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**Safety Data Sheet****1. Chemical product and company identification****Product name** : Magnesium oxide, heavy**SDS code** : D8-06**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

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URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**Recommended use** : For research and experimental use only.**Restrictions on use** : Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.**2. Hazards identification****GHS classification**

|  |  |                             |                             |
|--|--|-----------------------------|-----------------------------|
| Physical hazards                                 | Explosives   | No classification           |                             |
|  | Flammable gases  | No classification           |                             |
|  | Aerosol  | No classification           |                             |
|  | Oxidizing gases  | No classification           |                             |
|  | Gases under pressure   | No classification           |                             |
|  | Flammable liquids  | No classification           |                             |
|  | Flammable solids   | No classification           |                             |
|  | Self-reactive substances and mixtures                                    | No classification           |                             |
|  | Pyrophoric liquids   | No classification           |                             |
|  | Pyrophoric solids  | No classification           |                             |
|  | Self-heating substances and mixtures                                     | No classification           |                             |
|  | Substances and mixtures which in contact with water emit flammable gases | No classification           |                             |
|  | Oxidizing liquids  | No classification           |                             |
|  | Oxidizing solids   | classification not possible |                             |
|  | Organic peroxides  | No classification           |                             |
|  | Corrosive to metals  | classification not possible |                             |
|  | Desensitized explosives  | classification not possible |                             |
|  | Health hazards   | Acute toxicity (oral)       | No classification           |
|  |  | Acute toxicity (dermal)     | classification not possible |
| Acute toxicity (inhalation:gas)                  |  | No classification           |                             |
| Acute toxicity (inhalation:vapors)               |  | No classification           |                             |
| Acute toxicity (inhalation:dust/mist)            |  | classification not possible |                             |
| Skin corrosion/irritation                        |  | classification not possible |                             |
| Serious eye damage/eye irritation                |  | Category 2                  |                             |
| Respiratory sensitization                        |  | classification not possible |                             |
| Skin sensitization                               |  | classification not possible |                             |
| Germ cell mutagenicity                           |  | classification not possible |                             |
| Carcinogenicity                                  | classification not possible  |                             |                             |
| Reproductive toxicity                            | classification not possible  |                             |                             |
| Specific target organ toxicity (single exposure) | Category 3 (Respiratory tract irritation.)                               |                             |                             |

|                       |   |                             |
|-----------------------|---|-----------------------------|
| Environmental hazards | Specific target organ toxicity (repeated exposure)        | classification not possible |
|                       | Aspiration hazard   | classification not possible |
|                       | Hazardous to the aquatic environment, short-term (acute)  | classification not possible |
|                       | Hazardous to the aquatic environment, long-term (chronic) | classification not possible |
|                       | Hazardous to the ozone layer                              | classification not possible |

Hazard pictograms (GHS JP)



GHS07

Signal word (GHS JP) : Warning  
 Hazard statements (GHS JP) : Causes serious eye irritation (H319)  
 May cause respiratory irritation (H335)

Precautionary statements (GHS JP)

Prevention : Avoid breathing dust/fume/gas/mist/vapors/spray. (P261)  
 Wash hands, forearms and face thoroughly after handling. (P264)  
 Use only outdoors or in a well-ventilated area. (P271)  
 Wear protective gloves/protective clothing/eye protection/face protection. (P280)

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

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

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

### 3. Composition/information on ingredients

Distinction of substance or mixture : Substance

| Name            | Concentration or Concentration range | Formula | Kanpo number |                             | CAS RN    |
|-----------------|--------------------------------------|---------|--------------|-----------------------------|-----------|
|                 |                                      |         | CSCL no      | ISHL no                     |           |
| Magnesium oxide | ≥96.0%, ≤100%                        | MgO     | (1)-465      | Existing Chemical Substance | 1309-48-4 |

The above concentration or concentration range are not product specification.

All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

### 4. First aid measures

#### First aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
 Get immediate medical advice/attention.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.  
 Gently wash with plenty of soap and water.  
 Get immediate medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Get immediate medical advice/attention.

First-aid measures after ingestion : Rinse mouth.  
Get immediate medical advice/attention.

## 5. Fire fighting measures

Suitable extinguishing media : Use proper extinguishing media depending on peripheral fire.  
Unsuitable extinguishing media : Do not use a heavy water stream.  
Fire hazard : This product is unburnable.  
Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.  
Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.  
In the case of peripheral fire, quickly remove movable containers to safe places.  
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.  
Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Before entering, ventilate the area.  
Do not let unauthorized persons come close to the area.  
Immediately place the leakage area in isolation, with taking proper distances for all directions.  
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

### Environmental precautions

Environmental precautions : Avoid release to the environment.  
Prevent entry to sewers and public waters.

### Methods and Equipment for Containment and Cleaning up

Methods for cleaning up : Take care not to generate dust, sweep it up as much as possible, collect it in an empty container that can be sealed, and move it to a safe place.  
Wash out the spilled area with large amounts of water.

## 7. Handling and storage

### Handling

Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.  
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.  
Precautions for safe handling : Do not eat, drink or smoke when using this product.  
Thoroughly wash your hands and gargle after handling.  
Ensure good ventilation of the work station.  
Do not contact, breathe or swallow.  
Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

### Storage

Storage conditions : Store locked up.  
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.  
Material used in packaging/containers : Airtight container.  
Technical measures : Comply with applicable regulations.  
Storage temperature : Cool and dark place

## 8. Exposure controls / Personal protection equipment

### Exposure limit values

#### Magnesium oxide

|                         |                                     |
|-------------------------|-------------------------------------|
| Exposure limits (ACGIH) | TWA 10 mg/m <sup>3</sup> (l),STEL - |
|-------------------------|-------------------------------------|

Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

### Protective equipment

Respiratory protection : Dustproof mask  
 Hand protection : Protective gloves  
 Eye protection : Protective glasses (general glasses, glasses with side-shields, goggles)  
 Skin and body protection : Protective clothing, Protective boots, Protective apron

## 9. Physical and chemical properties

Physical state : Solid  
 Appearance : Powder ~ Granular  
 Color : white  
 Odor : Odorless  
 pH : No data available  
 Melting point : 2800 °C  
 Freezing point : No data available  
 Boiling point : 3600 °C  
 Flash point : No data available  
 Auto-ignition temperature : No data available  
 Decomposition temperature : No data available  
 Flammability (solid, gas) : No data available  
 Vapor pressure : No data available  
 Relative density : No data available  
 Density :  $\geq$ About 0.17 g/cm<sup>3</sup> (bulk density)  
 Relative gas density : No data available  
 Solubility : Soluble in acids. Soluble in ammonium salt aqueous solution. Sparingly soluble in water. Insoluble in ethanol.  
 Partition coefficient n-octanol/water (Log Pow) : No data available  
 Explosive limits (vol %) : No data available  
 Viscosity, kinematic : No data available  
 Particle characteristics : No data available

## 10. Stability and reactivity

Reactivity : No data available  
 Chemical stability : Stable under normal handling conditions. When left in the air, it easily absorbs carbon dioxide due to the presence of moisture. It becomes magnesium hydroxide by absorbing moisture. It becomes magnesium carbonate by absorbing carbon dioxide and moisture.  
 Possibility of hazardous reactions : There is the risk of explosion on contact with aluminum powder, aniline perchlorate, magnesium powder and sulfur on heating. Reacts dangerously with ammonia, strong acids, bromine pentafluoride, chlorine trifluoride and phosphorus pentachloride. Reaction with phosphorus pentachloride is accompanied by incandescence. Contact with substances containing halogens causes dangerous reactions or fire.  
 Conditions to avoid : Sunlight, heat, moisture. Contact with ammonia, strong acids, bromine pentafluoride, chlorine trifluoride, phosphorus pentachloride and halogen compounds.  
 Incompatible materials : Ammonia, Strong acids, Bromine pentafluoride, Chlorine trifluoride, Phosphorus pentachloride, Halogen compounds  
 Hazardous decomposition products : Magnesium compounds

## 11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

| Magnesium oxide                       |  |
|---------------------------------------|--|
| Acute toxicity (oral)                 | No classification                          |
| Acute toxicity (dermal)               | classification not possible                |
| Acute toxicity (gas)                  | No classification                          |
| Acute toxicity (vapour)               | No classification                          |
| Acute toxicity (inhalation:dust/mist) | classification not possible                |
| Skin corrosion/irritation             | classification not possible                |
| Serious eye damage/irritation         | Category 2                                 |
| Respiratory sensitization             | classification not possible                |
| Skin sensitization                    | classification not possible                |
| Germ cell mutagenicity                | classification not possible                |
| Carcinogenicity                       | classification not possible                |
| Reproductive toxicity                 | classification not possible                |
| STOT-single exposure                  | Category 3 (Respiratory tract irritation.) |
| STOT-repeated exposure                | classification not possible                |
| Aspiration hazard                     | classification not possible                |

## 12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

| Magnesium oxide                                   |                             |
|---|-----------------------------|
| Hazardous to Aquatic Environment - Acute Hazard   | classification not possible |
| Hazardous to Aquatic Environment - Chronic Hazard | classification not possible |
| Persistence and degradability                     | No data available           |
| Bioaccumulative potential                         | No data available           |
| Mobility in soil                                  | No data available           |
| Hazardous to the ozone layer                      | classification not possible |

## 13. Disposal considerations

- Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.
- Contaminated container and packaging : Empty the packaging completely prior to disposal.  
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

## 14. Transport information

### International Regulations

#### Transport by sea(IMDG)

- UN-No. (IMDG) : Not applicable  
 Proper Shipping Name (IMDG) : Not applicable  
 Packing group (IMDG) : Not applicable  
 Transport hazard class(es) (IMDG) : Not applicable

#### Air transport(IATA)

- UN-No. (IATA) : Not applicable  
 Proper Shipping Name (IATA) : Not applicable  
 Packing group (IATA) : Not applicable  
 Transport hazard class(es) (IATA) : Not applicable

- Marine pollutant : Not applicable

#### Regulations in Japan

- Regulatory information by sea : Not applicable  
 Regulatory information by air : Not applicable

**Special transport precautions** : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

## 15. Regulatory information

### National law

Industrial Safety and Health Law : Not applicable  
Japanese Poisonous and Deleterious Substances Control Law : Not applicable  
Fire Service Law : Not applicable  
Foreign Exchange and Foreign Trade Control Act : Export Trade Control Ordinance appendix 1-16  
Japanese Pollutant Release and Transfer Register Law (PRTR Law) : Not applicable

## 16. Other information

Data sources : Handbook of 17423 Chemical Products, The Chemical Daily Co, Ltd.  
International Chemical Safety Cards.  
National Institute of Technology and Evaluation (NITE).  
2020 Emergency Response Guidebook (ERG 2020).

Other information : The SDS is copyrighted material of Hayashi Pure Chemical Ind, Ltd. This Safety Data Sheet is intended to be provided for business operators who handle chemical substance products of the relevant product and is not intended to assure safety in any way. The Safety Data Sheet does not verify all the information on the applicable chemical substance in the present time. With the recognition in that unknown danger constantly exists in the relevant chemical substance, the product shall be used in the principle of self-responsibility of the user with the highest priority to safety from transport and unpacking to disposal. When the relevant chemical substance is used, the user him/herself shall collect safety information and shall investigate laws and regulations at the place, organizations, countries, etc. where the substance is actually used and give the highest priority to them. The Company shall take no responsibility for investigating state and local regulations and the user shall handle this problem on his/her own responsibility. In the event that SDS in Japanese and SDS translated into other languages exist, the document described in Japanese is prior to all other documents whether or not there is any difference in contents, and documents in other languages shall be references.