Calcium chloride, dihydrate
Safety Data Sheet
according to Regulation (EU) 2015/830
Date of issue: 11/11/2016
Doc No: SDS-909.023/0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : Calcium chloride, dihydrate
EC index no : 017-013-00-2
EC no : 233-140-8
CAS No : 10035-04-8
Type of product : Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry state only
Formula : CaCl2.2H2O
Synonyms : cal plus (=calcium chloride, dihydrate) / calcium chloride-2-hydrate / calcium dicloride, dihydrate / replenisher(calcium) / sinjarite

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : De-icing salt
Anti-dusting agent
Cement: additive
Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB GmbH
Bahnhofstrasse 10, D-97877
Wertheim - Germany
T +49 93 42 912 355 - F +49 93 42 912 357
prodsafe@isolab.de

1.4. Emergency telephone number

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Giftnotruf der Charité</td>
<td>Hindenburgdamm 30, 12203 Berlin</td>
<td>+49 (0) 30 19240</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Serious eye damage/eye irritation, Category 2 H319

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects
Causes serious eye irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

Signal word (CLP) : Warning
Hazard statements (CLP) : H319 - Causes serious eye irritation
Precautionary statements (CLP) : P280 - Wear eye protection, face protection
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
2.3. Other hazards
No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium chloride, dihydrate</td>
<td>(CAS No) 10035-04-8 (EC no) 233-140-8 (EC index no) 017-013-00-2</td>
<td>99 - 100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:

First-aid measures after inhalation:
Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact:
Rinse with water. Take victim to a doctor if irritation persists.

First-aid measures after eye contact:
Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:
Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation:
EXPOSURE TO HIGH CONCENTRATIONS: Coughing. Slight irritation. Runny nose.

Symptoms/injuries after skin contact:
Dry skin.

Symptoms/injuries after eye contact:
Irritation of the eye tissue. Visual disturbances.

Symptoms/injuries after ingestion:

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Adapt extinguishing media to the environment.

Unsuitable extinguishing media:
EXTINGUISHING MEDIA FOR SURROUNDING FIRES: Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard:
DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard:
INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

Precautionary measures fire:
Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions:
Cool tanks/drum with water spray/remove them into safety. Dilute toxic gases with water spray.

Protection during firefighting:
Heat/fire exposure: compressed air/oxygen apparatus.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.

Methods for cleaning up: Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.

Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: metals. water/moisture.

Storage area: Store in a dry area. Keep container in a well-ventilated place. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: hermetrical. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.


7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available
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8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Personal protective equipment:
Safety glasses.

Materials for protective clothing:
GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available

Hand protection:
Gloves

Eye protection:
Safety glasses. In case of dust production: protective goggles

Skin and body protection:
Protective clothing

Respiratory protection:
Dust production: dust mask with filter type P1

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Molecular mass: 147.01 g/mol
Colour: Colourless to white.
Odour: Odourless.
Odour threshold: No data available
pH: 4.5 - 8.5 (50 g/l, H₂O, 20 °C)
Relative evaporation rate (butylacetate=1): No data available
Melting point: 176 °C
Freezing point: Not applicable
Boiling point: No data available
Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: No data available
Flammability (solid, gas): Non flammable
Vapour pressure: No data available
Relative vapour density at 20 °C: No data available
Relative density: 1.85
Density: 1850 kg/m³
Water: 1000 g/l (0°C)
Log Pow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: Not applicable

9.2. Other information
Minimum ignition energy: Not applicable
VOC content: Not applicable (inorganic)
Other properties: Hygroscopic.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts exothermically with water (moisture). Reacts slowly on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen). On burning: release of toxic and corrosive gases/vapours (hydrogen chloride, chlorine). Reacts violently with (some) compounds.

10.2. Chemical stability
Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>Calcium chloride, dihydrate (10035-04-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1.000 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Not classified as dangerous for the environment according to the criteria of Directive 67/548/EEC. Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.


<table>
<thead>
<tr>
<th>Calcium chloride, dihydrate (10035-04-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 2</td>
</tr>
<tr>
<td>10650 mg/l (LC50; 96 h; Lepomis macrochirus)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>144 mg/l (EC50; 48 h; Daphnia magna)</td>
</tr>
</tbody>
</table>
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12.2. Persistence and degradability
Calcium chloride, dihydrate (10035-04-8)
Persistence and degradability
Biodegradability: not applicable. No (test)data on mobility of the substance available.
ThOD
Not applicable (inorganic)

12.3. Bioaccumulative potential
Calcium chloride, dihydrate (10035-04-8)
Bioaccumulative potential
Not bioaccumulative.

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods
Dispose of contents/container in accordance with licensed collector’s sorting instructions.
Product/Packaging disposal recommendations
Remove waste in accordance with local and/or national regulations. Should not be landfilled with household waste. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Precipitate/make insoluble. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment.

Additional information
LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.
European List of Waste (LoW) code
16 05 07* - discarded inorganic chemicals consisting of or containing dangerous substances

SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

<table>
<thead>
<tr>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>ADN</th>
<th>RID</th>
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<tr>
<td>14.1.</td>
<td>UN number</td>
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<td>14.2.</td>
<td>UN proper shipping name</td>
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<td>14.3.</td>
<td>Transport hazard class(es)</td>
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<td>14.4.</td>
<td>Packing group</td>
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<td>Not applicable</td>
<td>Not applicable</td>
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<td>14.5.</td>
<td>Environmental hazards</td>
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<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>Special precautions for user</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

14.6. Special precautions for user
- Overland transport
  Not applicable
- Transport by sea
  Not applicable
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- Air transport
Not applicable

- Inland waterway transport
Not applicable

- Rail transport
Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Calcium chloride, dihydrate is not on the REACH Candidate List
Calcium chloride, dihydrate is not on the REACH Annex XIV List

VOC content : Not applicable (inorganic)

15.1.2. National regulations

Germany
VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 220)
WGK remark : Internal classification water polluting based on the R-phrases according to method VwVwS (Anhang 3)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</td>
</tr>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>LC50</td>
<td>Median lethal concentration</td>
</tr>
<tr>
<td>LD50</td>
<td>Median lethal dose</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent Bioaccumulative Toxic</td>
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<tr>
<td>RID</td>
<td>Regulations concerning the International Carriage of Dangerous Goods by Rail</td>
</tr>
<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and Very Bioaccumulative</td>
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</table>
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Data sources:

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Eye Irrit. 2</th>
<th>Serious eye damage/eye irritation, Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>

SDS ISOLAB

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.