Material Safety Data Sheets

Revision 2

1. IDENTIFICATION

Product Name	**Calcium chloride, dihydrate**
Other Names	No Data Available
Uses	De-icing and freezing point depression; Road surfacing; Food additive; Laboratory and drying operations; Miscellaneous applications.
Chemical Family	No Data Available
Chemical Formula	CaCl2.2H2O
Chemical Name	Calcium chloride, dihydrate
Product Description	No Data Available
Company	**Arman sina.co**
Contact Information	info@armansina.com **www.armansina.com**

2. HAZARD IDENTIFICATION

Hazard Categories		Serious Eye Damage/Irritation - Category 2A	
Signal Word		Warning	
Hazard Statements		H319	Causes serious eye irritation.
Precautionary Statements	Prevention	P280	Wear eye protection/face protection.
		P264	Wash face, hands and any exposed skin thoroughly after handling.
	Response	P337 + P313	If eye irritation persists: Get medical advice/attention.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Symbol

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Calcium chloride, dihydrate	CaCl2.2H2O	10035-04-8	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Call a Poison Centre or doctor/physician for advice.
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: Wash with plenty of soap and water. Take off contaminated clothing and wash 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 until recovered. 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.
Flammability Conditions	Non-combustible; Material does not burn.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Use extinguishing media appropriate for surrounding conditions.
Fire and Explosion Hazard	Ambient fire may liberate hazardous vapours.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Calcium oxide, Hydrogen chloride.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may 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	Collect material (take up dry) and seal in properly labelled containers for disposal (see SECTION 13). *Caution: May react exothermically on contact with water.
Containment	Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
Decontamination	Wash area down with excess water.
Environmental Precautionary Measures	Prevent entry into drains and waterways. If environmental contamination 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. Minimise dust generation and accumulation. Avoid breathing dust 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 container tightly closed when not in use - check regularly for spills. Protect from moisture (hygroscopic; reacts with water). Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original, properly labelled container.

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).
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: Wear respiratory protection in case of inadequate ventilation or an inhalation risk exists. Recommended: Dust mask/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side-shields, chemical goggles or full face-shield as appropriate (refer to AS/NZS 1337). - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. nitrile rubber (refer to AS/NZS 2161.1). - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls (cotton), safety shoes; Chemical-resistant apron when large quantities are handled.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Flakes, powder, granules, pellets
Odour	Odourless
Colour	White
pH	9 - 11 (5% CaCl2 soln. @ 20° C)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	>=175 ° C
Freezing Point	No Data Available
Solubility	Soluble in water - Soluble in alcohols
Specific Gravity	1.85
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	800 - 900 kg/m3
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.85 g/cm3
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	Product is strongly hygroscopic.
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	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Material does not burn.
Reactions That Release Gases or Vapours	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Calcium oxide, Hydrogen chloride.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	May react exothermically on contact with water.
Chemical Stability	Stable under ordinary conditions of storage and use.
Conditions to Avoid	Avoid dust formation. Protect from moisture/humidity.
Materials to Avoid	Incompatible/reactive with strong acids, strong bases, bromine trifluoride, water, zinc, polymerisable materials.
Hazardous Decomposition Products	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Calcium oxide, Hydrogen chloride.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: May be harmful if swallowed; May cause gastrointestinal irritation, with abdominal pain, nausea, vomiting and diarrhoea. - Skin corrosion/irritation: Skin contact may cause irritation. - Eye damage/irritation: Causes serious eye irritation; May cause redness, tearing, stinging, blurred vision. - Respiratory/skin sensitisation: Not expected to cause sensitisation of the respiratory tract or the skin. - Germ cell mutagenicity: Not considered to be mutagenic. - Carcinogenicity: Not considered to be carcinogenic. - Reproductive toxicity: Not considered to be toxic to reproduction or development. - STOT (single exposure): Inhalation of dusts may cause respiratory tract irritation. - STOT (repeated exposure): Repeated or prolonged exposure is not expected to cause specific target organ toxicity. - Aspiration toxicity: Not expected to be an aspiration hazard.

Acute

Ingestion	Acute toxicity (Oral): For Calcium chloride (CAS No. 10043-52-4): - LD50, Rat (male): 2,120 - 3,798 mg/kg bw. - LD50, Rat (female): 2,361 - 4,179 mg/kg bw. - LD50, Rat (combined male & female): 2,301 mg/kg bw. [ECHA].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

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

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container via a licensed waste contractor and in accordance with local/regional/national regulations.

Special Precautions for Land Fill No information available.

14. TRANSPORT INFORMATION

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Calcium chloride, dihydrate
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, dihydrate
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, dihydrate
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.

15. OTHER INFORMATION

Revision	2
Key/Legend	< Less Than > Greater Than atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO2 Carbon Dioxide COD Chemical Oxygen Demand deg C (° C) Degrees Celcius deg F (° F) Degrees Farenheit g Grams g/cm³ 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/m³ 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 m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram mg/m³ 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