

SAFETY DATA SHEET

OZONE

Infosafe No.: LQ404
Issued Date: 07/08/2015
Issued by: WATERCO LIMITED

1. IDENTIFICATION

GHS Product Identifier

OZONE

Company Name

WATERCO LIMITED

Address

36 South Street Rydalmere
NSW 2116 Australia

Telephone/Fax Number

Tel: 61 2 9898 8600

Emergency phone number

Australia 1800 638 556 land line for transport by air and sea +61 438 465960/ New Zealand 0800 154 666 land line for transport by air and sea +64 962 390 85

Recommended use of the chemical and restrictions on use

Water sanitation. Ozone produced in gaseous form on site by an ozone generator, in varying concentrations, in either air or aqueous solution, for the purposes of odor abatement, oxidation of organic compounds, or antimicrobial intervention, in a variety of applications.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

GHS Classification:

Eye damage/irritation 2A

Hazardous to the aquatic environment - acute hazard category 1

Oxidizing gas category 1

STOT repeated exposure category 1

STOT single exposure category 3 - respiratory tract irritation

Signal Word (s)

DANGER

Hazard Statement (s)

H270 May cause or intensify fire; oxidizer.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

Pictogram (s)

Environment, Exclamation mark, Flame over circle, Health hazard



Precautionary statement – Prevention

- P220 Keep/Store away from clothing/combustible materials.
- P244 Keep reduction valves free from grease and oil.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash contaminated skin thoroughly after handling
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response

- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell.
- P370+P376 In case of fire: Stop leak if safe to do so.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P391 Collect spillage.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice/attention.

Precautionary statement – Storage

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

Precautionary statement – Disposal

- P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Ozone	10028- 15- 6	100 %

4. FIRST-AID MEASURES

Inhalation

Avoid becoming a casualty - to protect rescuer, use air-viva, oxy-viva or one-way mask. Remove affected person from contaminated area - Apply artificial respiration if not breathing. Do not give direct mouth to mouth resuscitation. Resuscitate in a well ventilated area. Seek IMMEDIATE medical attention.

Ingestion

Not considered a potential route of exposure.

Skin

Remove all contaminated clothing immediately. Clothing frozen to the skin should be thawed before being removed. Wash affected area thoroughly with soap and water. For Frostbite: Flush affected areas with lukewarm water. Do not use hot water. Treat as thermal burns. Seek IMMEDIATE medical attention.

Eye contact

If eye tissue is frozen, seek IMMEDIATE medical attention. If tissue is not frozen, immediately irrigate with copious amounts of water for at least 15 minutes. Remove contact lenses. Eyelids to be held open. Seek medical attention.

First Aid Facilities

Eyewash, safety shower and normal washroom facilities.

Advice to Doctor

Treat symptomatically.

Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Carbon dioxide, dry chemical, foam, water mist or water spray.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide and oxides of nitrogen.

Specific Hazards Arising From The Chemical

Cylinders may explode when heated or may become a projectile in a fire. As a strong oxidant it may accelerate, even initiate, combustion, or cause explosions.

Decomposition Temperature

Not available

Precautions in connection with Fire

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

6. ACCIDENTAL RELEASE MEASURES**Emergency Procedures**

Remove all sources of ignition. Increase ventilation. Evacuate all unprotected personnel. Use self-contained breathing apparatus (S.C.B.A) and full protective clothing to minimise exposure. Allow gas to vent safely to atmosphere, preferably in well ventilated, remote location. Monitor oxygen concentration in confined spaces. Check for leaks using pressure drop test or soapy water on joints and outlets. Shut cylinder valve to stop leak if possible and safe to do so. Check gas concentration to ensure area is safe before removing protective equipment. Damaged gas cylinders should be returned to the supplier.

7. HANDLING AND STORAGE**Precautions for Safe Handling**

Use in a well ventilated area. Wear appropriate personal protective equipment and clothing to prevent exposure. Use smallest possible amounts in designated areas with adequate ventilation. Maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities. DO NOT enter confined spaces where gas may have collected. Suck back of water into the container must be prevented. Do not allow back feed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions. Ozone must be contained within ozone-resistant tubing and pipes from the generation point to the application point.

Conditions for safe storage, including any incompatibilities

Cylinders shall be stored in a cool, dry, well-ventilated area out of direct sunlight and away from heat and ignition sources. Outside or detached storage is preferred. No part of cylinders shall be exposed to temperatures above 50°C. Cylinders shall be stored upright on a level, fireproof floor, secure in position and protected from damage. Full cylinders shall be stored separately from empties. Keep cylinder valve cover on. Label empty cylinders and store full cylinders separately from empty ones. Consider leak detection and alarm systems, as required. Limit quantity in storage. Restrict access to storage area and post warning signs. Inspect periodically for deficiencies such as damage or leaks. Have fire extinguishers available in and near the storage area. Ensure that storage conditions comply with applicable local and national regulations.

For information on the design of the storeroom, reference should be made to Australian Standard AS 4332-2004 The storage and handling of gases in cylinders.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

Ozone

TWA: 0.1 Peak limitation

TWA: 0.2 Peak limitation

Peak Limitation: A ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.

Biological Limit Values

No biological limits allocated.

Appropriate Engineering Controls

Use ozone destruct unit for off gassing of ozone. In contact with combustible substances, oxidising gas increases the risk of fire and can fuel any existing fire substantially. Risk assessment should be considered any situation where an oxidiser could come into contact with these types of materials. This includes any containers and other equipment used in handling or transferring the chemicals. A flame-proof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn. Refer to relevant regulations for further information concerning ventilation requirements.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances. i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.

Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Gas

Appearance

Clear at low concentration, blue at higher concentration.

Odour

Distinct pungent odour.

Decomposition Temperature

Not available

Melting Point

-193 °C

Boiling Point

-112 °C

Solubility in Water

570 mg/L at 20°C

100% ozone: 0.64 at 0°C

Specific Gravity

Not available

pH

Not available

Vapour Pressure

> 1 atm

Vapour Density (Air=1)

1.6 (air=1)

Odour Threshold

0.02 to 0.05 ppm; exposure desensitizes

Viscosity

Not available

Partition Coefficient: n-octanol/water

Not available

Density

Not available

Flash Point

Not available

Flammability

Combustible

Auto-Ignition Temperature

Not available

Explosion Limit - Upper

Not available

Explosion Limit - Lower

Not available

Molecular Weight

48.0

Oxidising Properties

May cause or intensify fire; oxidizer.

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of storage and handling.

Reactivity and Stability

Ozone is highly unstable and highly reactive.

Conditions to Avoid

Heat, open flames and other sources of ignition and oxidizing substances.

Incompatible materials

Not available

Hazardous Decomposition Products

Thermal decomposition may result in the release of toxic and/or irritating fumes, smoke and gases including: carbon dioxide and carbon monoxide.

Possibility of hazardous reactions

Not available

Hazardous Polymerization

Not available

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this material. The available acute toxicity data for the ingredient/s is/are given below.

Ingestion

Ingestion unlikely due to form of product.

Inhalation

May cause respiratory irritation. Inhalation of product vapours can cause irritation of the nose, throat and respiratory system.

Skin

May be irritating to skin. The symptoms may include redness, itching and swelling.

Eye

Causes serious eye irritation. On eye contact this product will cause tearing, stinging, blurred vision, and redness.

Respiratory sensitisation

Not expected to be a respiratory sensitiser.

Skin Sensitisation

Not expected to be a skin sensitiser.

Germ cell mutagenicity

Not considered to be a mutagenic hazard.

Carcinogenicity

Not considered to be a carcinogenic hazard.

Reproductive Toxicity

Not considered to be toxic to reproduction.

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration Hazard

Not expected to be an aspiration hazard.

Other Information

LC50 (mice): 12.6 ppm 3h

LC50 (hamsters): 35.5 ppm 3h

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life.

Persistence and degradability

Not available

Mobility

Not available

Bioaccumulative Potential

Not available

Other Adverse Effects

Not available

Environmental Protection

Prevent large amounts from entering waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS**Disposal considerations**

Dispose of waste according to applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Transport Information

Road and Rail Transport (ADG Code):

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) (7th edition).

Marine Transport (IMO/IMDG):

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Air Transport (ICAO/IATA):

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

U.N. Number

None Allocated

UN proper shipping name

None Allocated

Transport hazard class(es)

None Allocated

Special Precautions for User

Not available

IMDG Marine pollutant

Yes

Transport in Bulk

Not available

15. REGULATORY INFORMATION

Regulatory information

Classified as hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule

Not Scheduled

16. OTHER INFORMATION

Date of preparation or last revision of SDS

SDS Created: August 2015

References

- Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
- Standard for the Uniform Scheduling of Medicines and Poisons.
- Australian Code for the Transport of Dangerous Goods by Road & Rail.
- Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
- Workplace exposure standards for airborne contaminants, Safe work Australia.
- American Conference of Industrial Hygienists (ACGIH).

- Globally Harmonised System of classification and labelling of chemicals.

Contact Person/Point

Emergency contact:

Australia 1800 638 556 landline +61 438 465 960

New Zealand 0800 154 666 landline +64 962 390 85

END OF SDS

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