



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	CALCIUM CHLORIDE
Version #	01
Revision date	09-02-2011
CAS #	10043-52-4
Product Codes	NC-3361, NC-12332, NC-11829, CS-C1038, C2435
Synonym(s)	calcium dichloride; calcium chloride anhydrous; Caltac®; Dowflake
Manufacturer	Avantor Performance Materials, Inc.
Address	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
Customer Service	800-372-6726
24 Hour Emergency	908-859-2151
Chemtrec	800-424-9300

2. Hazards Identification

Emergency overview	WARNING
	Harmful if swallowed. Causes eye irritation. May cause skin irritation. Causes respiratory tract irritation.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Causes eye irritation.
Skin	May cause skin irritation.
Inhalation	Dust irritates the respiratory system, and may cause coughing and difficulties in breathing.
Ingestion	Harmful if swallowed. Irritating. May cause nausea, stomach pain and vomiting.
Target organs	Eyes. Skin. Respiratory system.
Chronic effects	None known.
Potential environmental effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
CALCIUM CHLORIDE	10043-52-4	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Skin contact	Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists.

Inhalation

Distributor: The Science Company 95 Lincoln St Denver, CO 80203 ph: 303-777-3777
Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion	Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Treat symptomatically.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	This product is not flammable.
Extinguishing media	
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	None known.
Protection of firefighters	
Protective equipment and precautions for firefighters	Firefighters should wear full protective gear. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Special protective equipment for fire-fighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal precautions	Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. Keep upwind. Ventilate the area. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for containment	If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Avoid dust formation.
	Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.
	Large Spills: Collect dust or particulates using a vacuum cleaner with a HEPA filter. Reduce airborne dust and prevent scattering by moistening with water.
	Never return spills in original containers for re-use. Clean surface thoroughly to remove residual contamination. Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Wear appropriate personal protective equipment. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure Controls / Personal Protection

Engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Personal protective equipment	
Eye / face protection	Chemical goggles are recommended.
Skin protection	Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

Respiratory protection

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Wear respirator if there is dust formation.

General hygiene considerations

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Granular.
Color	White to light grey
Odor	Odorless.
Odor threshold	Not available.
Physical state	Solid.
Form	Granular.
pH	8 - 9 Aqueous solution
Melting point	1421.6 °F (772 °C)
Freezing point	1421.6 °F (772 °C)
Boiling point	3038 °F (1670 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor density	Not available.
Specific gravity	2.15
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Molecular weight	110.99 g/mol
Molecular formula	Ca-Cl ₂

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions. The substance is hygroscopic and will absorb water by contact with the moisture in the air.
Conditions to avoid	Excessive heat. Water, moisture.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of calcium. Hydrogen chloride.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Test Results
CALCIUM CHLORIDE (10043-52-4)	Acute Oral LD50 Rat: 1000 mg/kg
Sensitization	Not a skin sensitizer.
Acute effects	Harmful if swallowed.
Local effects	Causes eye irritation. May cause skin irritation. Irritating to respiratory system.
Chronic effects	None known.

Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation	Contact with skin may cause irritation.
Epidemiology	No epidemiological data is available for this product.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Neurological effects	None known.
Reproductive effects	Contains no ingredient listed as toxic to reproduction
Teratogenicity	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Symptoms and target organs	Irritant effects.

12. Ecological Information

Ecotoxicological data

Product	Test Results
CALCIUM CHLORIDE (10043-52-4)	LC50 Fathead minnow (<i>Pimephales promelas</i>): 3930 mg/l 96.00 hours
Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	The product is not expected to be biodegradable.
Partition coefficient (n-octanol/water)	Not available

13. Disposal Considerations

Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity	None
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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 311 hazardous chemical
Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Saf-T-Data
Health: 1 - Slight
Flammability: 0 - None
Reactivity: 1 - Slight
Contact: 2 - Moderate
Lab Protective Equip: B - GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: G - Green (General Storage)

16. Labeling Info

Label Hazard Warning
WARNING

Harmful if swallowed. Causes eye irritation. May cause skin irritation. Irritating to respiratory system.

Label Precautions
Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.

Label First Aid
Immediately flush eyes with plenty of water for at least 15 minutes. Flush skin thoroughly with water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if irritation develops or persists. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center.

17. Other Information

NFPA ratings
Health: 2
Flammability: 0
Instability: 0

Disclaimer

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