

## MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information

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Product Name                    CALCIUM CHLORIDE ANHYDROUS  
Product Number                C4901  
Brand                            SIAL

Company                         Sigma-Aldrich  
Address                         3050 Spruce Street  
                                  SAINT LOUIS MO 63103 US

Technical Phone:               800-325-5832  
Fax:                             800-325-5052  
Emergency Phone:               314-776-6555

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Section 2 - Composition/Information on Ingredient

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Substance Name	CAS #	SARA 313
CALCIUM CHLORIDE	10043-52-4	No

Formula                    CaCl<sub>2</sub>  
Synonyms                   Calplus \* Caltac \* Dowflake \* Liquidow \* Peladow  
                              \* Snomelt \* Superflake anhydrous

RTECS Number:              EV9800000

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Section 3 - Hazards Identification

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## EMERGENCY OVERVIEW

Harmful.

Harmful if swallowed. Risk of serious damage to eyes.

## HMIS RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

## NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

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Section 4 - First Aid Measures

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## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

## INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

## DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious

amounts of water.

#### EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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### Section 5 - Fire Fighting Measures

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#### FLASH POINT

N/A

#### AUTOIGNITION TEMP

N/A

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### Section 7 - Handling and Storage

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#### HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Suitable: Keep tightly closed.

#### SPECIAL REQUIREMENTS

Moisture sensitive.

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### Section 8 - Exposure Controls / PPE

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES  
Wash thoroughly after handling.

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Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Solid Color: White Form: Crystals	
Property	Value	At Temperature or Pressure
Molecular Weight	110.99 AMU	
pH	N/A	
BP/BP Range	1,670 °C	
MP/MP Range	772 °C	
Freezing Point	N/A	
Vapor Pressure	0.01 mmHg	20 °C
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	2.15 g/cm <sup>3</sup>	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	0.006 Pas	20 °C
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	1.52	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

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Section 10 - Stability and Reactivity

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STABILITY

Stable: Stable.

Conditions to Avoid: Exposure to moisture may affect product quality.

Materials to Avoid: Boron oxides, Strong acids, Calcium oxide, Zinc, Methyl vinyl ether, Calcium chloride is attacked by bromine trifluoride.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen chloride gas, Calcium oxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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Section 11 - Toxicological Information

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#### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: Severe eye irritant.  
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.  
Ingestion: Harmful if swallowed.

#### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### TOXICITY DATA

Oral  
Rat  
1000 mg/kg  
LD50

Intraperitoneal  
Rat  
264 MG/KG  
LD50

Subcutaneous  
Rat  
2630 MG/KG  
LD50

Intramuscular  
Rat  
25 MG/KG  
LD50

Oral  
Mouse  
1940 mg/kg  
LD50

Intraperitoneal  
Mouse  
210 MG/KG  
LD50  
Remarks: Behavioral:Change in motor activity (specific assay).  
Behavioral:Convulsions or effect on seizure threshold.  
Behavioral:Somnolence (general depressed activity).

Subcutaneous  
Mouse  
823 MG/KG  
LD50

Intravenous  
Mouse  
42 MG/KG  
LD50

#### IRRITATION DATA

Skin  
Rabbit  
Remarks: No irritation effect  
Eyes

Rabbit  
Remarks: Severe irritation effect

#### CHRONIC EXPOSURE - CARCINOGEN

Species: Rat  
Route of Application: Oral  
Dose: 112 GM/KG  
Exposure Time: 20W  
Frequency: C  
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS  
criteria. Endocrine: Thyroid tumors.

#### CHRONIC EXPOSURE - MUTAGEN

Species: Rat  
Route: Intraperitoneal  
Dose: 2500 UMOL/KG  
Mutation test: Unscheduled DNA synthesis

Species: Rat  
Dose: 3500 MG/KG  
Cell Type: Ascites tumor  
Mutation test: Cytogenetic analysis

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#### Section 12 - Ecological Information

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No data available.

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#### Section 13 - Disposal Considerations

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##### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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#### Section 14 - Transport Information

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##### DOT

Proper Shipping Name: None  
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

##### IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

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#### Section 15 - Regulatory Information

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##### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: Xi  
Indication of Danger: Irritant.  
R: 36  
Risk Statements: Irritating to eyes.  
S: 22-24  
Safety Statements: Do not breathe dust. Avoid contact with skin.

##### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
Risk Statements: Harmful if swallowed. Risk of serious damage to

eyes.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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Section 16 - Other Information

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DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.