MagChem® Magnesium Hydroxide

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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SECTION 1: Identification

1.1. Identification

Product form : Substance

Substance name : MagChem ® Magnesium Hydroxide

Chemical name : Magnesium hydroxide

CAS-No. : 1309-42-8

Trade name : MagChem® MH-10
MagChem® MH-10 UF
MagChem® MH-10 LC
MagChem® MH-10 ULC

Formula : Mg(OH)2

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

1.2. Recommended use and restrictions on use

Use of the substance/mixture : MagChem® magnesium hydroxide products are used in many industrial applications as a fuel additive and corrosion inhibitor for boilers and gas turbines, a lubrication additive, a mild dental abrasive and pigment, a pH neutralizing and heavy metal precipitating agent in water, wastewater and soil treatment, an additive in explosives, an alkali for fuel gas scrubbing, a binding agent, a viscosity modifier in drilling mud, a fertilizer and many other applications.

1.3. Supplier

Martin Marietta Magnesia Specialties

1800 Eastlake Road

Manistee, Michigan 49660 - USA

T +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: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name : MagChem® Magnesium Hydroxide

CAS-No. : 1309-42-8

Name	Product identifier	%	GHS US classification
Magnesium hydroxide	(CAS-No.) 1309-42-8	98.8	Not classified
Oxides of silicon, iron, aluminum, and calcium	(CAS-No.) mixture	1	Not classified

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

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

First-aid measures after skin contact : Not expected to be an irritant. 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 persists.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

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

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

Symptoms/effects after skin contact : None under normal conditions.

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

Symptoms/effects after ingestion : None under normal conditions.

4.3. Immediate medical attention and special treatment, if necessary

No special procedures required.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) 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. Specific hazards arising from the chemical

Fire hazard : 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.

Explosion hazard : Product is not explosive.

Reactivity : Reacts with : Incompatible materials.

5.3. Special protective equipment and precautions for fire-fighters

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

6.1.1. For non-emergency personnel

Protective equipment : Avoid contact with skin and eyes. Chemical goggles or safety glasses.

6.1.2. For emergency responders

Protective equipment : Avoid contact with skin and eyes. Chemical goggles or safety glasses. Wear suitable gloves.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.

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.

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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Inorganic chloride salts (mixture)		
Not applicable		
Inorganic silicates and carbonates (mixture)		
Not applicable		
Magnesium hydroxide (1309-42-8)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ as Particulates (insoluble or poorly soluble) not otherwise specified 3 mg/m³ (respirable fraction / fraction respirable)
OSHA	OSHA PEL (TWA) (mg/m³)	10 mg/m³ (total dust) as inert or nuisance dust not otherwise regulated; 5 mg/m³ (respirable fraction) as inert or nuisance dust not otherwise regulated
OSHA	OSHA PEL (TWA) (ppm)	15 mppcf
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
Oxides of silicon, iron, aluminum, and calcium (mixture)		
Not applicable		

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation to minimize exposure to dust.

8.3. Individual protection measures/Personal protective equipment

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

Respiratory protection:

Where excessive dust may result, use approved respiratory protection equipment. Use an N95 respirator.

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
Melting point : 350 °C decomposes
Freezing point : No data available

Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Specific gravity / density	:	2.36 g/cm³ Theoretical density of Mg(OH)2
Solubility	:	Water: 6.9 mg/l
Log Pow	:	No data available
Auto-ignition temperature	:	Does not self-ignite
Decomposition temperature	:	> 350 °C
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	Product is not explosive.
Oxidizing properties	:	No oxidizing properties.

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 under normal conditions of use

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep/Store away from incompatible materials.

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

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Magnesium hydroxide (1309-42-8)	
LD50 oral rat	> 2000 mg/kg OECD Guideline 423

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)
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)
Viscosity, kinematic	: No data available
Likely routes of exposure	: dermal. Inhalation.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use. Do not breathe dust.
Symptoms/effects after inhalation	: Inhalation may cause: irritation, cough, shortness of breath.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

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

12.2. Persistence and degradability

MagChem® Magnesium Hydroxide (1309-42-8)	
Persistence and degradability	Not established.

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. Disposal methods

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

Department of Transportation (DOT)

In accordance with DOT

Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

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

WARNIN(: This product can expose you to Lead and Nickel compounds, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

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Revision date : 03/02/2021

Data sources : ACGIH 2019
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

Other information : None.

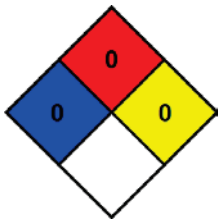
Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	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
	ATE: Acute Toxicity Estimate

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Indication of changes:

Section	Changed item	Change	Comments
15	California Proposition 65 Disclosure	Added	

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.