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Safety Data Sheet

1. Chemical product and company identification

Product name	:	Lithium carbonate

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	:	24121
Product numbers applied by the SDS	:	24121, 24125
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 2B
	Reproductive toxicity	Category 1A
	Reproductive toxicity (effects on or via lactation)	Additional category
	Specific target organ toxicity (single exposure)	Category 1 (nervous system)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 1 (kidney nervous system)
Environmental hazards	Aquatic acute	Category 2
	Aquatic chronic	Category 2

Hazard pictograms

Signal word	:	Danger
Hazard statements	:	Harmful if swallowed Causes eye irritation May cause respiratory irritation May damage fertility or the unborn child May cause harm to breast-fed children Causes damage to organs (nervous system) Causes damage to organs (kidney nervous system) through prolonged

or repeated exposure
Toxic to aquatic life
Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Avoid contact during pregnancy and while nursing.
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.
Avoid release to the environment.
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.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.
Collect spillage.

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
Lithium carbonate	≥ 98.5	CH2O3. 2Li	Listed	209-062-5	554-13-2

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. If necessary, get medical treatment.

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. If necessary, get medical treatment.

First-aid measures after ingestion : Give the victim water or salt water and make him vomit. Get medical attention.

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
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. Fight fire from windward.
Personal protection (Emergency response)	:	Firefighters should wear protective equipment.

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	:	Store in a dark, cool place and tightly closed.
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	:	10 - 11
Melting point	:	723 ° C
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	1310 ° C
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	2.1 g/cm^3
Relative gas density	:	No data available
Solubility	:	Organic solvents: Insoluble in ethanol. Water: 1.3 g/100 mL
Partition coefficient n-octanol/water (log Pow)	:	-6.19
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	The aqueous solution is strongly alkaline and reacts violently with acids.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Acids. fluorine.
Hazardous decomposition products	:	Carbon monoxide. lithium oxide.

11. Toxicological information

Acute toxicity (oral)	:	Harmful if swallowed rat LD50=525mg/kg
Acute toxicity (dermal)	:	No classification rat LD0=2000mg/kg
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	No classification According to the result that it was "slightly irritating" in the dray's test using the rabbit, it was classified as "No classification".

Serious eye damage/irritation	:	Causes eye irritation In the Draize test using rabbits, moderate irritation to unwashed eye was reported based on observation of cornea opacity, iritis, conjunctivitis, conjunctival hemorrhage and white areas on conjunctivae and recuperation within 7 days. Similar effects with less severity were observed in washed eye, and symptoms were reversible within 4 days and reported as mildly irritating. Based on these results, it was classified as category 2B.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	No classification Negative results in the chromosomal aberration test do not clearly indicate clastogenicity. Therefore, it was classified as "No classification".
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	May damage fertility or the unborn child May cause harm to breast-fed children This substance is a psychotropic drug containing lithium as an ingredient. There were numerous reports about Ebstein's anomalies (congenital cardiovascular malformations) in neonates born from mothers who ingested the drug during pregnancy. In the later follow-up studies, cardiovascular malformations in neonates were not confirmed, and thus there are some reports considering that the risk of neonatal disorders was lower than expected previously. However, it is well known that lithium can pass through the placenta. In the precautions of medicines package insert, lithium is contraindicated in the pregnant or possibly pregnant women. Based on the above, the substance was classified as category 1A. In addition, lithium is excreted into the mother's milk with a similar concentration in the serum. Therefore, "additional category for effects on or via lactation" was added.
STOT-single exposure	:	Causes damage to organs (nervous system) May cause respiratory irritation The use of psychotropic drug containing the substance as an active ingredient might produce some toxic response depending on the blood lithium concentrations. According to a medical package insert, it is recommended to monitor the blood lithium concentration as a precaution of usage. Furthermore, it was reported that in patients receiving lithium therapy, severe neurotoxicity might occur which included impaired consciousness, delirium, ataxia, generalized muscle contraction and extrapyramidal symptoms when the plasma lithium level would exceed 2.5 mM, and that the toxicity might occur for a few hours to a few days. Meanwhile, in the animal studies, it was reported that the signs consisting of lethargy, slow respiration, convulsion and muscle weakness were observed prior to death in mice administered orally at the dose levels of 250 to 1,000 mg/kg and the pathological changes in the nervous system were noted in these animals. Based on the above, it was classified as category 1 (nervous system). On the other hand, it was reported that irritation of upper respiratory tract was observed in human by exposure to dust of this substance. Based on this information, it was classified as category 3 (respiratory irritation).

STOT-repeated exposure	:	Causes damage to organs (kidney nervous system) through prolonged or repeated exposure This substance is a psychotropic drug containing lithium as an ingredient, and side effects such as tremor, lethargy, and confusion were described. The occurrence of toxicity was related to the blood lithium concentration, and those included neurological toxicity progressed from hand tremor, muscle weakness toward coma. In a follow up study about side effects for 59 subjects of 101 patients treated with lithium preparation for affective disorders, treatment-related side effects included tremor (23 subjects), subjective memory loss (23 subjects) and loss of creativity (11 subjects). Based on the information on human toxicity, it was classified as category 1 (nervous system). Moreover, as side effects other than nervous system, cases with polyuria, polydipsia or nephrogenic diabetes insipidus were reported. Thus, due to a description of possible occurrence of chronic renal failure, it was classified as category 1 (kidney).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Toxic to aquatic life Fundulus heteroclitus LC50=8.1mg/L/96h
Aquatic chronic	:	Toxic to aquatic life with long lasting effects

Persistence and degradability

No additional information available

Bioaccumulative potential

Low bioconcentration
log Pow : -6.19

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Dissolve in water and flush in a drain after neutralizing with diluted acids. Or consult approved disposal companies.
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)	:	3077
Proper Shipping Name (IMDG)	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	9

Air transport(IATA)

UN-No. (IATA)	:	3077
Proper Shipping Name (IATA)	:	Environmentally hazardous substance, solid, n.o.s.
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	9
Marine pollutant	:	Applicable
MFAG-No	:	171

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

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.