

【1. Chemical product and company identification】

Chemical substance name:	Mixture of	Zinc stearate Magnesium stearate
Product name:	Daiwax MZH	
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	

【2. Hazards identification】

1. GHS classification

a. Physical hazards

Flammable solids:	Classification not possible
Pyrophoric solids:	Classification not possible
Self-heating substances and mixtures:	Classification not possible
Substances and mixture which, in contact with water, emit flammable gases:	Classification not possible
Corrosive to metals:	Classification not possible

b. Health hazards

Acute toxicity (oral):	Not classified
Acute toxicity (dermal):	Classification not possible
Acute toxicity (gases):	Not applicable
Acute toxicity (vapors):	Classification not possible
Acute toxicity (dusts and mists):	Not classified
Skin corrosion/irritation:	Category 3
Serious eye damage / eye irritation:	Category 2B
Respiratory sensitization:	Classification not possible
Skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
STOT-single exposure:	Category 3
STOT-repeated exposure:	Classification not possible
Aspiration hazard:	Classification not possible

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c. Environmental hazards

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

2. Label elements

Signal words:
Hazard pictogram:

Warning



Hazard statement

H316: Causes mild skin irritation.
H320: Causes eye irritation.
H335: May cause respiratory irritation.

Precautionary statement

Prevention

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P264: Wash eyes thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.

Response

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P312: Call a doctor or a physicians if you feel unwell.

Storage

P405: Store locked up.
P430+P233: Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501: Dispose of contents/container in accordance with local/regional/national/ international regulations.

【3. Composition/Information on ingredients】

Substance/Mixture:

Mixture

Chemical name	Zinc stearate	Magnesium stearate
Compounding ratio (%)	Non-disclosure	Non-disclosure
CAS registry number	557-05-1	557-04-0
ENCS number	(2)-615	(2)-615
EINECS number	209-151-9	209-150-3

【4. First-aid measures 】

IN EACH CASES OF FOLLOWING EMERGENCIES, VICTIMS SHOULD BE TREATED BY PARTICULAR FIRST-AID MEASURES AS FOLLOW

In eyes:	Flush eyes with plenty of water for at least 15 minutes. Then 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.
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.
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
Flammable properties:	Slight fire hazard. Dust/air mixtures may ignite or explode.
Special protective actions for fire-fighters:	Take away a product container from a fire if possible. Keep containers cool with a plenty of water after fire extinction. Fire-fighters should wear an appropriate respiratory apparatus and protective clothes for chemical.

【6. Accidental release measures 】

Personal precautions:	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).
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.
Environmental precautions:	Avoid flowing out to the rivers, household drains and other environment.

【7. Handling and storage】

Handling:

Avoid contact with eyes, skin and clothes.
Wash hands carefully after handling this product.
Prohibit open flames while handling this product.
Avoid deposition of this product.
Use dust explosion-proof electrical equipment and light fixtures.
Do not eat, drink or smoke while handling this product.

Storage:

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.

【8. Exposure controls/Personal protection】

Component Exposure Limit

Zinc stearate

NIOSH:

10 mg/m³ TWA total dust; 5 mg/m³ TWA respirable dust

OSHA (US):

15 mg/m³ TWA total dust; 5 mg/m³ TWA respirable dust

Magnesium stearate

ACGIH

10 mg/m³ TLV-TWA (Stearates)

Engineering controls:

Eye washer and safety shower should be placed in storages where this product is stored and in buildings where this product is handled.

Ventilation:

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】

Appearance:

White solid (powder)

Odor:

No data available

Odor threshold:

No data available

pH:

No data available

Melting point and freezing point:

120 - 140°C

Initial boiling point and boiling range:

No data available

Flash point (Open cup):

No data available

Evaporation rate (Butyl acetate =1):

No data available

Flammability (solids, gas):

No data available

Explosive limits:

No data available

Vapor pressure:	No data available
Vapor density (Air =1):	No data available
Specific gravity or density:	No data available
Solubility:	Insoluble in water
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

【10. Stability and reactivity】

Reactivity:	Not in particular.
Chemical stability:	Stable in general condition.
Conditions to avoid:	Avoid contact with incompatible materials. Avoid heat, flames, sparks and other sources of ignition. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.
Incompatible materials:	Oxidizing materials
Hazardous decomposition product:	Oxides of calcium, magnesium and zinc
Possibility of hazardous reactions:	
Heating or combustion reaction:	Hazardous This product will form hazardous fume of oxides of calcium, magnesium and zinc on heating or burning.

【11. Toxicological information】

Acute toxicity (Oral):	Zinc stearate Based on EC (2008), Oral Rat LD50 is larger than 5000mg/kg.
	Magnesium stearate Based on IUCLID (2000), Oral Rat LD50 is larger than 10000mg/kg.
Acute toxicity (Dermal):	No data available
Acute toxicity (Gases):	Not applicable
Acute toxicity (Vapors):	Not applicable
Acute toxicity (Dusts and mists):	Zinc stearate Based on EC (2008), Dermal Rat LC50 is larger than
Skin corrosion/irritation:	Zinc stearate Based on EC (2008), Dermal Rat LC50 is larger than
	Magnesium stearate Based on NITE (2006), there is a possibility of skin irritation to human.
Serious eye damage / Eye irritation:	Zinc stearate Based on NITE (2006), there is a possibility of eye irritation to human.
	Magnesium stearate Based on NITE (2006), there is a possibility of eye irritation to human.
Respiratory sensitization:	No data available
Skin sensitization:	Zinc stearate Based on EC (2008), EU-Risk Assesment Report concluded that "zinc distearate is no like to be skin sensitising", therefore classified as "Not classified".

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Germ cell mutagenicity:

Zinc stearate

Based on EC (2008), zinc distearate does not have genetic toxicity *in vivo* and *in vitro*, therefore classified as "Not classified".

Carcinogenicity:

No data available

Reproductive toxicity:

No data available

STOT-single exposure:

Zinc stearate

Based on NITE (2006), zinc stearate has a possibility of respiratory irritation to human, therefore classified as "Category 3".

STOT-repeated exposure:

No data available

Aspiration hazard:

No data available

Component analysis - LD50/LC50:

Zinc stearate

Oral LD50 Rat > 5000mg/kg

Dermal LD50 Rabbit > 2000mg/kg

Magnesium stearate

Oral LD50 Rat > 10000mg/kg

Inhalation (Dust)

Acute exposure:

Zinc stearate

May cause irritation, coughing and difficulty breathing. Inhalation of fine dust has produced pneumonia and death in infants. Other effects reported in insufflated dogs included loss of appetite, fever with pneumonitis, peribronchitis and reduction in alveolar size.

Magnesium stearate

Inhalation of dust may cause mild irritation.

Excessive amounts may produce coughing and difficult breathing.

Chronic exposure:

Zinc stearate

A single case of chronic pneumoconiosis and subsequent fatal lung disease has been reported in a worker exposed for 29 years to zinc stearate. Symptoms included gradually increasing dyspnea and productive cough. Additional effects reported from prolonged inhalation of large amounts include cyanosis, progressive chemical pneumonitis, emphysema, pulmonary edema, and pulmonary granulomatosis.

Skin contact

Acute exposure:

Zinc stearate

Contact may cause redness. No irritation on intact or broken skin was noted in rats after 24 hours.

Magnesium stearate

High concentrations may cause unpleasant deposits on the skin. Injury may occur by chemical or mechanical action or by the rigorous skin cleansing procedures necessary for removal of the dust.

Chronic exposure:

Zinc stearate

A papular, pustular eczema due to blockage of the sebaceous glands has been reported in workers packing zinc stearate. Irritant granulomas and a single case of contact dermatitis have also been reported.

Eye contact

Acute exposure:

Zinc stearate

Contact may cause irritation with redness and pain.

Magnesium stearate

High concentrations may cause unpleasant deposits in the eyes, mechanical irritation and seriously reduce visibility.

No data available

Chronic exposure:

Ingestion

Acute exposure:

Zinc stearate

Large dose may cause abdominal spasms and diarrhea.

Magnesium stearate

Ingestion of a large amount of magnesium salts may cause diarrhea and abdominal pain.

More serious symptoms of hypermagnesemia, such as electrolyte imbalance, central nervous system depression and neurological and cardiac impairment, are rare in the absence of intestinal or renal disease since magnesium is poorly absorbed from the gastrointestinal tract and readily excreted by the kidneys.

Chronic exposure:

Magnesium stearate

Magnesium preparations may cause phosphorus depletion syndrome.

【12. Ecological information】

Ecotoxicity

Aquatic ecotoxicity:

No data available

Terrestrial ecotoxicity:

No data available

Persistence and degradability:

No data available

Bioaccumulative potential:

No data available

Mobility in soil:

No data available

Hazardous to the ozone layer:

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 Applicable on UN classification

HS code:

2915.70

US DOT:

No classification assigned

TDG:

No classification assigned

ADR:

No classification assigned

RID:

No classification assigned

IATA:

No classification assigned

ICAO:

No classification assigned

IMDG:

No classification assigned

Marine pollutant:

Not applicable

Particular safety measures for transportation:

Avoid damage to the container while loading this product.
Do not put heavy objects on top of this product.
Load carefully to prevent the collapse of cargo.
Avoid direct sunlight to this product during transport.

【15. Regulatory information】**Inventory information**

Inventory Name	Zinc stearate		Magnesium stearate	
	Status	Registry Number	Status	Registry Number
AICS (Australia):	Present	—	Present	—
DSL (Canada):	Present	—	Present	—
IECSC (China):	Present	30048	Present	30034
EINECS (EU):	Present	209-151-9	Present	209-150-3
ENCS (Japan):	Present	(2)-615	Present	(2)-611
KECL (Korea):	Present	KE-26418	Present	KE-26390
INSQ (Mexico):	Present	—	Present	—
NZIoC (New Zealand):	Present	HSR003105	Present	—
PICCS (Philippines):	Present	—	Present	—
TCSI (Taiwan):	Present	—	Present	—
Inventory (Turkey):	Present	EC No. 209-151-9	Present	EC No. 209-150-3
TSCA (U.S.A.):	Present	—	Present	—

【16. Other Information】**References**

- 1 ChemADVISOR, Inc. (2014). *Magnesium stearate* [Data file]. Retrieved from LOLI database.
- 2 ChemADVISOR, Inc. (2014). *Zinc stearate* [Data file]. Retrieved from LOLI database.
- 3 European Communities. (2008). Risk Assessment Report. *Zinc Distearate (Final Report)*, 44.
- 4 IUCLID. (2000). Dataset for *Magnesium stearate* [Data file].
- 5 IUCLID. (2000). Dataset for *Zinc distearate* [Data file].
- 6 Japan Chemical Database Ltd. (2015). *Magnesium stearate* [Data file]. Retrieved from ezADVANCE database.
- 7 Japan Chemical Database Ltd. (2015). *Zinc stearate* [Data file]. Retrieved from ezADVANCE database.

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- 8 National Institute of Technology and Evaluation (NITE). (2006). Classification result(ID801-900) [Data file]. Retrieved from [http://www.safe.nite.go.jp/english/files/ghs_xls/classification_result_e\(ID801-900\).xls](http://www.safe.nite.go.jp/english/files/ghs_xls/classification_result_e(ID801-900).xls).
- 9 National Institute of Technology and Evaluation (NITE). (2006). *Magnesium stearate* [Data file].
- 10 National Institute of Technology and Evaluation (NITE). (2006). *Zinc stearate* [Data file].
- 11 United Nations. (2013). *Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (5th ed.)*. (The Japanese GHS Inter-ministerial Committee, Trans.). Tokyo: The Chemical Daily Co., Ltd..

Key/ Legend

ACGIH - American Conference of Governmental Industrial Hygienists

AICS - Australia Inventory of Chemical Substances

ADR - European Road Transport

CAS - Chemical Abstracts Service

°C - degree Celsius

DSL - Domestic Substances List

EINECS - European Inventory of Existing Commercial Chemical Substances (European Union)

ENCS - Existing and New Chemical Substances (Japan)

GHS - Globally Harmonized System of Classification and Labelling of Chemicals

HPV - High Production Volume

HS code - Harmonized System code

IATA - International Air Transport Association

ICAO - International Civil Aviation Organization

IECSC - Inventory of Existing Chemical Substances (China)

IMDG - International Maritime Dangerous Goods

INSQ - National Inventory of Chemical Substances (Mexico)

IUCLID - International Uniform Chemical Information Database

KECL - Korea Existing Chemicals Inventory

NITE - National Institute of Technology and Evaluation

LD50 - Lethal Dose, 50% or Median Lethal Dose

LOLI - List Of Lists™-ChemADVISOR's Regulatory Database

NZIoC - New Zealand Inventory of Chemicals

PICCS - Philippines Inventory of Chemicals and Chemical Substances

RTECS - Registry of Toxic Effects of Chemical Substances®

RID - European Rail Transport

STOT - Specific Target Organ Toxicity

TCSI - Taiwan Chemical Substance Inventory

TDG - Transportation of Dangerous Goods

TLV - Threshold Limit Value

TSCA - Toxic Substances Control Act (U.S.A.)

TWA - Time Weighted Average

UN - United Nations

US DOT - United States Department of Transportation

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 fifth 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.