

SAFETY DATA SHEET

2868

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**1.1 Product identifier****Product name** 3 COMPONENT MIXTURE (COS, SO2, BAL CO2)**Synonym(s)** 2868 - SDS NUMBER • SPECIAL GAS MIXTURE**1.2 Uses and uses advised against****Use(s)** CALIBRATION • INDUSTRIAL APPLICATIONS**1.3 Details of the supplier of the product****Supplier name** BOC LIMITED (AUSTRALIA)**Address** 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA**Telephone** 131 262, (02) 8874 4400**Fax** 132 427 (24 hours)**Website** <http://www.boc.com.au>**1.4 Emergency telephone number(s)****Emergency** 1800 653 572 (24/7) (Australia only)**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

CLASSIFIED AS HAZARDOUS ACCORDING TO AUSTRALIAN WHS REGULATIONS

GHS classification(s) Gases Under Pressure: Compressed gas**2.2 Label elements****Signal word** WARNING**Pictogram(s)****Hazard statement(s)**

H280 Contains gas under pressure; may explode if heated.

Prevention statement(s)

None allocated.

Response statement(s)

None allocated.

Storage statement(s)

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal statement(s)

None allocated.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (v/v)
CARBONYL SULPHIDE	463-58-1	207-340-0	<0.01%
SULPHUR DIOXIDE	7446-09-5	231-195-2	<0.01%
CARBON DIOXIDE	124-38-9	204-696-9	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
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	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.
Ingestion	Due to product form and application, ingestion is considered unlikely.
First aid facilities	No information provided.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO2 cause increased respiration and headache.

4.3 Immediate medical attention and special treatment needed

Treat for asphyxia and cold burns.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog to cool containers from protected area.

5.2 Special hazards arising from the substance or mixture

Non flammable. Exposure to fire may cause containers to rupture/explode.

5.3 Advice for firefighters

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. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Ensure work area is thoroughly ventilated before re-entry.

5.4 Hazchem code

2TE

2 Fine Water Spray.

T Wear full fire kit and breathing apparatus. Dilute spill and run-off.

E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

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.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near 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.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Carbon dioxide	SWA (AUS)	5000	9000	30000	54000
Carbon dioxide in coal mines	SWA (AUS)	12500	22500	30000	54000
Sulphur dioxide	SWA (AUS)	2	5.2	5	13

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or cotton gloves.
Body	Wear coveralls and safety boots.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
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)	0.759 cm ³ /cm ³ (Carbon dioxide)

9.1 Information on basic physical and chemical properties

Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
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10. STABILITY AND REACTIVITY**10.1 Reactivity**

Unreactive under normal conditions.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Moist carbon dioxide is corrosive, hence acid resistant materials are required (e.g. stainless steel). Certain properties of some plastics and rubbers may be affected by carbon dioxide (i.e. embrittlement, leaching of plasticisers, etc). Dust of aluminium, chrome and manganese ignite and explode when heated in carbon dioxide. Incompatible with acrylaldehyde, aziridine, metal acetylides, sodium peroxide. Corrosive when moist.

10.6 Hazardous decomposition products

This material will not decompose to form hazardous products other than that already present.

11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity****Information available for the product:**

May be harmful. Exposure to low concentrations of sulphur dioxide causes dryness to the mouth and throat and slight breathing difficulties. Exposure at 50 ppm causes strong eye, nose, throat and respiratory tract irritation as well as changes in breathing volume.

Information available for the ingredient(s):

Ingredient	Oral Toxicity (LD50)	Dermal Toxicity (LD50)	Inhalation Toxicity (LC50)
CARBON DIOXIDE	--	--	470000 ppm/30M (rat)
CARBONYL SULPHIDE	--	--	1070 ppm/4 hours (rat)
SULPHUR DIOXIDE	--	--	2520 ppm/1 hour (rat)

Additional ingredient toxicity value(s):**CARBON DIOXIDE (124-38-9)**

LC50 (inhalation)	9 ppm/5M (human)
LC50 (inhalation)	9 ppm/5M (human)

Skin

Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

Eye

Not classified as an eye irritant. Contact with the liquefied material may cause frostbite injury.

Sensitization

Not classified as causing skin or respiratory sensitisation.

Mutagenicity

Not classified as a mutagen.

PRODUCT NAME 3 COMPONENT MIXTURE (COS, SO2, BAL CO2)

Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT – single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT – repeated exposure	Not classified as causing organ effects from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

When discharged to the atmosphere in large quantities, carbon dioxide may contribute to the greenhouse effect.

12.2 Persistence and degradability

Not applicable.

12.3 Bioaccumulative potential

Not applicable.

12.4 Mobility in soil

Not applicable.

12.5 Other adverse effects

When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

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

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1956	1956	1956
14.2 Proper Shipping Name	COMPRESSED GAS, N.O.S. (CONTAINS CARBON DIOXIDE)	COMPRESSED GAS, N.O.S. (CONTAINS CARBON DIOXIDE)	COMPRESSED GAS, N.O.S. (CONTAINS CARBON DIOXIDE)
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None Allocated	None Allocated	None Allocated

14.5 Environmental hazards No information provided

14.6 Special precautions for user

Hazchem code 2TE

GTEPG 2C1

EMS F-C, S-V

Other information 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.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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).
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals. The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].
Hazard codes	None allocated.
Risk phrases	None allocated.
Safety phrases	None allocated.
Inventory listing(s)	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) 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 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.

Abbreviations	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
	EMS Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS Globally Harmonized System
	GTEPG Group Text Emergency Procedure Guide
	IARC International Agency for Research on Cancer
	LC50 Lethal Concentration, 50% / Median Lethal Concentration
	LD50 Lethal Dose, 50% / Median Lethal Dose
	mg/m ³ Milligrams per Cubic Metre
	OEL Occupational Exposure Limit
	pH relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm Parts Per Million
	STEL Short-Term Exposure Limit
	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
	SWA Safe Work Australia
	TLV Threshold Limit Value
	TWA Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier 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, importer or supplier.

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