

## SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

### CALCIUM CHLORIDE BRINE 8.4-11.6 PPG

Revision Date: 16-Sep-2015

Revision Number: 23

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

##### 1.1. Product Identifier

Product Name CALCIUM CHLORIDE BRINE 8.4-11.6 PPG  
Internal ID Code HM003585

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

Recommended Use Brine  
Sector of use Refer to the Annex for a listing of uses.

##### 1.3. Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.  
Halliburton House, Howemoss Crescent  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

[www.halliburton.com](http://www.halliburton.com)

For further information, please contact

E-Mail address: [fdunexchem@halliburton.com](mailto:fdunexchem@halliburton.com)

##### 1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

| Emergency telephone - §45 - (EC)1272/2008 |   |
|---|---|
| Europe                                    | 112   |
| Croatia                                   | Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health) |
| Cyprus                                    | +210 7793777  |
| Denmark                                   | Poison Control Hotline (DK): +45 82 12 12 12  |
| France                                    | ORFILA (FR): + 01 45 42 59 59   |
| Germany                                   | Poison Center Berlin (DE): +49 030 30686 790  |
| Italy                                     | Poison Center, Milan (IT): +39 02 6610 1029   |
| Netherlands                               | National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)                       |
| Norway                                    | Poisons Information (NO): + 47 22 591300  |
| Poland                                    | Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97  |
| Romania                                   | +40 21 318 36 06  |
| Spain                                     | Poison Information Service (ES): +34 91 562 04 20   |
| United Kingdom                            | NHS Direct (UK): +44 0845 46 47   |

#### SECTION 2: Hazards Identification

##### 2.1. Classification of the substance or mixture

###### REGULATION (EC) No 1272/2008

Serious Eye Damage / Eye Irritation Category 2 - (H319)

##### 2.2. Label Elements

Hazard Pictograms



**Signal Word**

**Warning**

**Hazard Statements**

H319 - Causes serious eye irritation

**Precautionary Statements - EU (§28, 1272/2008)**

P264 - Wash face, hands and any exposed skin thoroughly after handling

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

P337 + P313 - If eye irritation persists: Get medical advice/attention

**Contains**

**Substances**

Calcium chloride

**CAS Number**

10043-52-4

**2.3. Other Hazards**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**SECTION 3: Composition/information on Ingredients**

**3.2. Mixtures**

Mixture

| Substances       | EINECS    | CAS Number | PERCENT (w/w) | EU - CLP Substance Classification | REACH No.        |
|------------------|-----------|------------|---------------|-----------------------------------|------------------|
| Calcium chloride | 233-140-8 | 10043-52-4 | 30 - 60%      | Eye Irrit. 2A (H319)              | 01-2119494219-28 |

For the full text of the H-phrases mentioned in this Section, see Section 16

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin**

Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

**Ingestion**

Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**4.2. Most Important symptoms and effects, both acute and delayed**

May cause eye irritation.

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

**Notes to Physician**

Treat symptomatically

**SECTION 5: Firefighting Measures**

**5.1. Extinguishing media**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**5.2. Special hazards arising from the substance or mixture****Special Exposure Hazards**

None anticipated

**5.3. Advice for firefighters****Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

See Section 8 for additional information

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

**6.4. Reference to other sections**

See Section 8 and 13 for additional information.

**SECTION 7: Handling and Storage****7.1. Precautions for Safe Handling**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in a cool well ventilated area. Keep container closed when not in use.

**7.3. Specific End Use(s)****Exposure Scenario**

Please refer to the attached Annex for a listing of exposure scenarios.

**Other Guidelines**

No information available

**SECTION 8: Exposure Controls/Personal Protection****8.1. Control parameters****Exposure Limits**

| Substances       | CAS Number | EU             | UK                   | Netherlands    | France         |
|------------------|------------|----------------|----------------------|----------------|----------------|
| Calcium chloride | 10043-52-4 | Not applicable | 10 mg/m <sup>3</sup> | Not applicable | Not applicable |

| Substances       | CAS Number | Germany        | Spain          | Portugal       | Finland        |
|------------------|------------|----------------|----------------|----------------|----------------|
| Calcium chloride | 10043-52-4 | Not applicable | Not applicable | Not applicable | Not applicable |

| Substances       | CAS Number | Austria        | Ireland        | Switzerland    | Norway         |
|------------------|------------|----------------|----------------|----------------|----------------|
| Calcium chloride | 10043-52-4 | Not applicable | Not applicable | Not applicable | Not applicable |

| Substances       | CAS Number | Italy          | Poland         | Hungary        | Czech Republic           |
|------------------|------------|----------------|----------------|----------------|--------------------------|
| Calcium chloride | 10043-52-4 | Not applicable | Not applicable | Not applicable | TWA: 5 mg/m <sup>3</sup> |

| Substances       | CAS Number | Denmark        | Romania        | Croatia        | Cyprus         |
|------------------|------------|----------------|----------------|----------------|----------------|
| Calcium chloride | 10043-52-4 | Not applicable | Not applicable | Not applicable | Not applicable |

**Derived No Effect Level (DNEL)****Worker**

| Substances | Long-term | Acute / short | Long-term | Acute / short | Long-term | Acute / short | Long-term | Acute / short | Hazards for |
|------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-------------|
|            |           |               |           |               |           |               |           |               |             |

|                  |   |  |                                      |   |                                     |  |                                  |                                       |                          |
|------------------|---|--|--------------------------------------|---|-------------------------------------|--|----------------------------------|---------------------------------------|--------------------------|
|                  | exposure - systemic effects, Inhalation | term exposure - systemic effects, Inhalation | exposure - local effects, Inhalation | term exposure - local effects, Inhalation | exposure - systemic effects, Dermal | term exposure - systemic effects, Dermal | exposure - local effects, Dermal | term exposure - local effects, Dermal | the eyes - local effects |
| Calcium chloride | Not available                           | Not available                                | 5 mg/m <sup>3</sup>                  | 10 mg/m <sup>3</sup>                      | Not available                       | Not available                            | Not available                    | Not available                         | Not available            |

**General Population**

|                  |   |  |  |   |   |  |  |   |   |   |                                      |
|------------------|---|--|--|---|---|--|--|---|---|---|--------------------------------------|
| Substances       | Long-term exposure - systemic effects, Inhalation | Acute / short term exposure - systemic effects, Inhalation | Long-term exposure - local effects, Inhalation | Acute / short term exposure - local effects, Inhalation | Long-term exposure - systemic effects, Dermal | Acute / short term exposure - systemic effects, Dermal | Long-term exposure - local effects, Dermal | Acute / short term exposure - local effects, Dermal | Long-term exposure - systemic effects, Oral | Acute / short term exposure - local effects, Oral | Hazards for the eyes - local effects |
| Calcium chloride | Not available                                     | Not available  | 2.5 mg/m <sup>3</sup>                          | 5 mg/m <sup>3</sup>                                     | Not available                                 | Not available  | Not available                              | Not available                                       | Not available                               | Not available                                     | Not available                        |

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment**

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection**

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)

**Hand Protection**

Polychloroprene gloves with natural-latex liner. Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)  
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection**

Normal work coveralls.

**Eye Protection**

Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions**

Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

**SECTION 9: Physical and Chemical Properties**

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid **Color:** Clear  
**Odor:** Odorless **Odor Threshold:** No information available

| Property                         | Values            |
|----------------------------------|-------------------|
| Remarks/ - Method                |                   |
| <b>pH:</b>                       | 5.2               |
| <b>Freezing Point/Range</b>      | -4 °C             |
| <b>Melting Point/Range</b>       | No data available |
| <b>Boiling Point/Range</b>       | 110 °C / 230 °F   |
| <b>Flash Point</b>               | No data available |
| <b>Flammability (solid, gas)</b> | No data available |
| <b>upper flammability limit</b>  | No data available |
| <b>lower flammability limit</b>  | No data available |
| <b>Evaporation rate</b>          | No data available |
| <b>Vapor Pressure</b>            | No data available |
| <b>Vapor Density</b>             | No data available |
| <b>Specific Gravity</b>          | 1.01 - 1.39       |
| <b>Water Solubility</b>          | Soluble in water  |

|  |                          |
|--|--------------------------|
| Solubility in other solvents           | No data available        |
| Partition coefficient: n-octanol/water | No data available        |
| Autoignition Temperature               | No data available        |
| Decomposition Temperature              | No data available        |
| Viscosity                              | No data available        |
| Explosive Properties                   | No information available |
| Oxidizing Properties                   | No information available |

**9.2. Other information**

|                 |                   |
|-----------------|-------------------|
| VOC Content (%) | No data available |
|-----------------|-------------------|

**SECTION 10: Stability and Reactivity****10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical Stability**

Stable

**10.3. Possibility of Hazardous Reactions**

Will Not Occur

**10.4. Conditions to Avoid**

None anticipated

**10.5. Incompatible Materials**

Amphoteric metals such as aluminum, magnesium, lead, tin, or zinc.

**10.6. Hazardous Decomposition Products**

None known.

**SECTION 11: Toxicological Information****11.1. Information on Toxicological Effects****Acute Toxicity****Inhalation**

May cause respiratory irritation.

**Eye Contact**

Causes eye irritation.

**Skin Contact**

May cause skin irritation.

**Ingestion**

May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity**

No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Toxicology data for the components**

| Substances       | CAS Number | LD50 Oral  | LD50 Dermal         | LC50 Inhalation   |
|------------------|------------|--|---------------------|-------------------|
| Calcium chloride | 10043-52-4 | > 1000 mg/kg (Rat)<br>2301 mg/kg (Rat)<br>> 2000 mg/kg (Rat)<br>2240 mg/kg (Rat) | 5000 mg/kg (Rabbit) | No data available |

| Substances       | CAS Number | Skin corrosion/irritation            |
|------------------|------------|--------------------------------------|
| Calcium chloride | 10043-52-4 | Causes mild skin irritation (Rabbit) |

| Substances       | CAS Number | Eye damage/irritation                  |
|------------------|------------|--|
| Calcium chloride | 10043-52-4 | Causes severe eye irritation. (Rabbit) |

| Substances       | CAS Number | Skin Sensitization       |
|------------------|------------|--------------------------|
| Calcium chloride | 10043-52-4 | No information available |

| Substances       | CAS Number | Respiratory Sensitization |
|------------------|------------|---------------------------|
| Calcium chloride | 10043-52-4 | No information available  |

| Substances       | CAS Number | Mutagenic Effects                                    |
|------------------|------------|--|
| Calcium chloride | 10043-52-4 | Did not show mutagenic effects in animal experiments |

| Substances | CAS | Carcinogenic Effects |
|------------|-----|----------------------|
|------------|-----|----------------------|

|                   |                   |   |
|-------------------|-------------------|---|
|                   | <b>Number</b>     |   |
| Calcium chloride  | 10043-52-4        | No information available.   |
| <b>Substances</b> | <b>CAS Number</b> | <b>Reproductive toxicity</b>  |
| Calcium chloride  | 10043-52-4        | Animal testing did not show any effects on fertility.   |
| <b>Substances</b> | <b>CAS Number</b> | <b>STOT - single exposure</b>   |
| Calcium chloride  | 10043-52-4        | No significant toxicity observed in animal studies at concentration requiring classification. |
| <b>Substances</b> | <b>CAS Number</b> | <b>STOT - repeated exposure</b>   |
| Calcium chloride  | 10043-52-4        | No information available.   |
| <b>Substances</b> | <b>CAS Number</b> | <b>Aspiration hazard</b>  |
| Calcium chloride  | 10043-52-4        | Not applicable  |

## SECTION 12: Ecological Information

### 12.1. Toxicity Ecotoxicity Effects

| Substances       | CAS Number | Toxicity to Algae  | Toxicity to Fish   | Toxicity to Microorganisms | Toxicity to Invertebrates  |
|------------------|------------|--|--|----------------------------|--|
| Calcium chloride | 10043-52-4 | ErC50 (72h) 2900 mg/L (Pseudokirchnerella subcapitata)<br>ErC50 (72h) 4000 mg/L (Pseudokirchnerella subcapitata) | LC50 (96h) 4630 mg/L (Pimephales promelas)<br>LC50 (48h) >6560 mg/L (Pimephales promelas)<br>LC50 (24h) >6660 mg/L (Pimephales promelas) | No information available   | EC50 (48h) 2400 mg/L (Daphnia magna)<br>EC50 (21d) 610 mg/L (reproduction) (Daphnia magna) |

### 12.2. Persistence and degradability

| Substances       | CAS Number | Persistence and Degradability  |
|------------------|------------|--|
| Calcium chloride | 10043-52-4 | The methods for determining biodegradability are not applicable to inorganic substances. |

### 12.3. Bioaccumulative potential

| Substances       | CAS Number | Log Pow                  |
|------------------|------------|--------------------------|
| Calcium chloride | 10043-52-4 | No information available |

### 12.4. Mobility in soil

| Substances       | CAS Number | Mobility                 |
|------------------|------------|--------------------------|
| Calcium chloride | 10043-52-4 | No information available |

### 12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

| Substances       | PBT and vPvB assessment |
|------------------|-------------------------|
| Calcium chloride | Not applicable          |

### 12.6. Other adverse effects

#### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

## SECTION 13: Disposal Considerations

### 13.1. Waste treatment methods

#### Disposal Method Contaminated Packaging

Disposal should be made in accordance with federal, state, and local regulations.  
Follow all applicable national or local regulations.

|  |
|--|
| <b>SECTION 14: Transport Information</b> |
|--|

**IMDG/IMO**

|                                    |                |
|------------------------------------|----------------|
| <b>UN Number:</b>                  | Not restricted |
| <b>UN Proper Shipping Name:</b>    | Not restricted |
| <b>Transport Hazard Class(es):</b> | Not applicable |
| <b>Packing Group:</b>              | Not applicable |
| <b>Environmental Hazards:</b>      | Not applicable |

**RID**

|                                    |                |
|------------------------------------|----------------|
| <b>UN Number:</b>                  | Not restricted |
| <b>UN Proper Shipping Name:</b>    | Not restricted |
| <b>Transport Hazard Class(es):</b> | Not applicable |
| <b>Packing Group:</b>              | Not applicable |
| <b>Environmental Hazards:</b>      | Not applicable |

**ADR**

|                                    |                |
|------------------------------------|----------------|
| <b>UN Number:</b>                  | Not restricted |
| <b>UN Proper Shipping Name:</b>    | Not restricted |
| <b>Transport Hazard Class(es):</b> | Not applicable |
| <b>Packing Group:</b>              | Not applicable |
| <b>Environmental Hazards:</b>      | Not applicable |

**IATA/ICAO**

|                                    |                |
|------------------------------------|----------------|
| <b>UN Number:</b>                  | Not restricted |
| <b>UN Proper Shipping Name:</b>    | Not restricted |
| <b>Transport Hazard Class(es):</b> | Not applicable |
| <b>Packing Group:</b>              | Not applicable |
| <b>Environmental Hazards:</b>      | Not applicable |

**14.1. UN Number:** Not restricted**14.2. UN Proper Shipping Name:** Not restricted**14.3. Transport Hazard Class(es):** Not applicable**14.4. Packing Group:** Not applicable**14.5. Environmental Hazards:** Not applicable**14.6. Special Precautions for User:** None**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

|   |
|---|
| <b>SECTION 15: Regulatory Information</b> |
|---|

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

|                               |  |
|-------------------------------|--|
| <b>EINECS Inventory</b>       | This product, and all its components, complies with EINECS |
| <b>US TSCA Inventory</b>      | All components listed on inventory or are exempt.          |
| <b>Canadian DSL Inventory</b> | All components listed on inventory or are exempt.          |

**Legend**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

|   |                              |
|---|------------------------------|
| <b>Germany, Water Endangering Classes (WGK)</b> | WGK 1: Low hazard to waters. |
|---|------------------------------|

**15.2. Chemical Safety Assessment**

Yes

**SECTION 16: Other Information****Full text of H-Statements referred to under sections 2 and 3**

H319 - Causes serious eye irritation

**Key or legend to abbreviations and acronyms**

bw – body weight

CAS – Chemical Abstracts Service

CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EC – European Commission

EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%

EEC – European Economic Community

ErC50 – Effective Concentration growth rate 50%

IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL0 – Lethal Loading 0%

LL50 – Lethal Loading 50%

MARPOL – International Convention for the Prevention of Pollution from Ships

mg/kg – milligram/kilogram

mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic

PC – Chemical Product category

PEL – Permissible Exposure Limit

ppm – parts per million

PROC – Process category

REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit

SU – Sector of Use category

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

OSHA

ECHA C&L

**Revision Date:** 16-Sep-2015

**Revision Note**

SDS sections updated: 1

**This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010**

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**End of Safety Data Sheet**