenience. In many instances, Chem Alert reports are compiled on behalf of manufacturers, in which case they serve as the "Manufacturer's MSDS" and are clearly identified as such on the relevant reports.

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Colour Rating AMBER

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