Issue date: 10/29/2003
Revision date: 2/16/2024

Safety Data Sheet

1. Chemical product and company identification

Product name : Calcium chloride

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	07057
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Acute toxicity (oral)	Category 4
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 2

Hazard pictograms

Signal word : Danger

Hazard statements : Harmful if swallowed
Causes serious eye damage
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure

Precautionary statements

Prevention : Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Rinse mouth.

Storage : Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Calcium chloride	≥ 95	CaCl2	Listed	233-140-8	10043-52-4

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

First-aid measures after skin contact : Wash the affected areas under running water.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.

First-aid measures after ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Fire hazard : Thermal decomposition emits harmful, irritant gas or fume.

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment	:	Sweep up in a chemical waste container. Flush contaminated area with copious amounts of water.

7. Handling and storage

Handling

Technical measures	:	If necessary, wear proper protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols.

Storage

Storage conditions	:	As the chemical is deliquescent, keep the bottle tightly closed and store in a cool place.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established

Appropriate engineering controls	:	Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection	:	If necessary, wear dust mask
Hand protection	:	Impervious protective gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Solid
Color	:	White
Odor	:	Odorless
pH	:	8 - 10 (50 g/L, 25℃)
Melting point	:	772 ° C
Freezing point	:	No data available
Boiling point	:	1670 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	2.2 g/cm³ (25℃)
Relative gas density	:	No data available

Solubility	:	Organic solvents: Soluble in ethanol, acetone. Water: 74.5 g/100 mL (20℃)
Partition coefficient n-octanol/water (log Pow)	:	No data available
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	Zinc is attacked in the presence of water.
Chemical stability	:	Stable under normal conditions. Deliquescent.
Possibility of hazardous reactions	:	It dissolves violently in water and releases large amounts of heat.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Water.
Hazardous decomposition products	:	Chlorine, hydrogen chloride.

11. Toxicological information

Acute toxicity (oral)	:	Harmful if swallowed rat LD50＝1940 mg/kg
Acute toxicity (dermal)	:	No classification rabbit LD50>5000 mg/kg
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Classification not possible Rat tests (OECD TG 404 GLP) found that the substance in forms of anhydrides and dihydrates are not irritating, while those of hexahydrates were slightly irritating. On the other hand, several workers who package calcium chloride developed erythema and peeling of the skin, indicating that calcium chloride has a powerful irritant action on the skin and mucous membranes in humans. Because of inconsistencies between the results from animal tests (Not classified) and the positive human cases, the substance was classified into "Classification not possible".
Serious eye damage/irritation	:	Causes serious eye damage Several workers who package calcium chloride developed erythema and peeling of the skin, indicating that calcium chloride has a powerful irritant action on the skin and mucous membranes in humans ; thus, the substance was classified into category 1. As additional information, rat tests (OECD TG 404 GLP) found that the substance in forms of anhydrides and dihydrates were not irritating, while those of hexahydrates were slightly irritating.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible Classification is not possible due to lack of information such as results from in vivo mutagenicity tests and in vitro mutagenicity tests using several indices. Also, Ames tests and mutagenicity tests using CHL cells (both are in vitro mutagenicity tests) resulted in negative outcome.
Carcinogenicity	:	Classification not possible

Reproductive toxicity	:	Classification not possible In developmental toxicity tests using rats or mice that underwent forced oral administration (OECD TG 414), signs of developmental toxicity were not found. However, since these tests lack data on fertility and reproductive functions of parental animals, classification is not possible.
STOT-single exposure	:	May cause respiratory irritation In inhalation tests using rats that received doses of 0.04 or 0.16 mg/L, several symptoms indicating respiratory system irritation were detected ; thus, the substance was classified into category 3 (respiratory tract irritation).
STOT-repeated exposure	:	May cause damage to organs through prolonged or repeated exposure In oral administration tests using rats, no toxic effects have been observed regardless of doses in any of several tests conducted. However, in inhalation tests using rats that received doses of 43.1 mg/m3/4 hours/day (5 days/week, 4 months) (6 hour conversion value: 0.03 mg/L), the following marked toxic symptoms were observed: decrease in the number of leukocytes, phagocytic activity in blood, lysozyme level in serum, and catalase activity, plasma recalcification, shortening of clotting, clot retraction, an increase in peroxidase activity. Since most of these symptoms did not improve after the observational period, the substance was classified into category 2 (blood).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	No classification Pimephales promelas LC50=4630 mg/L/96h
Aquatic chronic	:	No classification

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Dilute with copious water and adjust the pH to neutral, then flush in drains. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Transport hazard class(es) (IMDG)	:	Not applicable

Air transport(IATA)

UN-No. (IATA)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Packing group (IATA)	:	Not applicable
Transport hazard class(es) (IATA)	:	Not applicable
Marine pollutant	:	Not applicable

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : ICSC Card (2009) .
Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.