



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision date 01.06.2016

Version: 2.2, ID-No.: 1053-01_GB-GB

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

- 1.1. Product identifier:** Calcium Chloride Special
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Relevant identified uses: Cooling brine for refrigeration plants
- 1.3. Details of the supplier of the safety data sheet**
Company: TYFOROP Chemie GmbH, Anton-Rée-Weg 7, D-20537 Hamburg
Telephone/Telefax: Tel.: +49 (0)40 20 94 97 0, Fax: +49 (0)40 20 94 97 20
E-Mail: msds@tyfo.de (E-Mail adress of person responsible for SDS)
- 1.4. Emergency telephone number:** Tel.: +49 (0)551-19240 GIZ-Nord Poison Center

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Eye Irrit. 2, H319.
The full text of the abbreviations is listed in section 16.

- 2.2. Label elements**
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

| | |
|---|--|
| Hazard pictograms | Signal word Warning |
|  | Hazard Statements H319 Causes serious eye irritation |
| | Precautionary Statements (Prevention) P280 Wear protective gloves/protective clothing/eye protection/face protection P264 Wash skin with plenty of water and soap thoroughly after handling |
| | Precautionary Statements (Response) P305+P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove +P338 contact lenses if present and easy to do - continue rinsing P337+P313 If eye irritation persists: Get medical advice/medical attention |
| | Precautionary Statements (Disposal) - |
| | Hazard determinant component for labelling Calcium chloride |

- 2.3. Other hazards:** The product could cause minor skin irritation and dry skin.

SECTION 3: Composition/information on ingredients

- 3.2. Mixtures**
Chemical nature: Aqueous solution of Calcium chloride with inhibitors.
Hazardous components

| Substance / REACH registration number | Content | CAS number | CE number | INDEX number | Classification acc. CLP |
|---------------------------------------|---------|------------|-----------|--------------|-------------------------|
| Calcium chloride 01-2119494219-28 | < 35 % | 10043-52-4 | 233-140-8 | 017-013-00-2 | Eye Irrit. 2, H319 |

The full text of the abbreviations is listed in section 16.

SECTION 4: First aid measures

- 4.1. Description of first aid measures**
General advice: Remove contaminated clothing.

SECTION 4: First aid measures - Continuation

- I **Protection of first-aiders:** First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- I **If inhaled:** If inhaled, remove to fresh air. Get medical attention if symptoms occur.
- I **On skin contact:** Immediately wash thoroughly with soap and water. Get medical attention if symptoms occur.
- I **On contact with eyes:** Wash affected eyes for at least 15 minutes under running water with eyelids held open and get medical attention.
- I **On ingestion:** Immediately rinse mouth thoroughly with water. DO NOT induce vomiting. Get medical attention if symptoms occur.

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

The most important known symptoms and effects are described in sections 2 and/or 11. Further important symptoms and effects are so far not known.

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

Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- I **Suitable extinguishing media:** The product is not combustible. Water spray. Alcohol-resistant foam. Dry powder. Carbon dioxide (CO₂).
- I **Unsuitable extinguishing media:** None known.

5.2. Special hazards arising from the substance or mixture

- I **Specific hazards during firefighting:** Exposure to combustion products may be a hazard to health.
- I **Hazardous combustion products:** Fire may cause evolution of hydrogen chloride gas.

5.3. Advice for fire-fighters

- I **Special protective equipment:** In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
- I **Specific extinguishing methods:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- I **Personal precautions:** Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.2. Environmental precautions

- I Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

- I **Methods for cleaning up:** Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 provide information regarding certain local or national requirements.

- I **6.4. Reference to other sections:** See sections 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- I **Technical measures:** See Engineering measures in section 8.
- I **Local/total ventilation:** Use only with adequate ventilation.
- I **Advice on safe handling:** Avoid contact with eyes and skin. Handle in accordance with good in-
dance with good industrial hygiene and safety practice. Take care to
prevent spills, waste and minimize release to the environment.
- I **Advice on protection against fire and explosion:** Observe the general rules of industrial fire protection.
- I **Hygiene measures:** When using do not eat, drink or smoke. Wash contaminated clothing be-
fore re-use.

7.2. Conditions for safe storage, including any incompatibilities

- I **Requirements for storage areas and containers:** Store containers tightly sealed in a cool, dry and well ventilated place.
Store in accordance with the particular national regulations.
- I **Advice on common storage:** Keep away from food, beverages and animal feedstuffs.

7.3. Specific end uses

For the relevant identified uses listed in section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure control/personal protection

8.1. Control parameters

Components with occupational exposure limits

Contains no substances with occupational exposure limit values.

DNEL values - information on component Calcium chloride

| End use | Exposure routes | Potential health effects | Value |
|-----------|-----------------|--------------------------|-----------------------|
| Workers | Inhalation | Long-term local effects | 5 mg/m ³ |
| Workers | Inhalation | Short-term local effects | 10 mg/m ³ |
| Consumers | Inhalation | Long-term local effects | 2.5 mg/m ³ |
| Consumers | Inhalation | Short-term local effects | 5 mg/m ³ |

8.2. Exposure controls

- I **Engineering measures:** Ensure adequate ventilation, especially in confined areas. Minimize work-
place exposure concentrations.
- Personal protective equipment**
- I **Eye protection:** Safety glasses with side-shields (frame goggles, e.g. EN 166).
 - I **Hand protection:** Chemical resistant protective gloves (EN 374). Material: butyl rubber.
Protective index 6. Break through time: >480 minutes. Glove thickness:
0.6 - 0.8 mm. Remarks: Choose gloves to protect hands against chemi-
cals depending on the concentration and quantity of the hazardous sub-
stance and specific to place of work. For special applications, we re-
commend clarifying the resistance to chemicals of the aforementioned
protective gloves with the manufacturer. Wash hands before breaks and
at the end of workday.
 - I **Skin and body protection:** Wash skin thoroughly after contact.
 - I **Respiratory protection:** not necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- I **Appearance:** liquid.
- I **Colour:** colourless to light yellow.
- I **Odour:** almost odourless.
- I **Odour threshold:** No data available.

SECTION 9: Physical and chemical properties - Continuation

| | | |
|---|------------------------------|--------------------------|
| pH value (20 °C): | 8.5 - 9.0. | (ASTM D 1287) |
| Solidification temperature: | ca. -21.0 °C. | (DIN ISO 3016) |
| Initial boiling point/boiling range: | >100 °C. | (ASTM D 1120) |
| Flash point: | not applicable. | (DIN EN 22719, ISO 2719) |
| Evaporation rate: | No data available. | |
| Flammability (solid, gas): | not applicable. | |
| Upper explosion limit: | not applicable. | |
| Lower explosion limit: | not applicable. | |
| Vapour pressure (20 °C): | ca. 20 hPa. | (calculated) |
| Vapour density: | No data available. | |
| Density (20 °C): | ca. 1.34 g/cm ³ . | (DIN 51757) |
| Solubility: | Water solubility: soluble. | |
| Partition coefficient n-octanol/H ₂ O: | not applicable. | |
| Auto-ignition temperature: | not applicable. | |
| Decomposition temperature: | not applicable. | |
| Viscosity (dynamic, 20 °C): | ca. 6.1 mPa·s. | (DIN 51562) |
| Explosive properties: | not explosive. | |
| Oxidizing properties: | not oxidizing. | |
| 9.2. Other information: | No other information. | |

SECTION 10: Stability and reactivity

| | |
|---|--|
| 10.1. Reactivity: | No hazardous reactions if stored and handled as prescribed/indicated. |
| 10.2. Chemical stability: | The product is stable if stored and handled as prescribed/indicated. |
| 10.3. Possibility of hazardous reactions: | No hazardous reactions if stored and handled as prescribed/indicated. |
| 10.4. Conditions to avoid: | No conditions to avoid anticipated. |
| 10.5. Incompatible materials: | Substances to avoid: strong reducing and oxidizing agents. Stainless steel. |
| 10.6. Hazardous decomposition products: | No hazardous decomposition products if stored and handled as prescribed/indicated. |

SECTION 11: Toxicological information

| | |
|---|--|
| 11.1. Information on toxicological effects | |
| Information on likely routes of exposure: | Inhalation. Skin contact. Ingestion. Eye contact. |
| Acute toxicity: | Not classified based on available information. Information on component Calcium chloride: Acute oral toxicity: LD50 (Rat): 2301 mg/kg, method: OECD test guideline 401. Symptoms: After uptake of large quantities: Stomach/intestinal disorders. Acute inhalation toxicity: No data available. Symptoms: Possible damages: mucosal irritations. Acute dermal toxicity: LD50 (Rat): 2630 mg/kg. |
| Skin corrosion/irritation: | Not classified based on available information. Information on component Calcium chloride: No skin irritation (Rabbit), method: OECD test guideline 404. |
| Serious eye damage/eye irritation: | Causes serious eye irritation. Information on component Calcium chloride: Irritating to eyes, (Rabbit), method: OECD test guideline 405. |
| Respiratory or skin sensitisation: | Skin sensitisation: Not classified based on available information. Respiratory sensitisation: Not classified based on available information. Information on component Calcium chloride: Skin contact: not sensitising (Guinea pig), method: OECD test guideline 406. |
| Germ cell mutagenicity: | Not classified based on available information. |
| Carcinogenicity: | Not classified based on available information. |
| Reproductive toxicity: | Not classified based on available information. |

SECTION 11: Toxicological information - Continuation

- I **Specific target organ toxicity (single exposure):** Not classified based on available information.
- I **Specific target organ toxicity (repeated exposure):** Not classified based on available information.
- I **Repeated dose toxicity:** Not classified based on available information.
- I **Aspiration toxicity:** Not classified based on available information.

SECTION 12: Ecological information

12.1. Toxicity

Information on component Calcium chloride

| Toxicity to | Value / exposure time | Species |
|---|------------------------|--|
| fish | LC50: 4630 mg/l / 96 h | Pimephales promelas (Fathead minnow) |
| daphnia and other aquatic invertebrates | LC50: 2400 mg/l / 48 h | Daphnia magna (Water flea) Method: OECD test guideline 202 |
| algae | EC50: 2900 mg/l / 72 h | Pseudokirchneriella subcapitata (Green algae) Method: OECD test guideline 201 |

12.2. Persistence and degradability: No data available.

12.3. Bioaccumulative potential: No data available.

12.4. Mobility in soil: No data available.

12.5-Results of PBT and vPvB assessment: The product does not contain a substance fulfilling the PBT criteria (persistent/bioaccumulative/toxic) or the vPvB criteria (very persistent/very bioaccumulative).

12.6. Other adverse effects: No data available.

12.7. Further information: No further information.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- I **Product:** Dispose of in accordance with local regulations. According to the European Waste Catalogue (EWC), waste codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
- I **Contaminated packaging:** Dispose of as the product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

| | ADR/ RID | ADN | IMDG | IATA/ ICAO |
|------------------------------------|--|-----|------|---------------|
| | Not classified as a dangerous good under transport regulations | | | |
| 14.1. UN number | - | - | - | - |
| 14.2. UN proper shipping name | - | - | - | - |
| 14.3. Transport hazard classes | - | - | - | - |
| 14.4. Packing group | - | - | - | - |
| 14.5. Environmental hazards | - | - | - | - |
| 14.6. Special precautions for user | - | - | - | - |

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: -

SECTION 15: Regulatory information

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

| Legal basis | Remark / Evaluation |
|---|---------------------|
| Regulation (EC) No. 649/2012 of the European Parliament and the Council concerning the export and import | Not applicable |
| REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) | Not applicable |
| Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer | Not applicable |
| Regulation (EC) No. 850/2004 on persistent organic pollutants | Not applicable |
| Seveso III - Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances | Not applicable |

Other regulations

No further information.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment was not carried out for the product.

SECTION 16: Other information

Full text of the abbreviations of classifications, H-Statements and R-Phrases used in sections 2 and 3

Eye Irrit. 2 Eye irritation, Category 2
H319 Causes serious eye irritation

Other abbreviations used in this safety data sheet in alphabetical order

ADN European agreement concerning the international carriage of dangerous goods by inland waterways
ADR European agreement concerning the international carriage of dangerous goods by road
ASTM American Society for Testing and Materials
CAS number Chemical Abstracts Service number
CLP Regulation (EC) No. 1272/2008 on classification, labeling and packaging of chemical substances and mixtures
DIN German Institute for Standardisation/German Industrial Standard
DNEL Derived No Effect Level
EC50 Median Effective Concentration
EC number EINECS number (European Inventory of Existing Substances) or ELINCS number (European List of Notified Chemical Substances)
IATA International Air Transport Association
IBC International Bulk Chemicals
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods Code
INDEX number Identification code for hazardous substances, Annex VI of Regulation (EC) No. 1272/2008
ISO International Organisation for Standardisation/International Standard
LC50 Median Lethal Concentration
LD50 Median Lethal Dose
MARPOL International Convention for the Prevention of Marine Pollution from Ships
OECD Organisation for Economic Cooperation and Development
REACH Regulation (EC) No. 1907/2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals
RID Regulation concerning the international carriage of dangerous goods by rail

Further information

Sources of key data used to compile the safety data sheet: Internal technical data, data from component SDS, OECD eChem Portal search results and European Chemicals Agency [ECHA].

Revision date: 01.06.2016
Date of previous version: 01.04.2014

SECTION 16: Other information - Continuation

Vertical lines in the left hand margin indicate an amendment from the previous version.

- I The information provided in this safety data sheet (SDS) is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific product identified at the top of this SDS and may not be valid when the SDS product is used in combination with any other materials or in any process, unless specified in the text. Product users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS product in the user's end product, if applicable.