

Versamag™ Magnesium Hydroxide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Issue date: 4/15/2012 Revision date: 11/16/2023 Supersedes: 4/5/2021 Version: 3.4

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

1.1. Product identifier

Product form : Mixture
Trade Name : Versamag™ Magnesium Hydroxide
Chemical Name : Magnesium Hydroxide
EC-No. : 215-170-3
REACH registration No. : 01-2119488756-18
Formula : Mg(OH)₂
Other means of identification : Magnesium dihydroxide, Magnesium hydroxide, Magnesium(II) hydroxide, milk of magnesia
Only Representative : Charles River B.V.
Hambakenwetering 7
5231 DD 's-Hertogenbosch
The Netherlands
Phone: 0031 73640 6700

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
For professional use only
Use of the substance/mixture : For use in specialty or industrial applications.

1.2.2. Uses advised against

No data available

1.3. Details of the supplier of the safety data sheet

Supplier

Martin Marietta Magnesia Specialties
1800 Eastlake Road
Manistee, Michigan 49660 - USA
T +1 231-723-2577

Importer

M.A.F. Magnesite
Nieuwe Uitleg 10
2514BP Den Haag
The Netherlands
Tel: +31 70 3105900
www.magnesiumoxide.com

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 according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

No data available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

2.3. Other hazards

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

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

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The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Magnesium hydroxide	CAS-No.: 1309-42-8 EC-No.: 215-170-3	98.8	Not classified
Oxides of silicon, iron, aluminum, and calcium	CAS-No.: mixture	1	Not classified

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, both 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, coughing, shortness of breath.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: May cause eye irritation.

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

No special procedures required.

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 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.

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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

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.

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, shovelling) and collect in suitable container for disposal.

6.4. Reference to other sections

See Section 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 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)

No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Magnesium hydroxide (1309-42-8)

United Kingdom - Occupational Exposure Limits

WEL TWA (mg/m ³)	10 mg/m ³ inhalable dust
Dust, inorganic (respirable dust)	4 mg/m ³
Regulatory reference	EH40

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8.1.2. Recommended monitoring procedures

No data available

8.1.3. Air contaminants formed

No data available

8.1.4. DNEL and PNEC

Versamag™ Magnesium Hydroxide	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	16.67 mg/kg bodyweight/day
Acute - systemic effects, inhalation	117.54 mg/m ³
Long-term - systemic effects, dermal	16.67 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	117.54 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	10 mg/kg bodyweight
Acute - systemic effects, inhalation	34.78
Acute - systemic effects, oral	10 mg/kg bodyweight
Long-term - systemic effects, oral	10 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	34.78 mg/m ³
Long-term - systemic effects, dermal	10 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.1 mg/l
PNEC aqua (marine water)	0.01 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.08188 mg/kg dwt
PNEC sediment (marine water)	0.008188 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.01912 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	66.67 mg/kg

8.1.5. Control banding

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation to minimize exposure to dust.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

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. EN166

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8.2.2.2. Skin protection

No data available

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Dust production: dust mask with filter type P2. Use an N95 respirator. EN 143

8.2.2.4. Thermal hazards

No data available

8.2.3. Environmental exposure controls

Other information:

Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: White
Appearance	: Powder
Odour	: Odourless
Odour threshold	: Not available
Melting point	: 350 °C decomposes
Freezing point	: Not available
Boiling point	: Not available
Flammability (solid, gas)	: Non flammable
Explosive properties	: Product is not explosive
Oxidising properties	: No oxidizing properties
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosive limit (UEL)	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Does not self-ignite
Decomposition temperature	: > 350 °C
pH	: Not available
pH solution	: ≥ 10
Viscosity, kinematic	: Not applicable
Solubility	: Water: 6.9 mg/l
Log Kow	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 2.36 g/cm ³ (theoretical density of Mg(OH) ₂)
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No data available

9.2.2. Other safety characteristics

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with : Incompatible materials.

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10.2. Chemical stability

No data available

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

No data available

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 (>360 °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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Magnesium hydroxide (1309-42-8)	
LD50 Oral rat	> 2000 mg/kg OECD Guideline 423
LC50 Inhalation rat	> 2.1 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation)), Guideline: EPA OPPTS 870.1300 (Acute inhalation toxicity)
LC50 Inhalation rat (dust/mist)	> 2.1 mg/l/4h OECD Guideline 403. No mortality seen at this level.
Skin corrosion/irritation	: Not classified

Magnesium hydroxide (1309-42-8)	
pH	9.5 – 10.5 aqueous slurry
Serious eye damage/irritation	: Not classified

Magnesium hydroxide (1309-42-8)	
pH	9.5 – 10.5 aqueous slurry
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Magnesium hydroxide (1309-42-8)	
NOAEL (oral, rat, 90 days)	≥ 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other., Guideline: other., Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents), Guideline: other:
Aspiration hazard	: Not classified

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11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties

: The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

11.2.2. Other information

Potential adverse human health effects and symptoms
No data available

: None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Magnesium hydroxide (1309-42-8)

LC50 fish 1	1293 mg/l <i>Onchorinchus mykiss</i>
LC50 - Fish [2]	511.31 mg/l <i>P. promelas</i>
EC50 crustacea	284.76 mg/l
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species):
EC50 96h - Algae [1]	10040.746 mg/l Source: QSAR
ErC50 algae	> 100 mg/l

12.2. Persistence and degradability

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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 data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties

: The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

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12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.
European List of Waste (LoW) code : For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not regulated
UN-No. (IATA) : Not regulated
UN-No. (ADN) : Not applicable
UN-No. (RID) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated
Proper Shipping Name (ADN) : Not applicable
Proper Shipping Name (RID) : Not applicable

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not regulated

IATA
Transport hazard class(es) (IATA) : Not regulated

ADN
Transport hazard class(es) (ADN) : Not applicable

RID
Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

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14.6. Special precautions for user

Overland transport

No data available

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

No data available

Rail transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Magnesium hydroxide (1309-42-8)		
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

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	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)	Listed
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/ m3
	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	

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes

Section	Changed item	Change	Comments
	Revision date	Modified	
	Regulatory reference	Modified	
11.2.	Adverse health effects caused by endocrine disrupting properties	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	

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

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Data sources

: ESIS (European chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>. ACGIH 2000. 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://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth 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.

Safety Data Sheet (SDS), EU

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.