

SAFETY DATA SHEET

136

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**1.1 Product identifier****Product name** OZONE 8.4 % BALANCE OXYGEN**Synonym(s)** 136 - SDS NUMBER • BOC OZONE**1.2 Uses and uses advised against****Use(s)** 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
Acute Toxicity: Inhalation: Category 1
Oxidizing Gases: Category 1**2.2 Label elements****Signal word** DANGER**Pictogram(s)****Hazard statement(s)**

H270 May cause or intensify fire; oxidizer.
H280 Contains gas under pressure; may explode if heated.
H330 Fatal if inhaled.

Prevention statement(s)

P220 Keep/Store away from clothing/incompatible materials/combustible materials.
P244 Keep reduction valves free from grease and oil.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P284 Wear respiratory protection.

Response statement(s)

P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician.
P320	Specific treatment is urgent - see first aid instructions.
P370 + P376	In case of fire: Stop leak if safe to do so.

Storage statement(s)

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.

Disposal statement(s)

P501	Dispose of contents/container in accordance with relevant regulations.
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2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (v/v)
OXYGEN	7782-44-7	231-956-9	84.3%
OZONE	10028-15-6	233-069-2	8.4%
ARGON	7440-37-1	231-147-0	4.3%
NITROGEN	7727-37-9	231-783-9	3%

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 where an inhalation risk exists. Apply artificial respiration if not breathing. 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

Over exposure may result in severe lung damage. Increases the risk of allergic respiratory responses in asthmatics.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

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 - oxidising agent. Supports combustion and may cause fire/explosion in contact with incompatible substances, strong acids, reducing agents, combustibles and flammables.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Increases fire intensity and may explode in contact with incompatible materials. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool cylinders and to disperse gas clouds.

5.4 Hazchem code

2PE

2 Fine Water Spray.

P Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing 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 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.

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
Argon	SWA (AUS)			Asphyxiant	
Nitrogen	SWA (AUS)			Asphyxiant	
Ozone	SWA (AUS)	0.1	0.2	--	--

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 explosion proof extraction ventilation is recommended. 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 an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS
Odour	PUNGENT 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)	INSOLUBLE
Vapour pressure	NOT RELEVANT
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	OXIDISING GAS
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
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10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

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

Incompatible (violently) with combustible materials, halides (e.g. bromides) and nitrogen oxides (eg nitrogen dioxide).

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Fatal if inhaled. Causes severe damage to the upper respiratory tract and lungs.
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 or escaping compressed gas may cause frostbite injury.
Sensitization	Not classified as causing skin sensitisation. Increases the risk of allergic respiratory responses in asthmatics.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT – single exposure	Not classified as causing organ effects from single exposure. However, exposure may result in irritation of the nose and throat, with coughing. Over exposure may result in severe lung damage.
STOT – repeated exposure	Not classified as causing organ effects from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

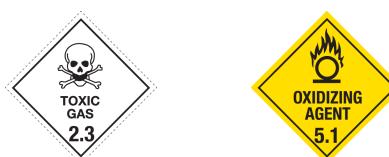
12.5 Other adverse effects

No information provided.

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	3303	3303	3303
14.2 Proper Shipping Name	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S. (Contains ozone)	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S. (Contains ozone)	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S. (Contains ozone)
14.3 Transport hazard classes	2.3, 5.1	2.3, 5.1	2.3, 5.1
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 2PE

GTEPG 2B5

EMS F-C, S-W

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	O Oxidising T+ Very toxic	
Risk phrases	R8 Contact with combustible material may cause fire. R26 Very toxic by inhalation.	
Safety phrases	S17 Keep away from combustible material. S23 Do not breathe gas.	
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.

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

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

Ozone is formed naturally in the atmosphere, as a colourless gas having a very pungent odour. Ozone, chemically, is the triatomic, allotropic form of oxygen having the chemical symbol O₃ and a molecular weight of 47.9982. These three oxygen atoms form a relatively unstable, highly oxidative molecule that serves as a strong oxidant for many commercial and industrial applications.

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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