

## SAFETY DATA SHEET

**Product Name** 9 COMPONENT MIXTURE (C<sub>4</sub>H<sub>10</sub>, C<sub>4</sub>H<sub>10</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>5</sub>H<sub>12</sub>, C<sub>5</sub>H<sub>12</sub>, C<sub>5</sub>H<sub>12</sub>, C<sub>3</sub>H<sub>8</sub>, CH<sub>4</sub>, BALANCE N<sub>2</sub>)

### 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)** PRODUCT CODES: 177, 288 • SPECIAL GAS MIXTURE  
**Use(s)** CALIBRATION • INDUSTRIAL APPLICATIONS  
**SDS Date** 03 Sep 2010

### 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
METHANE	C-H <sub>4</sub>	74-82-8	1%
2,2-DIMETHYLPROPANE (NEOPENTANE)	C <sub>5</sub> -H <sub>2</sub>	463-82-1	0.5%
BUTANE	C <sub>4</sub> -H <sub>10</sub>	106-97-8	0.5%
ETHANE	C <sub>2</sub> -H <sub>6</sub>	74-84-0	0.5%
ISOBUTANE	C <sub>4</sub> -H <sub>10</sub>	75-28-5	0.5%
ISOPENTANE	C <sub>5</sub> -H <sub>12</sub>	78-78-4	0.5%
PENTANE	C <sub>5</sub> -H <sub>12</sub>	109-66-0	0.5%
PROPANE	C <sub>3</sub> -H <sub>8</sub>	74-98-6	0.5%
NITROGEN	N <sub>2</sub>	7727-37-9	95.5%

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#### 4. FIRST AID MEASURES

**Eye** None required.

**Inhalation** If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). 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** None required.

**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. 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.

#### 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 Stds

Ingredient	Reference	TWA		STEL	
Butane	SWA (AUS)	800 ppm	1900 mg/m <sup>3</sup>	--	--
Ethane	SWA (AUS)	Asphyxiant			
Isobutane	SWA (AUS)	1000 ppm	--	--	--
Methane	SWA (AUS)	Asphyxiant			
Nitrogen	SWA (AUS)	Asphyxiant			
Pentane	SWA (AUS)	600 ppm	1770 mg/m <sup>3</sup>	750 ppm	2210 mg/m <sup>3</sup>
Propane	SWA (AUS)	Asphyxiant			

**Biological Limits** No biological limit allocated.

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

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS GAS	Solubility (water)	NOT AVAILABLE
Odour	ODOURLESS	Specific Gravity	NOT APPLICABLE
pH	NOT APPLICABLE	% Volatiles	100 %
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		
Cylinder Pressure	1300 kPa @ 15°C		

## 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.
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. Symptoms of exposure are directly related to displacement of oxygen. 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	Non irritant.
Inhalation	Non irritant - Asphyxiant. Effects are proportional to oxygen displacement.
Skin	Non irritant.
Ingestion	Ingestion is considered unlikely due to product form.
Toxicity Data	2,2-DIMETHYLPROPANE (NEOPENTANE) (463-82-1) LCLo (Inhalation): 1097 g/m <sup>3</sup> /2 hours (mouse) LD50 (Intraperitoneal): 100 mg/kg (mouse) PENTANE (109-66-0) LC50 (Inhalation): 364 g/m <sup>3</sup> /4 hours (rat) LCLo (Inhalation): 325 g/m <sup>3</sup> /2 hours (mouse) LD50 (Intravenous): 446 mg/kg (mouse)

## 12. ECOLOGICAL INFORMATION

Environment	Product is not harmful to the environment.
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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.

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## 14. TRANSPORT INFORMATION

**Transport** Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.



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

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

## 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 Indice(s).

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/m<sup>3</sup> - 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 Chem Alert 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 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.

**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

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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.

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**End of Report**