1. PRODUCT AND COMPANY IDENTIFICATION

Product Name          Calcium chloride dihydrate
Cat No.               BP510-100; BP510-250; BP510-500; C69-50; C69-500; C69-500LC; C70-500; C79-3; C79-3LC; C79-500
Synonyms              (Crystals/Powder/Granules/USP/FCC/EP/Certified ACS)
Recommended Use       Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!
Irritating to eyes. May cause skin and respiratory tract irritation. Hygroscopic.

Appearance Beige - White
Physical State Solid
odor odorless

Target Organs Eyes
Potential Health Effects
Acute Effects
Principle Routes of Exposure

Eyes                  Irritating to eyes.
Skin                  May cause irritation.
Inhalation            May cause irritation of respiratory tract. May be harmful if inhaled.
Ingestion             May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects None known.
See Section 11 for additional Toxicological information.
Aggravated Medical Conditions No information available.
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Haz/Non-haz</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calcium chloride, dihydrate</td>
<td>10035-04-8</td>
<td>&gt;95</td>
</tr>
<tr>
<td></td>
<td>Calcium chloride</td>
<td>10043-52-4</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion: Do not induce vomiting. Obtain medical attention.

Notes to Physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point: No information available.

Autoignition Temperature: No information available.

Explosion Limits:
- Upper: No data available
- Lower: No data available

Suitable Extinguishing Media: Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: No information available.

Sensitivity to Mechanical Impact: No information available.

Sensitivity to Static Discharge: No information available.

Specific Hazards Arising from the Chemical:
Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Protective Equipment and Precautions for Firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA:
- Health: 2
- Flammability: 0
- Instability: 1
- Physical hazards: N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.
Environmental Precautions

Methods for Containment and Cleanup

7. HANDLING AND STORAGE

Handling

Storage

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium chloride</td>
<td></td>
<td></td>
<td>TWA: 5 mg/m³</td>
</tr>
</tbody>
</table>

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/Face Protection

Skin and body protection

Respiratory Protection

Physical State

Appearance

odor

Odor Threshold

pH

Vapor Pressure

Vapor Density

Viscosity

Boiling Point/Range

Melting Point/Range

Decomposition temperature

Flash Point

Evaporation Rate

Specific Gravity

Solubility

log Pow

Molecular Weight

Molecular Formula

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10. STABILITY AND REACTIVITY

Stability
Hygroscopic.

Conditions to Avoid
Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.

Incompatible Materials
Strong oxidizing agents

Hazardous Decomposition Products
Hydrogen chloride gas

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (mg/kg (Rat))</th>
<th>LD50 Dermal (mg/kg (Rat))</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium chloride</td>
<td>1000</td>
<td>2630</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Irritation
Irritating to eyes

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
No information available.

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

Other Adverse Effects
See actual entry in RTECS for complete information.

Endocrine Disruptor Information
No information available.

12. ECOLOGICAL INFORMATION
12. ECOLOGICAL INFORMATION

Ecotoxicity
Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
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<tbody>
<tr>
<td>Calcium chloride, dihydrate</td>
<td>Not listed</td>
<td>Lepomis macrochirus: LC50: 10650 mg/L/96h</td>
<td>Not listed</td>
<td>EC50: 3005 mg/L/48h</td>
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<tr>
<td>Calcium chloride</td>
<td>Not listed</td>
<td>Lepomis macrochirus: LC50: 10650 mg/L/96h</td>
<td>Not listed</td>
<td>EC50: 52 mg/L/48h</td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available

Bioaccumulation/ Accumulation
No information available

Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>Log Pow</th>
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<tbody>
<tr>
<td>Calcium chloride, dihydrate</td>
<td>0.05</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
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<td></td>
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<tr>
<td>Calcium chloride</td>
<td></td>
<td></td>
<td>233-140-8</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Legend:
Thermo Fisher Scientific - Calcium chloride dihydrate

Revision Date 22-Sep-2009

X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(5)).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313
Not applicable

SARA 311/312 Hazardous Categorization
<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
Not Applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know
Not applicable

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade
No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D2B Toxic materials

16. OTHER INFORMATION

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date
14-Aug-2009

Print Date
22-Sep-2009

Revision Summary

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS