

SAFETY DATA SHEET

2429

Product Name **8 COMPONENT MIXTURE (CH₄, CO, CO₂, H₂, N₂, NE, O₂, BALANCE HELIUM)**

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) 2429 - MSDS NUMBER • PRODUCT CODE: 285, 288 • SPECIAL GAS MIXTURE
Use(s) CALIBRATION • INDUSTRIAL APPLICATIONS
SDS Date 20 Jul 2011

2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

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

UN No. 1956 **DG Class** 2.2 **Subsidiary Risk(s)** None Allocated
Packing Group None Allocated **Hazchem Code** 2TE

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content (v/v)
OXYGEN	O ₂	7782-44-7	0.0003%
CARBON MONOXIDE	C-O	630-08-0	0.0001%
HYDROGEN	H ₂	1333-74-0	0.0001%
NITROGEN	N ₂	7727-37-9	0.001%
NEON	Ne	7440-01-9	0.0004%
CARBON DIOXIDE	C-O ₂	124-38-9	0.0001%
HELIUM	He	7440-59-7	remainder

4. FIRST AID MEASURES

Eye None required.
Inhalation If inhaled, remove from contaminated area. If other than minor symptoms are displayed, seek immediate medical attention. An inhalation hazard is not anticipated under normal conditions of use. For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor.
Skin None required.
Ingestion Due to product form and application, ingestion is considered unlikely.
Advice to Doctor Treat symptomatically.

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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. Do not approach cylinders or containers suspected of being hot.
Extinguishing	Use water fog to cool containers from protected area.
Hazchem Code	2TE

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.
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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 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 Std

Ingredient	Reference	TWA		STEL	
Carbon dioxide	SWA (AUS)	5000 ppm	9000 mg/m ³	30000 ppm	54000 mg/m ³
Carbon dioxide in coal mines	SWA (AUS)	12500 ppm	22500 mg/m ³	30000 ppm	54000 mg/m ³
Carbon monoxide	SWA (AUS)	30 ppm	34 mg/m ³	--	--
Helium	SWA (AUS)	Asphyxiant			
Hydrogen	SWA (AUS)	Asphyxiant			
Neon	SWA (AUS)	Asphyxiant			
Nitrogen	SWA (AUS)	Asphyxiant			

Biological Limits

Ingredient	Reference	Determinant	Sampling Time	BEI
CARBON MONOXIDE	ACGIH BEI	Carboxyhemoglobin in blood	End of shift	3.5% of hemoglobin
	ACGIH BEI	Carbon monoxide in end-exhaled air	End of shift	20 ppm

Engineering Controls No special precautions are normally required when handling this product. Maintain vapour levels below the recommended exposure standard.

PPE Wear leather gloves, safety boots and safety glasses.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS	Solubility (water)	INSOLUBLE
Odour	ODOURLESS	Specific Gravity	NOT APPLICABLE
pH	NOT APPLICABLE	% Volatiles	100 %

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Vapour Pressure	NOT AVAILABLE	Flammability	NON FLAMMABLE
Vapour Density	NOT AVAILABLE	Flash Point	NOT RELEVANT
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT RELEVANT
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT RELEVANT
Evaporation Rate	NOT APPLICABLE		
Autoignition Temperature	NOT AVAILABLE	Cylinder Pressure	NOT AVAILABLE
Decomposition Temperature	NOT AVAILABLE	Partition Coefficient	NOT AVAILABLE
Viscosity	NOT AVAILABLE		

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	Compatible with most commonly used materials.
Hazardous Decomposition Products	May evolve toxic gases if heated to decomposition.
Hazardous Reactions	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Non toxic gas. As the amount of oxygen inhaled is increased, chest tightness, burning pains and coughing spasms may occur. Other symptoms of hyperoxia include cramps, nausea, dizziness, hypothermia, amblyopia (loss of vision), bradycardia, fainting spells and convulsions capable of causing death. Over exposure at normal or elevated pressure may result in severe thickening and scarring of lung tissues. Not carcinogenic or mutagenic.
Eye	Non irritant.
Inhalation	Non irritant. Adverse health effects are not anticipated under normal conditions of use.
Skin	Non irritant.
Ingestion	Ingestion is considered unlikely due to product form.
Toxicity Data	CARBON MONOXIDE (630-08-0) LC50 (Inhalation): 1807 ppm/4H (rat) LCLo (Inhalation): 5000 ppm/5M (human) CARBON DIOXIDE (124-38-9) LC50 (Inhalation): 470000 ppm/30M (rat) LCLo (Inhalation): 9 pph/5M (human)

12. ECOLOGICAL INFORMATION

Environment	No known ecological damage is caused by this product.
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13. DISPOSAL CONSIDERATIONS

Waste Disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents.
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.
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CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping Name	COMPRESSED GAS, N.O.S. (BALANCE HELIUM)				
UN No.	1956	DG Class	2.2	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated	Hazchem Code	2TE	GTEPG	2C1

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 The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.

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

ABBREVIATIONS:

ACGIH - American Conference of Industrial Hygienists.

ADG - Australian Dangerous Goods.

BEI - Biological Exposure Indices.

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

CNS - Central Nervous System.

EC No - European Community Number.

HSNO - Hazardous Substances and New Organisms.

IARC - International Agency for Research on Cancer.

mg/m³ - Milligrams per Cubic Metre.

NOS - Not Otherwise Specified.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

STEL - Short Term Exposure Limit.

SWA - Safe Work Australia.

TWA - Time Weighted Average.

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.

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.

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 Risk Management Technologies
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SDS Date 20 Jul 2011

End of Report