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

1.1 Product identifier
Identification of the substance:
Calcium chloride dihydrate
Article number:
5239
Registration number (REACH):
01-2119494219-28-xxxx
Index No:
017-013-00-2
EC number:
233-140-8
CAS number:
10035-04-8

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses:
laboratory chemical

1.3 Details of the supplier of the safety data sheet
Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany
Telephone:
+49 (0) 721 - 56 06 0
Telefax:
+49 (0) 721 - 56 06 149
e-mail:
sicherheit@carlroth.de
Website:
www.carlroth.de
Competent person responsible for the safety data sheet:
Department Health, Safety and Environment

1.4 Emergency telephone number
Emergency information service:
Poison Centre Munich:
+49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Classification acc. to GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>3.3</td>
</tr>
</tbody>
</table>
Remarks
For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

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

Signal word  Warning

Pictograms

Hazard statements
H319  Causes serious eye irritation.

Precautionary statements

Precautionary statements - prevention
P264  Wash thoroughly after handling.
P280  Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - response
P305+P351+P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313  If eye irritation persists: Get medical advice/attention.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

Symbol(s)

H319  Causes serious eye irritation.
P305+P351+P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313  If eye irritation persists: Get medical advice/attention.

2.3 Other hazards
There is no additional information.
Take off contaminated clothing. Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Rinse mouth. Call a doctor if you feel unwell.

Gastrointestinal complaints, Nausea, Irritation, Vomiting

none

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance  Calcium chloride dihydrate
Index No  017-013-00-2
Registration number (REACH)  01-2119494219-28-xxxx
EC number  233-140-8
CAS number  10035-04-8
Molecular formula  CaCl₂ * 2 H₂O
Molar mass  147 g/mol

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact
Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion
Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed
Gastrointestinal complaints, Nausea, Irritation, Vomiting

4.3 Indication of any immediate medical attention and special treatment needed
none
Co-ordinate fire-fighting measures to the fire surroundings
- Water spray
- Foam
- Dry extinguishing powder
- Carbon dioxide (CO2)
- Water jet

Non-combustible.

In case of fire may be liberated: hydrogen chloride (HCl)

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

Do not breathe dust. Avoid contact with skin, eyes and clothes.

Keep away from drains, surface and ground water.

Covering of drains.

Take up mechanically. Control of dust.

Place in appropriate containers for disposal.

Reference to other sections
- Hazardous combustion products: see section 5.
- Personal protective equipment: see section 8.
- Incompatible materials: see section 10.
- Disposal considerations: see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
No special measures are necessary.

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities
Store in a dry place.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice
• Ventilation requirements
  Use local and general ventilation.
• Specific designs for storage rooms or vessels
  Recommended storage temperature: 15 - 25 °C.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
National limit values
  Occupational exposure limit values (Workplace Exposure Limits)
  Data are not available.

8.2 Exposure controls
Individual protection measures (personal protective equipment)

Eye/face protection
Use safety goggle with side protection.

Skin protection
• hand protection
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
• type of material
  NBR (Nitrile rubber)
• material thickness
  >0,11 mm
Calcium chloride dihydrate ≥99 %, p.a., ACS

article number: 5239

- breakthrough times of the glove material
  >480 minutes (permeation: level 6)

- other protection measures
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection
Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White).

Environmental exposure controls
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**
- Physical state: solid (crystalline)
- Colour: white
- Odour: odourless
- Odour threshold: No data available

**Other physical and chemical parameters**
- pH (value): 4.5 - 9.2 (50 g/l, 20 °C)
- Melting point/freezing point: 176 °C
- Initial boiling point and boiling range: This information is not available.
- Flash point: not applicable
- Evaporation rate: no data available
- Flammability (solid, gas): Non-flammable
  - Explosive limits
    - lower explosion limit (LEL): this information is not available
    - upper explosion limit (UEL): this information is not available
  - Explosion limits of dust clouds: these information are not available
  - Vapour pressure: This information is not available.
  - Density: 1.85 g/cm³ at 20 °C
  - Vapour density: This information is not available.
  - Relative density: Information on this property is not available.
  - Solubility(ies)
  - Water solubility: 1,000 g/l at 0 °C
Safety Data Sheet

Calcium chloride dihydrate ≥99 %, p.a., ACS

Partition coefficient
n-octanol/water (log KOW)  This information is not available.
Auto-ignition temperature  Information on this property is not available.
Decomposition temperature  no data available
Viscosity  not relevant (solid matter)
Explosive properties  Shall not be classified as explosive
Oxidising properties  none

9.2 Other information
There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is not reactive under normal ambient conditions.

10.2 Chemical stability
Hygroscopic solid.

10.3 Possibility of hazardous reactions
Exothermic reaction with: Water,
Release of an acute toxic gas: Metals, Zinc

10.4 Conditions to avoid
Protect from moisture.

10.5 Incompatible materials
There is no additional information.

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Shall not be classified as acutely toxic.

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>1,000 mg/kg</td>
<td>rat</td>
<td>anhydrous</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Causes serious eye irritation.
Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed
vomiting, nausea, gastrointestinal complaints

• If in eyes
data are not available

• If inhaled
data are not available

• If on skin
data are not available

Other information
None

SECTION 12: Ecological information

12.1 Toxicity
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Method</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>144 mg/l</td>
<td>daphnia magna</td>
<td>anhydrous</td>
<td>48 h</td>
</tr>
<tr>
<td>LC50</td>
<td>10,650 mg/l</td>
<td>bluegill (Lepomis macrochirus)</td>
<td>anhydrous</td>
<td>96 h</td>
</tr>
</tbody>
</table>

12.2 Process of degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
Data are not available.

12.4 Mobility in soil
Data are not available.
Calcium chloride dihydrate ≥99 %, p.a., ACS

article number: 5239

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Other adverse effects
Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information
Do not empty into drains.

13.2 Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
(not subject to transport regulations)

14.2 UN proper shipping name
not relevant

14.3 Transport hazard class(es)
not relevant

14.4 Packing group
not relevant

14.5 Environmental hazards
none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations
• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
  Not subject to ADR, RID and ADN.
• International Maritime Dangerous Goods Code (IMDG)
  Not subject to IMDG.
• International Civil Aviation Organization (ICAO-IATA/DGR)
  Not subject to ICAO-IATA.
SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

• Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)
  Not listed.
• Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)
  Not listed.
• Regulation 850/2004/EC on persistent organic pollutants (POP)
  Not listed.
• Restrictions according to REACH, Annex XVII
  not listed
• List of substances subject to authorisation (REACH, Annex XIV)
  not listed

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II
not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)
not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
not listed

National inventories
Substance is listed in the following national inventories:

- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

16.1 Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Registration number (REACH): This information is not available.</td>
<td>Registration number (REACH): 01-2119494219-28-xxxx</td>
</tr>
<tr>
<td>3.1</td>
<td></td>
<td>Registration number (REACH): 01-2119494219-28-xxxx</td>
</tr>
<tr>
<td>9.1</td>
<td>Density: 1.9 g/cm³ at 20 °C</td>
<td>Density: 1.85 g/cm³ at 20 °C</td>
</tr>
<tr>
<td>10.4</td>
<td>Conditions to avoid: There are no specific conditions known which have to be avoided.</td>
<td>Conditions to avoid: Protect from moisture.</td>
</tr>
<tr>
<td>14.8</td>
<td>• International Civil Aviation Organization (ICAO-IATA/DGR); Not subject to ICAO-IATA.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Abbreviations and acronyms: change in the listing (table)</td>
<td></td>
</tr>
</tbody>
</table>

Australia (en)   Page 10 / 11
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>index No</td>
<td>the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

### Key literature references and sources for data

- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319</td>
<td>causes serious eye irritation</td>
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