

【1. Identification】

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| Chemical substance name: | Zinc stearate (Fatty acids, C16-18, zinc salts) |
| Product name: | Zinc Stearate-H |
| Company name: | Dainichi Chemical Industry Co., Ltd. |
| Address: | 7-3-4, Nakaishikiri-cho, Higashiosaka-shi, Osaka-fu, 579-8014, Japan |
| Associated department: | Technical department |
| Telephone number: | +81-72-985-1851 |
| Emergency contact number: | +81-72-985-1851 |
| FAX number: | +81-72-987-0170 |
| Recommended use: | Additives for resin Lubricants for powder metallurgy |
| restriction on use: | Expert judgment is required when using for purposes other than those recommended. |

【2. Hazards identification】

1. GHS classification

a. Physical hazards

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|---|-----------------------------|
| Explosive: | Not classified |
| Flammable gases: | Not classified |
| Aerosols: | Not classified |
| Oxidizing gases: | Not classified |
| Gases under pressure: | Not classified |
| Flammable liquid: | Not classified |
| Flammable solids: | Classification not possible |
| Self-reactive substances and mixture: | Not classified |
| Pyrophoric liquids: | Not classified |
| Pyrophoric solids: | Not classified |
| Self-heating substances and mixtures: | Classification not possible |
| Substances and mixture which, in contact with water, emit flammable gases: | Not classified |
| Oxidizing liquids: | Not classified |
| Oxidizing solids: | Not classified |
| Organic peroxides: | Not classified |
| Corrosive to metals: | Classification not possible |
| Desensitized explosives: | Not applicable |

b. Health hazards

| | |
|---|-----------------------------|
| Acute toxicity (oral): | Not classified |
| Acute toxicity (dermal): | Classification not possible |
| Acute toxicity (gases): | Not classified |
| Acute toxicity (vapors): | Not classified |
| Acute toxicity (dusts and mists): | Classification not possible |
| Skin corrosion/irritation: | Not classified |
| Serious eye damage / eye irritation: | Not classified |
| Respiratory sensitization: | Classification not possible |
| Skin sensitization: | Classification not possible |
| Germ cell mutagenicity: | Not classified |
| Carcinogenicity: | Classification not possible |
| Reproductive toxicity: | Classification not possible |
| STOT-single exposure: | Classification not possible |
| STOT-repeated exposure: | Not classified |
| Aspiration hazard: | Classification not possible |

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c. Environmental hazards

Acute aquatic hazard: Not classified
Chronic aquatic hazard: Not classified
Hazardous to the ozone layer: Classification not possible

d. Others

Risk of dust explosion

2. GHS Label elements, including precautionary statements

Signal words: Not available
Hazard pictogram: Not available
Other Hazard statements: May form explosible dust-air mixture if dispersed

【3. Composition/Information on ingredients】

Substance/Mixture: Substance
Chemical substance name: Zinc stearate
(Fatty acids, C16-18, zinc salts)
CAS number: 557-05-1 (91051-01-3)
ENCS number: (2)-615
EINECS number: 209-151-9 (293-049-4)

【4. First-aid measures】

Inhalation: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical advice.
On skin: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical advice, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.
In eyes: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical advice.
Ingestion: If large amount is swallowed, get medical advice.

【5. Fire-fighting measures】

Suitable Extinguishing media: Water spray, foam-extinguisher, powder-extinguisher and dry chemical
Inappropriate extinguishing media: Straight stream water
Specific hazards arising from the substance or mixture: Hazardous fume containing COX and NOX might be formed during combustion.
Special protective actions for fire-fighters: Fire-fighters should wear an appropriate respiratory apparatus and protective clothes for chemical.

【6. Accidental release measures 】

Personal precautions, protective equipment and emergency procedures:

Use proper protective equipment as indicated in Section 8.
Avoid direct contact with the spilled or leaked material.
Avoid inhaling this product in the air (Powder dust).
Evacuate the area if large amount of product is leaked.
Ventilate the area if necessary.

Environmental precautions:

Avoid flowing out to the rivers, household drains and other environment.

Methods and materials for containment and cleaning up:

Rake spills with a broom and collect it in appropriate container.
Store the container in a cool and dry place until it disposes.
Ventilate the area where this product was released.

【7. Handling and storage 】

Precautions for safe handling:

Refer to Section 8.
Wash hands carefully after handling this product.
Prohibit open flames while handling this product.
Use dust explosion-proof electrical equipment and light fixtures.
Avoid diffusion of this product to the air.
Do not eat, drink or smoke while handling this product.
Store this product in well-ventilated, dry and cool place.
Please make sure that the storage is not close to open flames, sparks and heat.
Please make sure that the container of this product is tightly closed when store this product.
Please use antistatic containers.

Conditions for safe storage, including any incompatibilities:

【8. Exposure controls/Personal protection 】

Control parameters

ACGIH:

Appropriate engineering controls

TWA 10 mg/m³(I), 3 mg/m³(R),STEL -
Eye washer and safety shower should be placed in storages where this product is stored and in buildings where this product is handled.
Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

Personal protective equipment

Hands:

Wear appropriate protective gloves.

Eyes:

Wear appropriate safety glasses.

Skin and Body:

Wear appropriate protective clothes.

Respiratory:

Wear air-purifying respirator with a tight-fitting facepiece and a high-efficiency particular filter.

【9. Physical and chemical properties】

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|---|--|
| Physical state: | Solid (powder) |
| Color: | White |
| Odor: | No data available |
| Melting point/Freezing point: | 120- 128°C |
| Boiling point or initial boiling point and boiling range: | No data available |
| Flammability: | No data available |
| Lower and upper explosion limit/flammability limit: | Upper limit:No date Lower limit:20g/m ³ (ICSC(2000)) |
| Flash point: | No data available |
| Auto-ignition temperature: | >300°C |
| Decomposition temperature: | >250°C |
| pH: | No data available |
| Kinematic viscosity: | No data available |
| Solubility: | Poorly soluble in water |
| Partition coefficient/n-octanol/water(log value): | log Pow=1.2 |
| Vapor pressure: | No data available |
| Density and/or relative density: | No data available |
| Relative vapor density: | No data available |
| Particle characteristics: | No data available |

【10. Stability and reactivity】

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|-------------------------------------|---|
| Reactivity: | Not in particular. |
| Chemical stability: | Stable in general condition. |
| Possibility of hazardous reactions: | No data available |
| Conditions to avoid: | Slightly flammable, avoid high temperature. High concentration dispersion in air might result in powder |
| Incompatible materials: | Bases, Oxidizing materials |
| Hazardous decomposition product: | This product will form fume containing COX and NOX on heating or burning. |

【11. Toxicological information】

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|--------------------------------------|---|
| Acute toxicity (Oral): | Based on EC (2008), Oral Rat LD50 is larger than 5000mg/kg, therefore classified as "Not classified". |
| Acute toxicity (Dermal): | No data available |
| Acute toxicity (Gases): | Not applicable |
| Acute toxicity (Vapors): | Not applicable |
| Acute toxicity (Dusts and mists): | Based on EC (2008), Dermal Rat LC50 is larger than 200mg/kg, therefore classified as "No classified". |
| Skin corrosion/irritation: | Based on NITE (2006), classified as "Not classified". |
| Serious eye damage / Eye irritation: | Based on NITE (2006), classified as "Not classified". |
| Respiratory sensitization: | No data available |
| Skin sensitization: | Based on EC (2008), EU-Risk Assessment Report concluded that "zinc distearate is no like to be skin sensitising", therefore classified as "Not classified". |
| Germ cell mutagenicity: | Based on EC (2008), zinc distearate does not have genetic toxicity <i>in vivo</i> and <i>in vitro</i> , therefore classified as "Not |
| Carcinogenicity: | No data available |
| Reproductive toxicity: | No data available |
| STOT-single exposure: | Based on NITE (2006), classified as "Not classified". |
| STOT-repeated exposure: | No data available |
| Aspiration hazard: | No data available |

【12. Ecological information】

Toxicity

Aquatic ecotoxicity:

Based on EC (2008), EU-Risk Assessment Report concluded that "the acute aquatic toxicity of zinc distearate is order of magnitude above the water solubility limit of this compound". However, this conclusion is not enough evidence to classify the aquatic toxicity of zinc distearate, therefore classification is not possible.

Terrestrial ecotoxicity:

No data available

Persistence and degradability:

No data available

Bioaccumulative potential:

No data available

Mobility in soil:

No data available

Other adverse effects:

No data available

【13. Disposal considerations】

Do NOT dump this product in the environment or in the household waste. Before disposal or incineration, contents of this product should be neutralized or stabilized if it's possible.

Obey local/regional/national/international regulations about the disposal or the incineration of this product (both contents and containers).

【14. Transport information】

UN number:

Not relevant as Not classified

UN Proper Shipping Name:

Not relevant as Not classified

Transport hazard class:

Not relevant as Not classified

Packing group:

Not relevant as Not classified

Environmental hazards:

Not relevant as Not classified

Special precautions for user:

Follow the transportation methods stipulated.

Transport in bulk according to IMO instruments:

Not applicable for product as supplied.

【15. Regulatory information】

Inventory information

| Inventory Name | Zinc stearate | |
|----------------------|---------------|-----------------|
| | Status | Registry Number |
| AICS (Australia): | Present | — |
| DSL (Canada): | Present | — |
| IECSC (China): | Present | 30048 |
| EINECS (EU): | Present | 209-151-9 |
| ENCS (Japan): | Present | (2)-615 |
| KECL (Korea): | Present | KE-26418 |
| INSQ (Mexico): | Present | — |
| NZIoC (New Zealand): | Present | — |
| PICCS (Philippines): | Present | — |
| TSCA (U.S.A.): | Present | — |

【16. Other Information】

Manufacturer information

| | |
|----------------------------------|--|
| Manufacturer name: | Formosa Organic Chemical Industry Co., Ltd. |
| Address: | 575 Soi 11 Pattana 1 Road, Bangpoo Industrial Estate, Praeksa, Amper Muang, Samutprakarn, 10280, Thailand |
| Telephone number: | +66 2709 3016-9 |
| Emergency contact number: | +66 2709 3016-9 |
| FAX number: | +66 2324 0353 |

References

- 1 National Institute of Technology and Evaluation (NITE)
- 2 *GHS 9th edition*

Manufacture disclaimer

All information given in this SDS is based on the data which is considered to be accurate, but the information do not guarantee enough safety. All chemical material may have an unknown hazard to human and conditions of methods of handling, storage, use and disposal of the product are beyond suppliers' control; therefore all risks and consequences of use the product are on users' responsibilities and users need to set appropriate safety measures for special use. In addition, all classification in this SDS was written in accordance with the GHS classification of the 9th revised edition. However, GHS mentioned that countries are free to determine which of the building blocks will be applied in different parts of label elements and building blocks. Therefore, many countries set own requirements of label elements and building blocks. In the cases of export from Japan or use in other countries, SDSs and labels are needed, which are in accordance with the local laws and regulations of exporting countries or user countries. Please contact supplier beforehand for checking SDSs and labels are suitable for the local laws and regulations.