MiniMag® Magnesium Oxide

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 of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	:	Substance
Trade name	:	MiniMag®
Chemical name	:	Magnesium oxide
CAS No	:	1309-48-4
Formula	:	MgO
Other means of identification	:	calcined brucite magnesia, calcined magnesia, calcined magnesite, magnesite burnt deadburned refractory, periclase, sea-water magnesia, oxomagnesia

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

Use of the substance/mixture	:	For use in fertilizer 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)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

None

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type	:	Mono-constituent
Name	:	MiniMag® Magnesium Oxide
CAS No	:	1309-48-4

Name	Product identifier	%	Classification (GHS-US)
Magnesium oxide	(CAS No) 1309-48-4	98	Not classified
Oxides of silicon, iron, aluminum, and calcium	(CAS No) mixture	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.

Symptoms/injuries after ingestion : Ingestion generally causes purging of the bowels. Swallowing large amounts may cause bowel obstruction.

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 heated to decomposition (>1700 ℃), 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 materials : ACID (Strong) - vigorous reaction, heat generated; Chlorine Trifluoride reacts violently, producing flame; Phosphorous Pentachloride - incandesces brilliantly. NOTE: Exposure to water may cause this product to slowly hydrate, during which heat may be generated (exothermic reaction).

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 oxide (1309-48-4)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA ACGIH	Remark (ACGIH)	(inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m3)	15 mg/m³

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 : Wear protective gloves: dust impervious gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.;Use air-purifying respirator equiped with particulate filtering cartridges.

UP TO 100 MG/M3: Any dust, mist or fume respirator; any air supplied respirator; or, self-contained breathing apparatus.
UP TO 250 MG/M3: Any supplied air respirator operated in a continuous flow mode or any powered air purifying respirator with a dust/mist/fume filter.
UP TO 500 MG/M3: High efficiency particulate filter with full face piece; any powered air supplied respirator with a tight fitting face piece and a high efficiency particulate filter; any self-contained breathing apparatus with a full face piece; any supplied air respirator with a full face piece.
UP TO 7500 MG/M3: Any air supplied respirator with full face piece and operated in a pressure demand or other positive pressure mode.
EMERGENCY or ENTRY INTO UNKNOWN CONCENTRATIONS: Self-contained breathing apparatus with full face piece and operated in pressure demand mode or air supplied respirator with full face piece operated in a pressure demand or other positive pressure mode in combination with auxiliary self-contained breathing apparatus operated in pressure demand or positive pressure mode.
ESCAPE: Any air purifying full face piece respirator with high efficiency particulate filter or any appropriate escape type self-contained apparatus.

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.

Molecular mass : 40.3 g/mol

Color : white.

Odor : Odorless.

Odor threshold : No data available

pH : No data available

pH solution : 10.3 saturated aqueous solution

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

Melting point : 2827 (2797 - 2857) ℃

Freezing point : No data available

Boiling point : 3600 ℃

Flash point : Product does not sustain combustion

Self ignition temperature : No data available

Decomposition temperature : > 1700 ℃

Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Vapor pressure at 50 °C	:	0 hPa
Relative vapor density at 20 °C	:	0
Relative density	:	No data available
Density	:	3.58 g/cm³
Solubility	:	In water, material is partially soluble.
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 data available
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; Chlorine Trifluoride reacts violently, producing flame; Phosphorous Pentachloride - incandesces brilliantly. NOTE: Exposure to water may cause this product to slowly hydrate, during which heat may be generated (exothermic reaction).

10.6. Hazardous decomposition products

If magnesium oxide is heated to the point of volatilization (i.e., >1700 °C), magnesium oxide fumes ma y 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 oxide (1309-48-4)	
LD50 oral rat	3990 mg/kg
ATE (oral)	3990.000 mg/kg body weight

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 oxide (1309-48-4)	
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, 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.
Symptoms/injuries after ingestion	:	Ingestion generally causes purging of the bowels. Swallowing large amounts may cause bowel obstruction.
Likely routes of exposure	:	dermal;Inhalation.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Magnesium oxide (1309-48-4)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Magnesium oxide (1309-48-4)	
Bioaccumulative potential	Not established.

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. Dispose in a safe manner in accordance with local/national regulations.
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 oxide (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	This notification must not be detached from this SDS and any copying of the SDS must include this notice, as required by 40CFR part 372: Magnesium oxide is not subject to Form R reporting requirements.

15.2. International regulations

Magnesium oxide (1309-48-4)		
Jurisdiction	List	Comment
Asia Pacific	Asia - PAC	
Australia	Australian Inventory of Chemical Substances (AICS)	
	National Pollutant Inventory	magnesium oxide fume
	Priority Existing Chemicals	
China	Inventory of Existing Chemical Substances (IECSC)	
Japan	Existing and New Chemical Substances (ENCS)	# 1-465; inorganic compounds
Korea	KECI (Chemical Inventory of Korea)	KE-22728
New Zealand	Inventory of Chemicals (NZIoC)	HSNO approval
Phillippines	Inventory of Chemicals and Chemical Substances (PICCS)	
Europe	EEC International Cosmetics Ingredients Inventory (INCI)	absorbant/ buffering/ opacifying / additives
	EU REACH pre-registered	
	EU Inventory of Existing Commercial Chemical Substances (EINECS)	215-171-9
	German Water Hazard Class Substance List	5208 Classification: VwVwS
	Switzerland Giftliste 1 (List of Toxic Substances)	G-2368
Canada	Canadian Domesticated Substances List (DSL)	
	WHMIS Ingredient List	
United States	ACGIH Thrshold Limit Values (TLV)	
	EPA Pesticide Inert Ingredients	
	FDA Priority-based Assessment of Food Additives (PAFA)	
	FDA Regulations	Use as colorant.
	High Production Volume Chemicals (HPV)	
	National Toxicology Program Technical Reports List	
	NIOSH Hazard, Toxicology, and Use Information	
	NIOSH Health Hazards	
	NIOSH Recommended Exposure Limits	10 mg/m^3
	OSHA Permissible Exposure Limits	8 hour TWA: total particulates 15 mg/ m^3
	Toxic Substances Control Act (TSCA) Inventory	
	Toxic Inventory Update Rule	
	TSCA Section 8A-Preliminary Assessment Information Rule (PAIR)	
Other	Health Hazards	RTECS: OM3850000
	High Production Volume Chemicals: ICCA	
	High Production Volume Chemicals: OECD	

15.3. US State regulations

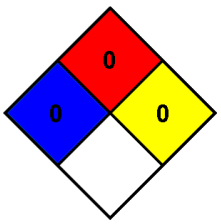
Magnesium Oxide (1309-48-4)	
State or local regulations	U.S. – Illinois Right-to-Know Toxic Substances List U.S. – Massachusetts Right-to-Know U.S. – Minnesota Right-to-Know U.S. - New Jersey Right-to-Know U.S. – Pennsylvania Right-to-Know U.S. – Rhode Island Right-to-Know

SECTION 16: Other information

Indication of changes : Original Document.

Data sources	:	ACGIH 2000. Chemical Inspection & Regulation Service; accessed at: http://www.cirs-reach.com/Inventory/Global_Chemical_Inventories.html. Ind. Exposure & Control Techn. for OSHA Regulated Substances - MgO (fume), March, 1989, pp. 1181-1184. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth 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. RTECS, June 1998. Sax - 8th Ed. TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html. 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)

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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.