water, the liquid of life

SAFETY DATA SHEET

AQUAHEALTH LITHIUM HYPOCHLORITE

Infosafe No.: LQ33J
Issued Date: 07/02/2014
Issued by: WATERCO LIMITED

1. IDENTIFICATION

GHS Product Identifier
AQUAHEALTH LITHIUM HYPOCHLORITE

Product Code
#34112 1 KG, # 34111 2 KG, #34508 500 G

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

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.
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Oxidizing Solids: Category 3
Acute Toxicity - Oral: Category 5
Skin Corrosion/Irritation: Category 1B
Eye Damage/Irritation: Category 1
Hazardous to the Aquatic Environment - Acute Hazard: Category 1

Signal Word (s)
DANGER

Hazard Statement (s)
H272 May intensify fire; oxidiser.
H303 May be harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.

Precautionary Statement (s)
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.

Pictogram (s)
Corrosion, Flame over circle, Environment

Precautionary statement – Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P220 Keep/Store away from clothing/combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response
INHALATION
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician.
INGESTION
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P310 Immediately call a POISON CENTER or doctor/physician.
SKIN
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 Wash contaminated clothing before reuse.
P310 Immediately call a POISON CENTER or doctor/physician.
EYE
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
OTHER
P370+P378 In case of fire: Use carbon dioxide, dry chemical, foam, water mist or water spray for extinction.
P391 Collect spillage.

Precautionary statement – Storage
P405 Store locked up.

Precautionary statement – Disposal
P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Sodium chloride	7647-14-5	29-36 %
Hypochlorous acid, lithium salt	13840-33-0	28-35 %
Sodium sulfate	7757-82-6	10.9-20.7 %
Lithium Chlorate	36355-96-1	2.6-4.4 %
Lithium chloride	7447-41-8	2-4 %
Lithium Carbonate	554-13-2	1.3-3.7 %
Lithium hydroxide	1310-65-2	1.2-2.1 %
Water	7732-18-5	Balance

4. FIRST-AID MEASURES

Inhalation
If inhaled, remove affected person from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion
Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

Skin
Remove all contaminated clothing immediately. Wash gently and thoroughly with water and non-abrasive soap for 15 minutes. Ensure contaminated clothing is washed before re-use or discard. Seek immediate medical attention.

Eye contact
If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate 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 13 11 26) or a doctor at once.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use water.

Unsuitable Extinguishing Media
Do not use dry chemical, carbon dioxide or halon.

Hazards from Combustion Products
Under fire conditions this product may emit toxic and/or irritating fumes, gases and vapours including chlorine, oxygen, lithium hydroxide, lithium chlorates.

Specific Hazards Arising From The Chemical
A strong oxidising agent. Contact with combustible material may cause fire. Non-combustible, but will support the combustion of other materials.

Hazchem Code
1Y

Decomposition Temperature
135°C

Precautions in connection with Fire
Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) and full protective clothing to prevent exposure to vapours, fumes or products of combustion. Water spray may be used to cool down heat-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures
Remove all sources of ignition. Evacuate all unprotected personnel. Do not allow contact with skin and eyes. Do not breathe dust. It is essential to wear self-contained breathing apparatus (S.C.B.A) and full personal protective equipment and clothing to prevent exposure. Avoid exposure to spillage by sweeping up material avoiding dust generation - dampen spilled material with water if suitable to avoid airborne dust, OR where possible use dustless methods such as vacuum to collect the material; then transfer material in to suitable labelled containers for subsequent recycling or disposal. Use absorbent paper dampened with water to pick up remaining material. Wash surfaces well with soap and water. Dispose of waste according to applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling
Corrosive solids. Attacks skin and eyes. Causes burns. Avoid breathing in dust. Wear suitable protective clothing, gloves and eye/face protection when mixing and using. Use in designated areas with adequate ventilation. Keep containers tightly closed. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands after handling, and before eating, drinking, smoking or using the toilet facilities.

Conditions for safe storage, including any incompatibilities
Store in a well ventilated area away from heat and sources of ignition, out of direct sunlight and moisture. Store in suitable, labelled containers away from combustible materials and other incompatible materials. Inspect periodically for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Maximum product temperature 40°C. Refer to AS 4326-2008 The storage and handling of oxidizing agents and AS 3780-2008 The storage and handling of corrosive substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values
No exposure standards have been established for this material, however, the TWA Safe Work, Australia) exposure standards for dust not otherwise specified is 10 mg/m³. TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

Biological Limit Values
No biological limits allocated.

Appropriate Engineering Controls
Provide sufficient ventilation to keep airborne levels below exposure limits. Where dusts are generated, particularly in enclosed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required.

Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable dust/particulate filter should be used. Reference should be made to Australian/New Zealand 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 or chemical goggles should be worn. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material such as rubber. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. 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

Appearance
Granular solid

Colour
White

Odour
Burning, chlorine-like

Decomposition Temperature
135°C

Melting Point
135°C (decomposes)

Boiling Point
Not applicable

Solubility in Water
43g/L at 25°C

Solubility in Organic Solvents
Not available

Specific Gravity
0.531 g/cm3 (20°C)

pH
11 (1% solution) (25°C)

Vapour Pressure
Not applicable

Vapour Density (Air=1)
Not applicable

Evaporation Rate
Not applicable

Odour Threshold
Not available

Viscosity
Not available

Partition Coefficient: n-octanol/water
Not available

Flash Point
Not applicable

Flammability
Oxidiser. Non-combustible, however in fire situations oxygen may be liberated and increase the intensity of the fire.

Auto-Ignition Temperature
Not applicable

Flammable Limits - Lower
Not applicable

Flammable Limits - Upper
Not applicable

Molecular Weight
58.39

Oxidising Properties
Oxidiser

10. STABILITY AND REACTIVITY

Reactivity
Refer to Sec 10: Possibility of hazardous reactions.

Chemical Stability
Stable under normal conditions of storage and handling.

Conditions to Avoid
Dust accumulation. Extremes of temperature and direct sunlight. Moisture. Contact with combustible materials.

Incompatible materials
Acids, oxidizable materials, combustible materials.

Hazardous Decomposition Products
Thermal decomposition may result in the release of toxic and/or irritating fumes, gases and vapours including including oxygen, lithium hydroxide, lithium chlorates.

Possibility of hazardous reactions
Will react with incompatible materials.

Hazardous Polymerization
Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information
The available acute toxicity datum for this product is given below.

Acute Toxicity - Oral
Lithium Hypochlorite formulation:
LD50 (Rat): 555 mg/kg

Acute Toxicity - Inhalation
Lithium Hypochlorite formulation:
LC50 (Rat): 2.0 mg/L

Acute Toxicity - Dermal
Lithium Hypochlorite formulation:
LD50 (Rabbit): 8100 mg/kg

Ingestion
May be harmful if swallowed. Ingestion of this product will cause nausea, vomiting, abdominal pain and chemical burns to the mouth, throat and stomach.

Inhalation
Dust or vapours generated will cause irritation with possible burns to the mucous membrane and upper airways. Symptoms may include coughing, lesions of the nasal septum, severe pain and may lead to permanent tissue scarring.

Skin
Causes burns. Corrosive to the skin. Skin contact can cause redness, itching, irritation, severe pain and chemical burns with resultant tissue destruction.

Eye
Causes eye damage. Eye contact will cause stinging, blurring, tearing, severe pain and possible burns, necrosis, permanent damage and blindness.

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
Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure
Not expected to cause toxicity to a specific target organ by repeated exposure.

Aspiration Hazard
Not expected to be an aspiration hazard.

Other Information
Continuous inhalation exposure may cause lung damage.

Eye Contact:
Lithium Hypochlorite formulation: Severely irritating (rabbit)

Skin Contact:
non-corrosive, Corrositex In-Vitro Skin Corrosion (34.6 wt% lithium hypochlorite)

12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic life.

Persistence and degradability
Not available

Mobility
Not available

Bioaccumulative Potential
Not available

Environmental Protection
Do not allow product to enter drains, waterways or sewers.

Acute Toxicity - Fish
Lithium Hypochlorite formulation:
LC50 (Rainbow trout): 0.69 mg/L/96h [FMC I87-0995]
LC50 (Bluegill): 0.97 mg/L/96h [FMC I87-0994]

Acute Toxicity - Daphnia
Lithium Hypochlorite formulation:
LC50 (Daphnia): 0.37 ug/L/48h [FMC I87-0993]

Acute Toxicity - Other Organisms
Lithium Hypochlorite formulation:
LD50 (Oral, Mallard duck): 1,960 mg/kg [FMC I87-0992]
LC50 (Mallard duck): >17,240 ppm/ 5 Day Dietary (no deaths at maximum dose) [FMC I87-0990]
LC50 (Bobwhite quail): >17,240 ppm/5 Day Dietary [FMC I87-0989]

13. DISPOSAL CONSIDERATIONS

Disposal considerations
The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

Transport Information
Road and Rail:

This material is classified as Dangerous Goods Division 5.1 Oxidising substances according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition).
Division 5.1 Dangerous Goods are incompatible in a placard load with any of the following:
- Class 1, Explosives
- Division 2.1, Flammable Gases
- Division 2.3, Toxic Gases
- Class 3, Flammable Liquids
- Division 4.1, Flammable Solids
- Division 4.2, Spontaneously Combustible Substances
- Division 4.3, Dangerous When Wet Substances
- Some Division 5.1 Oxidising substances (Refer Table 9.2)
- Division 5.2, Organic Peroxides
- Class 6, Toxic and Infectious Substances, if the Class 6 substance is a fire risk substance
- Class 7, Radioactive Substances
- Class 8, Corrosive Substances
- Class 9, Miscellaneous Dangerous Goods, if the Class 9 substance is a fire risk substance
- Fire risk substances
- Combustible liquids

Marine Transport (IMO/IMDG):
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
UN No.: 1479
Proper Shipping Name: OXIDIZING SOLID, N.O.S. (LITHIUM HYPOCHLORITE, MIXTURE)
Class: 5.1
Packaging Group: III
EMS No.: F-A, S-Q
Special Provisions: 223, 274, 900

Air Transport (ICAO/IATA):
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.
UN No.: 1479
Proper Shipping Name: OXIDIZING SOLID, N.O.S. (LITHIUM HYPOCHLORITE, MIXTURE)
Class: 5.1
Packaging Group: III
Label: Oxidizer
Packaging Instructions (passenger & cargo): 559
Packaging Instructions (cargo only): 563
Special Provisions: A3, A803

U.N. Number
1479

UN proper shipping name
OXIDIZING SOLID, N.O.S.(LITHIUM HYPOCHLORITE, MIXTURE)

Transport hazard class(es)
5.1

Packing Group
III

Hazchem Code
1Y

IERG Number
31

IMDG Marine pollutant
Yes

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
Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule
S6

Australia (AICS)
All components of this product are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Date of preparation or last revision of SDS
SDS Created: February 2014

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