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# Safety Data Sheet

## Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Lithium hydroxide, anhydrous

SDS No. : 45011E-2

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
Division: Chemical Safety Management Department
Telephone number: +81-6-6946-8061
FAX: +81-6-6946-1607

## Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 3
Skin corrosion/irritation: Category 1
Serious eye damage/eye irritation: Category 1
Reproductive toxicity: Category 1A
Reproductive toxicity - effects on or via lactation: Additional category
Specific target organ toxicity - single exposure: Category 1 (respiratory tract)
Specific target organ toxicity - single exposure: Category 2 (nervous system)
Specific target organ toxicity - repeated exposure: Category 2 (nervous system, kidneys)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

H331 Toxic if inhaled
H314 Causes severe skin burns and eye damage
H360 May damage fertility or the unborn child
H362 May cause harm to breast-fed children
H370 Causes damage to organs (respiratory tract)
H371 May cause damage to organs (nervous system)
H373 May cause damage to organs through prolonged or repeated exposure (nervous system, kidneys)

PRECAUTIONARY STATEMENT

Prevention

P202 Do not handle until all safety precautions have been read and understood.
P263 Avoid contact during pregnancy and while nursing.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P264 Wash contaminated parts thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P270 Do not eat, drink or smoke when using this product.

Response

P314 Get medical advice/attention if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P310 Immediately call a POISON CENTER/doctor/physician.
P311 Call a POISON CENTER/doctor/physician.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P363 Wash contaminated clothing before reuse.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

## Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

| Ingredient name | Content (%) | CAS No. | ENCS | Chemical formula |
|---|---|---|---|---|
| Lithium hydroxide | ≧98 | 1310-65-2 | 1-712 | LiOH |

Note : The figures shown above are not the specifications of the product.

Impurities

Lithium carbonate ≦2.0% (CAS No.554-13-2)

## Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician.
IF INHALED: Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN

Take off immediately all contaminated clothing. Rinse skin with water or shower.
Immediately call a POISON CENTER/doctor/physician.

If skin irritation or rash occurs: Get medical advice/attention.

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/doctor/physician.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Do NOT induce vomiting.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

## Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

## Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

## Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.
(Protective measures against fire and explosion)
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
(Exhaust/ventilator)
Exhaust/ventilator should be available.
(Safety treatments)
Avoid contact with skin.
Avoid contact with eyes.

Safety Measures
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands et al thoroughly after handling.
When using do not eat, drink or smoke.

Any incompatibilities
See "10.Stability and Reactivity".

Advice on general occupational hygiene
Avoid contact during pregnancy and while nursing.
Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wash contaminated clothing before reuse.

Storage

Conditions for safe storage
Keep container tightly closed.
Store locked up. (P405)
Store in a cool, dry place. Do not store in direct sunlight.
Storage in accordance with local/national regulation.

Container and packaging materials for safe handling
Use closed unbreakable containers.

## Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value
Not established

Adopted value

The Japan Society for Occupational Health
(Lithium hydroxide)
1mg/m3

Exposure controls

Appropriate engineering controls
Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures
Recommend to use protective equipment in conformity with the standards.
Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection
Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge

corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

## Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystals or powder

Color: Colorless to white

Odor data is not available.

Melting point/Freezing point: 450～471℃

Boiling point or initial boiling point: (Lithium hydroxide)(decomposes) 924℃

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 12.8 g/100 ml (20℃)

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

Vapor pressure: negligible (20℃)

Density and/or relative density: 2.54 g/cm3

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Other information

Other information is not available.

## Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Hygroscopic materials.

Possibility of hazardous reactions

(Lithium hydroxide)

Decomposes on heating above 924℃. This produces toxic fumes. The solution in water is a strong base. It reacts violently with acid and is corrosive to aluminium, tin and zinc.

This produces flammable/explosive gas (hydrogen). Reacts with strong oxidants. (ICSC 0913)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Strong oxidizing agents, Aluminium, Tin, Zinc
Hazardous decomposition products
Hydrogen

## Section 11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Data for components of the product]
[NITE-CHRIP]
(Lithium carbonate)
rat LD50: 525 mg/kg (source: NITE)
Acute toxicity (Dermal)
[Data for components of the product]
[NITE-CHRIP]
(Lithium carbonate)
rat LD0: 2000 mg/kg (GLP) (source: NITE)
Acute toxicity (Inhalation)
[Product]
Category 3, Toxic if inhaled
[Data for components of the product]
[NITE-CHRIP]
(Lithium hydroxide)
dust: rat LC50: 0.96 mg/L (4-hour) (source: NITE)
Irritant properties
Skin corrosion/irritation
[Product]
Category 1, Causes severe skin burns and eye damage
[Data for components of the product]
[NITE-CHRIP]
(Lithium hydroxide)
Category 1 (source: NITE)
Serious eye damage/irritation
[Product]
Category 1, Causes serious eye damage
[Data for components of the product]
[NITE-CHRIP]
(Lithium hydroxide)
Category 1 (source: NITE)
(Lithium carbonate)
Category 2B (source: NITE)
Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenic effects data is not available.
Reproductive toxicity
[Product]
Category 1A, May damage fertility or the unborn child
Additional category, May cause harm to breast-fed children
[Data for components of the product]

[NITE-CHRIP]
(Lithium hydroxide)
Category 1A (source: NITE)
(Lithium carbonate)
Category 1A, Additional category (source: NITE)

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]
Category 1, Causes damage to organs
Category 2, May cause damage to organs

[Data for components of the product]
[NITE-CHRIP]
(Lithium hydroxide)
Category 1 (respiratory tract) (source: NITE)
(Lithium carbonate)
Category 1 (nervous system), Category 3 (Respiratory tract irritation) (source: NITE)

STOT-repeated exposure

[Product]
Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]
[NITE-CHRIP]
(Lithium carbonate)
Category 1 (nervous system, kidneys) (source: NITE)

Aspiration hazard data is not available.

Information on other hazards

May cause lung disorders by massive inhalation of powdered substance.
-e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

## Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[NITE-CHRIP]
(Lithium carbonate)
Fish (Fundulus heteroclitus) 96-hour LC50: 8.1 mg/L (source: NITE)

Water solubility

(Lithium hydroxide)
12.8 g/100 mL (20℃) (source: ICSC, 2009)
(Lithium carbonate)
1.3 g/100 mL (source: ICSC, 1999)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

## Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

## Section 14. Transport Information

UN Number or ID Number : 2680
UN Proper Shipping Name :
LITHIUM HYDROXIDE
Class or division (Transport hazard class) : 8
Packing group : II
ERG GUIDE No.: 154

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2680
UN Proper Shipping Name :
LITHIUM HYDROXIDE
Class or division (Transport hazard class) : 8
Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2680
UN Proper Shipping Name :
LITHIUM HYDROXIDE
Class or division (Transport hazard class) : 8
Hazard labels : Corrosive
Packing group : II

Environmental hazards

Marine pollutants (yes/no) : no

## Section 15. Regulatory Information

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Lithium carbonate; Lithium hydroxide

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

## Section 16. Other information

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (66th Edition) 2025
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2025 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
2024 Recommendation on TLVs (JSOH)
Supplier's data/information

General Disclaimer


Please provide SDS to customers for selling or transferring.
All chemicals have unknown hazard. Handle the product with care.
This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.
The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.
The GHS classification data given here is based on current Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).