MagShield® Magnesium Hydroxide

Safety Data Sheet

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance

Trade name : MagShield® S
MagShield® UF

Chemical name : Magnesium hydroxide

CAS No : 1309-42-8

Formula : Mg(OH)2

Other means of identification : Magnesium dihydroxide, Magnesium hydroxide, Magnesium(II) hydroxide, milk of magnesia

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Chemically precipitated magnesium hydroxide powder for use in flame retardant and other specialty chemical applications.

1.3. Details of the supplier of the safety data sheet

Martin Marietta Magnesia Specialties
1800 Eastlake Road
Manistee, Michigan 49660, USA
Tel: +001 410 780 5500

1.4. Emergency telephone number

Emergency number : CHEMTREC, U.S.: 1-800-424-9300 INTERNATIONAL: +1-703-527-3887 Available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

This product is not classified as hazardous according to the criteria in the 2012 OSHA Hazard Communication Standard (29CFR 1910.1200).

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

Other hazards not contributing to the classification : No additional hazards have been identified.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name : MagShield® Magnesium Hydroxide

CAS No : 1309-42-8

Name	Product identifier	%	Classification (GHS-US)
Magnesium hydroxide	(CAS No) 1309-42-8	98.5	Not classified
Oxides of silicon, iron, aluminum, and calcium	(CAS No) mixture	1	Not classified
Inorganic chloride salts	(CAS No) mixture	0.3	Not classified
Inorganic silicates and carbonates	(CAS No) mixture	0.2	Not classified

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. Do not breathe dust.

Symptoms/injuries after inhalation : Inhalation may cause: irritation, cough, shortness of breath.

Symptoms/injuries after skin contact : Effects of skin contact may include: skin irritation.

Symptoms/injuries after eye contact : May cause eye irritation..

4.3. Indication of any immediate medical attention and special treatment needed

No additional medical information found. If you feel unwell, seek medical advice.

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media : Not combustible. If there is a fire close by, use suitable extinguishing agents. Water fog. Carbon dioxide. Dry powder. Foam.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : If magnesium hydroxide is heated to the point of decompostion (>350 °C), it forms magnesium oxide and water. If magnesium oxide is heated to the point of volatilization (i.e., >1700 °C), magnesium oxide fumes may be generated.

Explosion hazard : Product is not explosive.

Reactivity : Reacts with: Incompatible materials.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

Other information : No additional risk management measures required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid creating or spreading dust. Dust deposited may be vacuum cleaned.

6.1.1. For non-emergency personnel

Protective equipment : Where excessive dust may result, use approved respiratory protection equipment.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Where excessive dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Do not allow minor leaks or spills to accumulate on walking surfaces. Contain and collect as any solid.

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of dust.

Hygiene measures : Smoking, eating and drinking should be prohibited in areas of storage and use. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Incompatible materials. Keep container closed when not in use.

Incompatible products : ACID (Strong) - vigorous reaction, heat generated; MALEIC ANHYDRIDE – Alkali and other alkaline earth compounds including magnesium compounds, will cause explosive decomposition of maleic anhydride; PHOSPHORUS – Phosphorus boiled with alkaline hydroxides yields mixed phosphines which may ignite spontaneously with air.

7.3. Specific end use(s)

Reference section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

For components listed in Section 3.1, all available OELs are displayed

Magnesium hydroxide (1309-42-8)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (inhalable) as Particulates (insoluble or poorly soluble) not otherwise specified
USA ACGIH	ACGIH TWA (mg/m³)	3 mg/m³ (respirable fraction) as Particulates (insoluble or poorly soluble) not otherwise specified
USA OSHA	OSHA PEL (TWA) (mg/m3)	15 mg/m³ (total dust) as inert or nuisance dust not otherwise regulated
USA OSHA	OSHA PEL (TWA) (mg/m3)	5 mg/m³ (respirable fraction) as inert or nuisance dust not otherwise regulated

8.2. Exposure controls

Appropriate engineering controls : Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Hand protection : No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin contact. It is a good industrial hygiene practice to minimize skin contact. Wear protective gloves. Dust impervious gloves.

Eye protection : Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product. Where excessive dust may result, wear goggles.

Other information : When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Powder.

Color : white.

Odor : Odorless.

Odor threshold : No data available

pH : No data available

pH solution : ≥ 10

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : 350 °C decomposes

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Self ignition temperature : Does not self-ignite

Decomposition temperature : 350 °C

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Density	:	2.36 g/cm³
Solubility	:	Water: 6.9 mg/l
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	Product is not explosive.
Oxidizing properties	:	No oxidizing properties.
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with: Incompatible materials.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Avoid contact with incompatible materials, excessive heat or cold; moisture.

10.5. Incompatible materials

ACID (Strong) - vigorous reaction, heat generated; MALEIC ANHYDRIDE – Alkali and other alkaline earth compounds including magnesium compounds, will cause explosive decomposition of maleic anhydride; PHOSPHORUS – Phosphorus boiled with alkaline hydroxides yields mixed phosphines which may ignite spontaneously with air.

10.6. Hazardous decomposition products

If magnesium hydroxide is heated to the point of decomposition (> 350 °C), it forms magnesium oxide and water. If magnesium oxide is heated to the point of volatilization (i.e., >1700 °C), magnesium oxide fumes may be generated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified. (Based on available data, the classification criteria are not met)

Magnesium hydroxide (1309-42-8)	
LD50 oral rat	> 2000 mg/kg OECD Guideline 423
LC50 inhalation rat (mg/l)	> 2.1 ml/m³ OECD Guideline 403. No mortality seen at this level.

Skin corrosion/irritation	:	Not classified. (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	:	Not classified. (Based on available data, the classification criteria are not met)
Respiratory or skin sensitization	:	Not classified. (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	:	Not classified. (Based on available data, the classification criteria are not met)
Carcinogenicity	:	Not classified. (Based on available data, the classification criteria are not met)

Magnesium hydroxide (1309-42-8)	
IARC group	Not listed in carcinogenicity class
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class

Reproductive toxicity	:	Not classified. (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	:	Not classified. (Based on available data, the classification criteria are not met)
Specific target organ toxicity (repeated exposure)	:	Not classified. (Based on available data, the classification criteria are not met)
Aspiration hazard	:	Not classified. (Based on available data, the classification criteria are not met)
Potential Adverse human health effects and symptoms	:	
Symptoms/injuries after inhalation	:	Inhalation may cause: irritation, cough, short breathing.
Symptoms/injuries after skin contact	:	Effects of skin contact may include: skin irritation.

Symptoms/injuries after eye contact : May cause eye irritation..

Likely routes of exposure : dermal;Inhalation.

SECTION 12: Ecological information

12.1. Toxicity

Magnesium hydroxide (1309-42-8)	
LC50 fish 1	1293 mg/l Onchorinchus mykiss
EC50 Daphnia 1	284.76 mg/l
LC50 fish 2	511.31 mg/l P. promelas
ErC50 (algae)	> 100 mg/l

12.2. Persistence and degradability

Magnesium hydroxide (1309-42-8)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	Does not degrade although it does dissolve.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not considered a dangerous good for transport regulations.

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Magnesium Hydroxide (1309-42-8)		
Listed on the United States TSCA (Toxic Substances Control Act) inventory		
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard	No
	Delayed (chronic) health hazard	No
	Fire hazard	No
	Sudden release of pressure hazard	No
	Reactive hazard	No
SARA Section 313 - Emission Reporting	Magnesium hydroxide is not hazardous and is not subject to Form R reporting requirements.	

15.2. International regulations

Jurisdiction	List	Comment
Asia Pacific	Asia - PAC	
Australia	Australian Inventory of Chemical Substances (AICS)	
China	Inventory of Existing Chemical Substances (IECSC)	
Japan	Existing and New Chemical Substances (ENCS)	# 1-386; inorganic compounds
Korea	KECI (Chemical Inventory of Korea)	KE-22716
New Zealand	Inventory of Chemicals (NZIoC)	HSNO approval
Phillipines	Inventory of Chemicals and Chemical Substances (PICCS)	
Europe	EEC International Cosmetics Ingredients Inventory (INCI)	absorbant/ buffering
	EU REACH pre-registered	
	EU REACH registered	01-2119488756-18-0001
	EU Inventory of Existing Commercial Chemical Substances (EINECS)	215-170-3
	German Water Hazard Class Substance List	Classification: VwVwS
	Switzerland Giftliste 1 (List of Toxic Substances)	G-8166 Toxic Category 4
Canada	Canadian Domesticated Substances List (DSL)	
North America	DOT Coast Guard Bulk Hazardous Materials	
	EPA Pesticide Inert Ingredients (PII)	
	FDA Food Substances Generally Recognized as Safe (GRAS)	
	FDA Priority-based Assessment of Food Additives (PAFA)	
	High Production Volume Chemicals (HPV)	
	OSHA Permissible Exposure Limits	8 hour TWA: total particulates 15 mg/ m^3
	Toxic Substances Control Act (TSCA) Inventory	
	Toxic Inventory Update Rule (IUR)	
	TSCA Section 8A-Preliminary Assessment Information Rule (PAIR)	
	High Production Volume Chemicals: ICCA	
	High Production Volume Chemicals: OECD	

15.3. US State regulations

Magnesium Hydroxide (1309-42-8)	
State or local regulations	Not listed

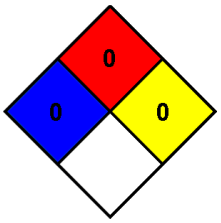
SECTION 16: Other information

Indication of changes

15	Modified	Clarified SARA 311/312 and 313 reporting requirements.

Data sources : ACGIH 2010
ESIS (European chemical Substances Information System; accessed at: http://esis.jrc.ec.europa.eu/index.php?PGM=cla European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
European Chemicals Agency (ECHA) Registered Substances list. Accessed at http://apps.echa.europa.eu/registered/data/dossiers/DISS-9ea79197-1fe4-5688-e044-00144f67d031/AGGR-0e1e1da7-ccae-4cb9-a7d9-45a4191708ed_DISS-9ea79197-1fe4-5688-e044-00144f67d031.html#GEN_RESULTS_HD
Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.
Merck Index, 11th edition
National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.
NIOSH Occupational Health Guide for chemical Substances - Vol. II, September, 1978.
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
US National Library of Medicine National Institutes of Health Haz-Map. Accessed at http://hazmap.nlm.nih.gov.

Abbreviations and acronyms	:	ACGIH (American Conference of Government Industrial Hygienists). ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling) of Chemicals . LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. TSCA: Toxic Substances Control Act. TWA: Time Weighted Average.
Other information	:	None.
NFPA health hazard	:	0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	:	0 - Materials that will not burn.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

SDS Prepared by: The Redstone Group, LLC
6077 Frantz Rd
Suite 207
Dublin, OH 43017
T 614-923-7472
www.redstonegrp.com

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