Issue date: 7/10/2003
Revision date: 3/6/2024

Safety Data Sheet

1. Chemical product and company identification

Product name	:	Magnesium oxide

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	25018
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Serious eye damage/eye irritation	Category 2
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)

Hazard pictograms

Signal word	:	Warning
Hazard statements	:	Causes serious eye irritation May cause respiratory irritation

Precautionary statements

Prevention	:	Avoid breathing dust. Wash hands, forearms and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	:	IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor if you feel unwell. If eye irritation persists: Get medical advice/attention.
Storage	:	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	:	Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national

and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Synonyms : Magnesia

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Magnesium oxide	≥ 90	MgO	Listed	215-171-9	1309-48-4

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

First-aid measures after skin contact : Wash the affected areas under running water.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.

First-aid measures after ingestion : Give the victim water. If necessary, get medical attention.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

Environmental precautions : Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

Methods and Equipment for Containment and Cleaning up

For containment : Sweep up in a chemical waste container. Flush contaminated area with copious amounts of water.

7. Handling and storage

Handling

Technical measures	:	If necessary, wear proper protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols. Do not allow contact with acids.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	10 mg/m³

Appropriate engineering controls	:	Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection	:	If necessary, wear dust mask
Hand protection	:	Impervious protective gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Solid
Color	:	White
Odor	:	Odorless
pH	:	10.3 (as a saturated aqueous solution)
Melting point	:	2800 ° C
Freezing point	:	No data available
Boiling point	:	3600
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	3.65 g/cm³
Relative gas density	:	No data available
Solubility	:	Organic solvents: Insoluble in ethanol. Water: 6.2 mg/L
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	:	Reacts with water to produce magnesium hydroxide. Dissolves in acid to form magnesium salts.
Chemical stability	:	When it absorbs carbon dioxide and moisture from the air, it becomes partly basic magnesium carbonate. Hydroscopic.
Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat, moisture.
Incompatible materials	:	Acids.
Hazardous decomposition products	:	fume.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50=3870 mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Classification not possible
Serious eye damage/irritation	:	Causes serious eye irritation Based on the information that a slight irritation of the eye was observed in 95 workers exposed to the dust of this substance (an unknown concentration), it was classified in category 2.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible As for in vitro, it is reported that a bacterial reverse mutation test was negative.
Carcinogenicity	:	Classification not possible As for humans, it is reported that excess cancers occurred in multiple organs by combined occupational exposure to this substance and others, and specific tumors formed in exposure to this substance were the lip, stomach, and lung cancers based on the standardized incidence ratio (SIR). However, it is described that the interpretation of this result is limited because the number of subjects were small and the level and duration of exposure to magnesium oxide were unknown. Besides, there is no evidence of carcinogenicity in humans by an inhalation route of magnesium oxide dust or fumes. It is pointed out that the increased frequency of lung cancer observed in welders in the past is likely caused by exposure to hexavalent chromium, not magnesium oxide. As for experimental animals, it is described that the substance was intratracheally applied in hamsters at a dose of 2mg/week for 30 weeks and observed for up to 100 weeks and as a result, the number of histiocytic lymphomas increased. However, there is no carcinogenicity test report according to the standard guidelines. From the above, ACGIH classified this substance in A4 in carcinogenicity. Also in this classification, the substance was classified as "Classification not possible" in this hazard class due to lack of data.
Reproductive toxicity	:	Classification not possible

STOT-single exposure	:	May cause respiratory irritation It is reported that this substance is irritating to the respiratory tract, but no other acute effects were reported. From the above, the substance was classified in category 3 (respiratory tract irritation).
STOT-repeated exposure	:	Classification not possible
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Classification not possible
Aquatic chronic	:	Classification not possible

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecology - waste materials	:	Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

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

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
ICSC Card (2009) .
Handbook of 17524 Chemical Products, The Chemical Daily Co. (2024) .

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.