Zinc Lactate Dihydrate
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 06/01/2015  Revision date: 06/12/2018  Supersedes: 10/24/2015  Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form: Substance  
Substance name: Zinc Lactate Dihydrate  
CAS-No.: 16039-53-5  
Formula: Zn(C\textsubscript{3}H\textsubscript{5}O\textsubscript{3})\textsubscript{2} \cdot 2H\textsubscript{2}O

1.2. Recommended use and restrictions on use

Use of the substance/mixture: Nutrient; Dietary Supplement  
Oral Care Products

1.3. Supplier

Manufacturer  
Jost Chemical Co.  
8150 Lackland Rd.  
Saint Louis, Missouri 63114  
T 314-428-4300 - F 314-428-4366  
sds@jostchemical.com - www.jostchemical.com

1.4. Emergency telephone number

Emergency number: For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
United States and Canada: 1-800-424-9300 / +1 703-527-3887  
Global: +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification  
Acute toxicity (oral): H302  
Category 4  
Harmful if swallowed  
Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling  
Hazard pictograms (GHS-US): ![Exclamation Mark]

Signal word (GHS-US): Warning  
Hazard statements (GHS-US): H302 - Harmful if swallowed

Precautionary statements (GHS-US):  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell  
P330 - Rinse mouth.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type: Mono-constituent
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<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Lactate Dihydrate (Main constituent)</td>
<td>(CAS-No.) 16039-53-5</td>
<td>100</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general: Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Immediately rinse with water for a prolonged period while holding the eyelids wide open. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. If necessary, obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after eye contact: Serious damage to eyes.

4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

5.2. Specific hazards arising from the chemical
Fire hazard: Combustible.
Reactivity: To our knowledge, the product does not present any particular risk, under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: Contain the extinguishing fluids by bunding (the product is hazardous for the environment).
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
For containment: Sweep up or vacuum up the product. Collect all waste in suitable and labeled containers and dispose according to local legislation. Collect spillage.
Methods for cleaning up: Mechanically recover the product.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.
SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid the formation or spread of dust in the atmosphere. Avoid contact with skin and eyes.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Ensure that there is a suitable ventilation system.
Storage conditions: Store in a clean, dry warehouse in the original unopened containers. Store in a well-ventilated place. Keep cool.
Incompatible materials: Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Appropriate engineering controls
Appropriate engineering controls: Ensure good ventilation of the work station.
Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment
Personal protective equipment:
Dust production: dust mask with filter type P2. Gloves. Safety glasses.

Materials for protective clothing:
Wear suitable protective clothing, gloves and eye/face protection

Hand protection:
Impermeable protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Solid
Appearance: Powder. Granules.
Color: White
Odor: No data available
Odor threshold: No data available
pH: No data available
Melting point: No data available
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Freezing point: Not applicable
Boiling point: No data available
Flash point: Not applicable
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): Non flammable.
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: Not applicable
Specific gravity / density: 1.65 g/cm³
Molecular mass: 279.51 g/mol
Solubility: Water: 48.2 g/l
Log Pow: No data available
Auto-ignition temperature: Not applicable
Decomposition temperature: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: Not applicable
Explosive properties: No data available
Oxidizing properties: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
To our knowledge, the product does not present any particular risk, under normal conditions of use.

10.2. Chemical stability
Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions
None under normal conditions.

10.4. Conditions to avoid
None to our knowledge.

10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
On thermal decomposition (pyrolysis), releases: Carbon oxides (CO, CO2). Zinc oxide.

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Acute toxicity (oral): Oral: Harmful if swallowed.
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

### Zinc Lactate Dihydrate (16039-53-5)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>500 - 2000 mg/kg OECD 401</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg Lactic Acid (EPA OPP 81-2)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 7.94 mg/l/4h OECD 403</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>500 mg/kg body weight</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
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Reproductive toxicity: Not classified
Specific target organ toxicity – single exposure: Not classified
Specific target organ toxicity – repeated exposure: Not classified
Aspiration hazard: Not classified
Viscosity, kinematic: No data available
Symptoms/effects after eye contact: Serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Dangerous for the environment. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
Ecology - water: Harmful to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Zinc Lactate Dihydrate (16039-53-5)</th>
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</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
</tr>
<tr>
<td>NOEC (acute)</td>
</tr>
<tr>
<td>NOEC (chronic)</td>
</tr>
<tr>
<td>NOEC chronic fish</td>
</tr>
<tr>
<td>NOEC (additional information) algae</td>
</tr>
<tr>
<td>Additional ecotox information ECHA - European Chemicals Agency</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated

Transportation of Dangerous Goods
Proper Shipping Name (Transportation of Dangerous Goods): Not regulated for transport

Transport by sea
Transport document description (IMDG): UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Dilactate), 9, III, MARINE POLLUTANT
UN-No. (IMDG): 3077
Proper Shipping Name (IMDG): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class (IMDG): 9 - Miscellaneous dangerous substances and articles
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Packing group (IMDG) : III - substances presenting low danger
Limited quantities (IMDG) : 5 kg

Air transport
Transport document description (IATA) : UN 3077 Environmentally hazardous substance, solid, n.o.s. (Zinc Dilactate), 9, III
UN-No. (IATA) : 3077
Proper Shipping Name (IATA) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS-No.</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Zinc Lactate Dihydrate</td>
<td>16039-53-5</td>
<td>100%</td>
</tr>
</tbody>
</table>

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating
Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (HazCom 2012)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.