

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1  
Creation Date: July 15, 2019  
Revision Date: April 17, 2024

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Calcium ion solution for ISE

### 1.2 Other means of identification

Product number C1004030

Other names -

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

### 1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

### 1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Eye irritation, Category 2

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Warning

Hazard statement(s) H319 Causes serious eye irritation

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

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.

Storage

none

Disposal

none

### 2.3 Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name                | Common names and synonyms | CAS number | EC number | Concentration |
|------------------------------|---------------------------|------------|-----------|---------------|
| Calcium ion solution for ISE | Calcium chloride          | 10043-52-4 | 233-140-8 | 100%          |

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

**If inhaled**

Fresh air, rest. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer immediately for medical attention.

**Following eye contact**

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

**Following ingestion**

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer immediately for medical attention.

**4.2 Most important symptoms/effects, acute and delayed**

Inhalation causes irritation of nose and throat. Ingestion causes irritation of mouth and stomach. Contact with eyes (particularly by dust) causes irritation and possible transient corneal injury. Contact of solid with dry skin causes mild irritation; strong solutions can cause marked irritation, even a superficial burn. (USCG, 1999)

**4.3 Indication of immediate medical attention and special treatment needed, if necessary**

**Absorption, Distribution and Excretion**

Approximately 80% of body calcium is excreted in the feces as insoluble salts; urinary excretion accounts for the remaining 20%.

**SECTION 5: Fire-fighting measures**

**5.1 Suitable extinguishing media**

In case of fire in the surroundings, use appropriate extinguishing media.

**5.2 Specific hazards arising from the chemical**

Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.

**5.3 Special protective actions for fire-fighters**

In case of fire in the surroundings, use appropriate extinguishing media.

**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Personal protection: complete protective clothing including self-contained breathing apparatus. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

**6.2 Environmental precautions**

Personal protection: complete protective clothing including self-contained breathing apparatus. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

**6.3 Methods and materials for containment and cleaning up**

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Separated from zinc. Dry. Well closed.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Occupational Exposure limit values**

|                  |                           |                   |                          |                   |
|------------------|---------------------------|-------------------|--------------------------|-------------------|
| Component        | Calcium chloride          |                   |                          |                   |
| CAS No.          | 10043-52-4                |                   |                          |                   |
|                  | Limit value - Eight hours |                   | Limit value - Short term |                   |
|                  | ppm                       | mg/m <sup>3</sup> | ppm                      | mg/m <sup>3</sup> |
| Canada - Ontario |                           | 5                 |                          |                   |
| Latvia           |                           | 2                 |                          |                   |
|                  | Remarks                   |                   |                          |                   |

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear safety goggles in combination with breathing protection.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust or breathing protection.

#### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

|                                                          |                                                                            |
|----------------------------------------------------------|----------------------------------------------------------------------------|
| Physical state                                           | Solid. Powder.                                                             |
| Colour                                                   | White.                                                                     |
| Odour                                                    | no data available                                                          |
| Melting point/freezing point                             | 775 °C. Atm. press.: 1 013 hPa.                                            |
| Boiling point or initial boiling point and boiling range | 1 935 °C. Atm. press.: 1 013 hPa.                                          |
| Flammability                                             | Not combustible. Gives off irritating or toxic fumes (or gases) in a fire. |
| Lower and upper explosion limit/flammability limit       | no data available                                                          |
| Flash point                                              | >1600°C                                                                    |
| Auto-ignition temperature                                | no data available                                                          |
| Decomposition temperature                                | no data available                                                          |
| pH                                                       | no data available                                                          |
| Kinematic viscosity                                      | no data available                                                          |
| Solubility                                               | In water: 81.3 g/100 g. Temperature: 25 °C. pH: 7.                         |
| Partition coefficient n-octanol/water                    | no data available                                                          |
| Vapour pressure                                          | 0.01 mm Hg ( 20 °C)                                                        |
| Density and/or relative density                          | 2.15 g/cm <sup>3</sup> . Temperature: 25 °C.                               |
| Relative vapour density                                  | no data available                                                          |
| Particle characteristics                                 | no data available                                                          |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Decomposes on heating. This produces toxic and corrosive fumes of chlorine (see ICSC 0126). The solution in water is a weak base. Attacks zinc in the presence of water. This produces flammable/explosive gas (hydrogen - see ICSC 0001). Dissolves violently in water with liberation of much heat.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

Bromine trifluoride rapidly attacks calcium chloride [Mellor 2 Supp. 1:164, 165 1956]. Long term exposure of calcium chloride solution upon a zinc coated galvanized iron vessel caused slow evolution of hydrogen which ignited and exploded [Bretherick, 5th Ed., 1995].

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: LC50 - rat - > 160 mg/m<sup>3</sup> air.
- Dermal: LD50 - rabbit (male/female) - > 5 000 mg/kg bw.

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is corrosive to the eyes. The substance is severely irritating to the skin, upper respiratory tract and gastrointestinal tract.

### STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the nasal mucous membrane. This may result in tissue lesions.

### Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

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## SECTION 12: Ecological information

### 12.1 Toxicity

- Toxicity to fish: LC50 - Pimephales promelas - 4 630 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: NOEC - Daphnia magna - 2 000 mg/L - 48 h.
- Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 2 900 mg/L - 72 h.
- Toxicity to microorganisms: NOAEL - activated sludge, industrial - 20 000 mg/L.

### 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 Other adverse effects

no data available

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## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

#### 14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### 14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

#### 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

#### 14.6 Special precautions for user

no data available

#### 14.7 Transport in bulk according to IMO instruments

no data available

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name                                                            | Common names and synonyms | CAS number | EC number   |
|--------------------------------------------------------------------------|---------------------------|------------|-------------|
| Calcium chloride                                                         | Calcium chloride          | 10043-52-4 | 233-140-8   |
| European Inventory of Existing Commercial Chemical Substances (EINECS)   |                           |            | Listed.     |
| EC Inventory                                                             |                           |            | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory              |                           |            | Listed.     |
| China Catalog of Hazardous chemicals 2015                                |                           |            | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC)                               |                           |            | Listed.     |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)       |                           |            | Listed.     |
| Vietnam National Chemical Inventory                                      |                           |            | Listed.     |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) |                           |            | Listed.     |
| Korea Existing Chemicals List (KECL)                                     |                           |            | Listed.     |

### SECTION 16: Other information

#### Information on revision

Creation Date July 15, 2019

Revision Date April 17, 2024

#### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>



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- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
  - Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
  - ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Any questions regarding this SDS, Please send your inquiry to [info@cato-chem.com](mailto:info@cato-chem.com)**

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