SAFETY DATA SHEET
CALCIUM CHLORIDE
REVISION 5, DATE 30 DEC 2022

1. IDENTIFICATION

Product Name	**Calcium Chloride**
Other Names	Calcium dichloride
Uses	Dust suppression; process aid during oil drilling; dehumidifying; road de-icing; food additive; cooling media.
Chemical Family	No Data Available
Chemical Formula	CaCl2
Chemical Name	Calcium chloride, anhydrous
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	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, 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	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
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 2	
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	60 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth with water. Do NOT induce vomiting. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.
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; consult a specialist.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation

	occurs, get medical advice/attention.
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. *In all case of doubt, or when symptoms persist, seek medical attention.
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.
Flammability Conditions	Not combustible.
Extinguishing Media	If material is involved in a fire, use extinguishing media appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	No information available.
Hazardous Products of Combustion	Fire may produce irritating, corrosive and/or toxic gases.
Special Fire Fighting Instructions	Contain runoff from fire control water - Runoff may cause pollution.
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. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Take up mechanically. Sweep up and shovel into suitable, closed containers for disposal (see SECTION 13).
Containment	Stop leak if you can do it without risk. Prevent dust cloud.
Decontamination	No information available.
Environmental Precautionary Measures	Prevent the material from entering drains or watercourses.
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). *Wear an appropriate/approved respirator if dust is generated.

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 generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid any source of ignition and/or static charge.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Avoid exposure to

	moisture. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container. Keep in properly labelled containers. *Unsuitable packaging material: Aluminium.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable dust). - OSHA PEL (Particulates not otherwise regulated): TWA = 15 mg/m3 (total dust); TWA = 5 mg/m3 (respirable dust).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	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: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate (P2) respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side shields; Safety goggles. - Hand protection: Handle with gloves. Recommended: PVC, Neoprene, Natural rubber. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Impervious clothing. Apron/boots or PVC or neoprene, in case of dusts.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when handling the product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Pellet or powder
Odour	Odourless
Colour	White
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	>1,600 - 1,935 °C
Melting Point	775 - 782 °C
Freezing Point	No Data Available
Solubility	Soluble in water
Specific Gravity	No Data Available
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	2.15 g/cm3

Specific Heat	No Data Available
Molecular Weight	110.98 g/mol
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	No information available.
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	Reacts violently with water.
Properties That May Initiate or Contribute to Fire Intensity	Not combustible.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating, corrosive and/or toxic gases.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	May be corrosive to metals (aqueous solution).
Chemical Stability	Stable under normal temperature conditions and recommended use.
Conditions to Avoid	Avoid generating dust. Avoid exposure to moisture.
Materials to Avoid	Incompatible/reactive with oxidising substances, reducing agents. *Reacts violently with water.
Hazardous Decomposition Products	Fire/decomposition may produce irritating, corrosive and/or toxic gases.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: May be harmful if swallowed. - Skin corrosion/irritation: Not classified. - Eye damage/irritation: Causes serious eye irritation. - Respiratory/skin sensitisation: Not classified. - Germ cell mutagenicity: Not classified. - Carcinogenicity: Not classified. - Reproductive toxicity: Not classified. - STOT (single exposure):Not classified. Observations in humans suggest that Calcium chloride may be a slight respiratory irritant [NICNAS].

- STOT (repeated exposure): Not classified.
- Aspiration toxicity: Not classified.
*The substance is not classified as having endocrine disrupting properties.

Acute

Ingestion	Acute toxicity (Oral): - LD50, Rat (male/female): 2,301 mg/kg bw. [Supplier's SDS].
Other	Acute toxicity (Dermal): - LD50, Rabbit: >5,000 mg/kg bw. [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (freshwater): >4,630 mg/L (96 h) [Supplier's SDS]. - EC50, Invertebrates (freshwater): 2,400 mg/L (48 h) [Supplier's SDS]. - NOEC, Invertebrates (freshwater): 320 mg/L (21 d) [Supplier's SDS]. - EC50, Algae (freshwater): 2,900 mg/L (72 h) [Supplier's SDS].
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Prevent the material from entering drains or watercourses.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. Recover/recycle, where feasible, otherwise incineration is the recommended method of disposal.
Special Precautions for Land Fill	Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then recycled or disposed of by landfill or incineration, as appropriate. Do not incinerate closed containers.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Calcium Chloride
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
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
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
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
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
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)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	233-140-8
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (List of Classified Substances)	Listed

New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed
USA (TSCA)	Listed
Mexico (INSQ)	Listed

16. OTHER INFORMATION

Related Product Codes	CACHLF2000, CACHLF9400, CACHLO0400, CACHLO0700, CACHLO0800, CACHLO0900, CACHLO1000, CACHLO1001, CACHLO1002, CACHLO1003, CACHLO1004, CACHLO1005, CACHLO1006, CACHLO1007, CACHLO1008, CACHLO1009, CACHLO1010, CACHLO1011, CACHLO1012, CACHLO1013, CACHLO1014, CACHLO1015, CACHLO1016, CACHLO1017, CACHLO1018, CACHLO1019, CACHLO1020, CACHLO1021, CACHLO1022, CACHLO1023, CACHLO1024, CACHLO1025, CACHLO1026, CACHLO1027, CACHLO1200, CACHLO1790, CACHLO1834, CACHLO1900, CACHLO1990, CACHLO1991, CACHLO1992, CACHLO1993, CACHLO1994, CACHLO2040, CACHLO2100, CACHLO2230, CACHLO2240, CACHLO2380, CACHLO2390, CACHLO2710, CACHLO2810, CACHLO2900, CACHLO2901, CACHLO2902, CACHLO3040, CACHLO3041, CACHLO3045, CACHLO3094, CACHLO3420, CACHLO3430, CACHLO3440, CACHLO4200, CACHLO4201, CACHLO4202, CACHLO4203, CACHLO4204, CACHLO4300, CACHLO4400, CACHLO4450, CACHLO4451, CACHLO4500, CACHLO4501, CACHLO4600, CACHLO4700, CACHLO4710, CACHLO4711, CACHLO4800, CACHLO4801, CACHLO4850, CACHLO4851, CACHLO4852, CACHLO5021, CACHLO5030, CACHLO5031, CACHLO5320, CACHLO5321, CACHLO5800, CACHLO5900, CACHLO6000, CACHLO6001, CACHLO6002, CACHLO6330, CACHLO6340, CACHLO6396, CACHLO6400, CACHLO6410, CACHLO6500, CACHLO6501, CACHLO6600, CACHLO6700, CACHLO6800, CACHLO7710, CACHLO7720, CACHLO7810, CACHLO8400, CACHLO8500, CACHLO8501, CACHLO8510, CACHLO8520, CACHLO8530, CACHLO8700, CACHLO8800, CACHLO8900, CACHLO9500, CACHLO9600, CACHLO9800, CACHLO9900, CACHLO9925, CACHLO9971, CACHLO9990, CACHLO9991, CACHLO9994
Revision	5
Revision Date	30 Dec 2022
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