

## SAFETY DATA SHEET

# 1581

Product Name **15 COMPONENT MIXTURE (BALANCE METHANE)**

### 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)** 1581 - SDS NUMBER · PRODUCT CODE: 288 · SPECIAL GAS MIXTURE  
**Use(s)** CALIBRATION · INDUSTRIAL APPLICATIONS  
**SDS Date** 07 February 2012

### 2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

#### RISK PHRASES

R12 Extremely Flammable.  
R45 May cause cancer.  
R46 May cause heritable genetic damage.

#### SAFETY PHRASES

S9 Keep container in a well ventilated place.  
S16 Keep away from sources of ignition - No smoking.  
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).  
S53 Avoid exposure - obtain special instructions before use.

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<b>UN Number</b>	1954	<b>DG Division</b>	2.1
<b>Packing Group</b>	None Allocated	<b>Subsidiary Risk(s)</b>	None Allocated
<b>Hazchem Code</b>	2SE		

### 3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	Cas No.	Content
METHANE	C-H4	74-82-8	30%
1,3-BUTADIENE	C4-H6	106-99-0	5%
1-BUTENE	C4-H8	106-98-9	5%
ACETYLENE	C2-H2	74-86-2	5%
BUTANE	C4-H10	106-97-8	5%
ETHANE	C2-H6	74-84-0	5%
ETHYLENE	C2-H4	74-85-1	5%
ISOBUTANE	C4-H10	75-28-5	5%
ISOBUTENE	C4-H8	115-11-7	5%
PROPANE	C3-H8	74-98-6	5%

**Product Name 15 COMPONENT MIXTURE (BALANCE METHANE)**

PROPYLENE	C3-H6	115-07-1	5%
TRANS-2-BUTENE	C4-H8	624-64-6	5%
CIS-2-BUTENE	C4-H8	590-18-1	5%
METHYL ACETYLENE	C3-H4	74-99-7	5%
PROPADIENE	C3-H4	463-49-0	5%

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**4. FIRST AID MEASURES**

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<b>Eye</b>	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
<b>Inhalation</b>	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.
<b>Skin</b>	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
<b>Ingestion</b>	Due to product form and application, ingestion is considered unlikely.
<b>Advice to Doctor</b>	Treat symptomatically.

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**5. FIRE FIGHTING MEASURES**

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<b>Flammability</b>	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.
<b>Fire and Explosion</b>	Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.
<b>Extinguishing</b>	Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.
<b>Hazchem Code</b>	2SE 2 Water Fog (or fine water spray if fog unavailable) S Self Contained Breathing apparatus and protective gloves. E Evacuation of people in the vicinity of the incident should be considered.

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**6. ACCIDENTAL RELEASE MEASURES**

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<b>Spillage</b>	If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Prevent spreading of vapours through drains and ventilation systems. 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**

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<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>	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. Do not drop, roll or drag cylinders. The uncontrolled release of any 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>
1,3-Butadiene	SWA (AUS)	10	22	--	--
Acetylene	SWA (AUS)	Asphyxiant			
Butane	SWA (AUS)	800	1900	--	--
Ethane	SWA (AUS)	Asphyxiant			
Ethylene	SWA (AUS)	Asphyxiant			
Isobutane	SWA (AUS)	1000	--	--	--
Methane	SWA (AUS)	Asphyxiant			
Methyl acetylene	SWA (AUS)	1000	1640	--	--
Propane	SWA (AUS)	Asphyxiant			
Propylene	SWA (AUS)	Asphyxiant			

**Biological Limits**

Ingredient	Reference	Determinant	Sampling Time	BEI
1,3-BUTADIENE	ACGIH BEI	1,2-Dihydroxy-4-(N-acetylcy steinyl)-butane in urine	End of shift	25 mg/g creatinine
	ACGIH BEI	Mixture of N-1 and N-2-(hydroxybutenyl)valine hemoglobin (Hb) adducts in blood	Not critical	2.5 pmol/g Hb

**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****Eye / Face**

Wear safety glasses.

**Hands**

Wear leather or insulated 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	MILD ODOUR
Flammability	HIGHLY FLAMMABLE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT APPLICABLE
Solubility (water)	NOT AVAILABLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	15 % (Methane)
Lower explosion limit	5.3 % (Methane)
Autoignition temperature	537°C (Methane)
Decomposition temperature	NOT AVAILABLE

**Product Name 15 COMPONENT MIXTURE (BALANCE METHANE)**

Viscosity	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
% Volatiles	100 %
Cylinder pressure (when full)	500 kPa @ 15°C

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**10. STABILITY AND REACTIVITY**

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<b>Chemical Stability</b>	Stable under recommended conditions of storage.
<b>Conditions to Avoid</b>	Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.
<b>Material to Avoid</b>	Incompatible with oxidising agents (eg. hypochlorites), acids (eg. nitric acid), heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides.
<b>Hazardous Decomposition Products</b>	Heating to decomposition produces acrid smoke and irritating fumes.
<b>Hazardous Reactions</b>	Polymerization will not occur.

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**11. TOXICOLOGICAL INFORMATION**

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<b>Health Hazard Summary</b>	Asphyxiant gas - irritant. Irritates the mucous membranes, which may result in a prickling feeling and dryness in throat, blurring of vision and nausea. Acts as an asphyxiant. At high levels anaesthetic effects may result in respiratory paralysis and death. 1,3-Butadiene is classified as probably carcinogenic to humans (IARC Group 1).	
<b>Eye</b>	Irritant vapour. Low temperature evaporating liquid can cause cold burns.	
<b>Inhalation</b>	Irritant - asphyxiant. Effects are proportional to oxygen displacement with symptoms of air hunger, rapid breathing, elevated heart rate, drowsiness and loss of mental alertness. High level exposure may result in incoordination, vomiting, mental instability, lung damage, convulsions, coma and death.	
<b>Skin</b>	Irritating vapour. Direct contact with the liquefied material or escaping compressed gas may cause frost-bite injury.	
<b>Ingestion</b>	Ingestion is considered unlikely due to product form.	
<b>Toxicity Data</b>	METHANE (74-82-8)	
	LC50 (inhalation)	326 gm/m <sup>3</sup> /2h (mouse)
	1,3-BUTADIENE (106-99-0)	
	LC50 (inhalation)	270 g/m <sup>3</sup> /2 hours (mouse)
	ACETYLENE (74-86-2)	
	LCLo (inhalation)	50pph/5M (human)
	TCLo (inhalation)	20 pph (human)
	BUTANE (106-97-8)	
	LC50 (inhalation)	658000 mg/m <sup>3</sup> /4H (rat)
	PROPANE (74-98-6)	
	LC50 (inhalation)	> 800000 ppm/15M (rat)

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**12. ECOLOGICAL INFORMATION**

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<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**

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<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.

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**14. TRANSPORT INFORMATION**

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	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN Number	1954	-	-
Proper Shipping Name	COMPRESSED GAS, FLAMMABLE, N.O.S.	-	-
DG Class/ Division	2.1	-	-
Subsidiary Risk(s)	None Allocated	-	-
Packing Group	None Allocated	-	-
GTEPG	2A1		
Hazchem Code	2SE		
Other Information	Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.		

## 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 Medicines and Poisons (SUSMP)
Inventory Listing(s)	<b>AUSTRALIA: AICS (Australian Inventory of Chemical Substances)</b> 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.
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### 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.

**Product Name**      **15 COMPONENT MIXTURE (BALANCE METHANE)**

<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.

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**Revision:** 1  
**SDS Date:** 07 February 2012

**End of SDS**