SAFETY DATA SHEET
CALCIUM CHLORIDE SOLUTION
REVISION 4, DATE 20 FEB 20

1. IDENTIFICATION

Product Name	**Calcium Chloride Solution**
Other Names	No Data Available
Uses	Water treatment; food additive.
Chemical Family	No Data Available
Chemical Formula	CaCl2.H2O
Chemical Name	Calcium chloride, aqueous solution
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not Scheduled

Globally Harmonised System

Hazard Classification		Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories		Serious Eye Damage/Irritation - Category 2A	
Pictograms			
Signal Word		Warning	
Hazard Statements		**H319**	Causes serious eye irritation.
Precautionary Statements	Prevention	**P280**	Wear eye protection/face protection.
		P264	Wash hands thoroughly after handling.
	Response	**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.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Calcium chloride	CaCl2	10043-52-4	20 - 60 %
Water	H2O	7732-18-5	Balance %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink a glass of water. Do not induce vomiting. If vomiting occurs, give further water. Get medical advice/attention if you feel unwell.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Skin	IF ON SKIN: Remove and isolate contaminated clothing and shoes. Flush skin with running water/shower. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention.
Advice to Doctor	Treat symptomatically.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Dike fire-control water for later disposal.
Flammability Conditions	Non-combustible material.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. *Select the appropriate extinguishing media depending on the surrounding fire and environment.
Fire and Explosion Hazard	Containers may explode when heated.
Hazardous Products of Combustion	Fire or heat may produce irritating and/or toxic fumes.
Special Fire Fighting Instructions	Contain runoff from fire control water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material - Slippery when spilt. Avoid accidents, clean up immediately! Avoid breathing vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Collect recoverable product into clean, labelled containers, preferably for re-use. Absorb residues with earth, sand or other non-combustible material and transfer to suitable, labelled containers for disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Dike far ahead of large spill for later disposal.
Decontamination	Wash the spillage area with large quantities of water.
Environmental Precautionary Measures	Prevent entry into drains and waterways. If contamination of sewers or waterways has occurred advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours/aerosols and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as

	required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check regularly for leaks. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No value assigned for this specific material by Safe Work Australia.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	Natural ventilation should be adequate under normal use conditions. A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: Not required under normal use conditions. If an inhalation risk exists, wear a suitable mist respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical goggles. - Hand protection: Handle with gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear to slightly hazy liquid
Odour	No information available.
Colour	Colourless or milky white
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Miscible with water
Specific Gravity	1.30 - 1.33
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available

Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible material.
Reactions That Release Gases or Vapours	Fire or heat may produce irritating and/or toxic fumes.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under recommended storage and handling conditions.
Conditions to Avoid	No information available.
Materials to Avoid	Incompatible/reactive with strong reducing and oxidising agents.
Hazardous Decomposition Products	Fire or heat may produce irritating and/or toxic fumes.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: Low acute toxicity following oral and dermal exposure; No adverse effects expected. Swallowing may cause nausea, vomiting, diarrhoea, gastrointestinal irritation. - Skin corrosion/irritation: May cause slight skin irritation, particularly with abraded skin. - Eye damage/irritation: Causes serious eye irritation. - Respiratory/skin sensitisation: No information available. - Germ cell mutagenicity: No information available. - Carcinogenicity: No information available. - Reproductive toxicity: No information available. - STOT (single exposure): Calcium chloride may be a slight respiratory irritant. Breathing in mists or aerosols may produce respiratory irritation. - STOT (repeated exposure): No information available. - Aspiration toxicity: No information available.
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Prevent entry into soils, drains and waterways.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	If recycling or reuse is not practical, dispose of through a licensed waste contractor and in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Packaging disposal: If recycling or reuse is not practical, packaging must be disposed of in accordance with local/regional/national regulations. Clean packaging with water and dispose of washings in accordance to local regulations.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Calcium chloride, Solution
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Calcium chloride, Solution
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Calcium chloride, Solution
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)
US DOT

Proper Shipping Name	Calcium chloride, Solution
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Calcium chloride, Solution
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	Calcium chloride, Solution
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002503 - Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	CACHLO1819, CACHLO1820, CACHLO1821, CACHLO1837, CACHLO1841, CACHLO1843, CACHLO1845, CACHLO1846, CACHLO1847, CACHLO1848, CACHLO1849, CACHLO1850, CACHLO1853, CACHLO1855, CACHLO1856, CACHLO1857, CACHLO1858, CACHLO1859, CACHLO1860, CACHLO1861, CACHLO1862, CACHLO1863, CACHLO1864, CACHLO1865, CACHLO1866, CACHLO1870, CACHLO1871, CACHLO1880, CACHLO1881, CACHLO1883, CACHLO1888, CACHLO2020, CACHLO2025, CACHLO2050, CACHLO2060, CACHLO3410, CACHLO3415, CACHLO3416, CACHLO3450, CACHLO6161, CACHLS1000, CACHLS1001, CACHLS1002, CACHLS1100, CACHLS1101, CACHLS1200, CACHLS1300, CACHLS2100, CACHLS3000, CACHLS3200, CACHLS3400, CACHLS3450, CACHLS3500, CACHLS4000, CACHLS4100, CACHLS4200, CACHLS4300, CACHLS4500, CACHLS5000, CACHLS5600, CACHLS6000, CACHLS6034, CACHLS6500, CACHLS6600
Revision	4
Revision Date	20 Feb 2020
Key/Legend	**<** Less Than **>** Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** Square Centimetres **CO2** Carbon Dioxide **COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius **EPA (New Zealand)** Environmental Protection Authority of New Zealand **deg F (°F)** Degrees Farenheit **g** Grams **g/cm^3** Grams per Cubic Centimetre **g/l** Grams per Litre **HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other. **inHg** Inch of Mercury **inH2O** Inch of Water **K** Kelvin **kg** Kilogram **kg/m^3** Kilograms per Cubic Metre **lb** Pound **LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. **LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. **ltr** or **L** Litre **m^3** Cubic Metre **mbar** Millibar **mg** Milligram **mg/24H** Milligrams per 24 Hours **mg/kg** Milligrams per Kilogram **mg/m^3** Milligrams per Cubic Metre **Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present. **mm** Millimetre **mmH2O** Millimetres of Water **mPa.s** Millipascals per Second **N/A** Not Applicable **NIOSH** National Institute for Occupational Safety and Health **NOHSC** National Occupational Heath and Safety Commission **OECD** Organisation for Economic Co-operation and Development **Oz** Ounce **PEL** Permissible Exposure Limit **Pa** Pascal **ppb** Parts per Billion **ppm** Parts per Million **ppm/2h** Parts per Million per 2 Hours **ppm/6h** Parts per Million per 6 Hours **psi** Pounds per Square Inch

R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight