



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

Trade name or designation of the mixture Titanium Oxide Magnesium Oxide Product
Synonyms None.
Document number 374
Issue date 06-September-2017
Version number 01

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

Identified uses Not available.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Materials Group
Address 42 Mt. Ebo Road South
Brewster, NY 10509
United States
Division
Telephone Supplier Phone 1+845.279.0900
e-mail Not available.
Contact person Not available.

1.4. Emergency telephone number Chemtrec 1+703.527.3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Hazard summary Not available.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Magnesium oxide, Titanium oxide (TiO)
Hazard pictograms None.
Signal word None.
Hazard statements The Material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

Precautionary statements

Prevention Not available.
Response Not available.
Storage Not available.
Disposal Not available.

Supplemental label information None.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Titanium oxide (TiO ₂)	50 - 99	12137-20-1 235-236-5	-	-	
Classification:	-				
Magnesium oxide	1 - 49	1309-48-4 215-171-9	-	-	
Classification:	-				

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

4.2. Most important symptoms and effects, both acute and delayed Not available.

4.3. Indication of any immediate medical attention and special treatment needed Not available.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Not available.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

Special firefighting procedures Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

For emergency responders Not available.

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Dike far ahead of spill for later disposal. For waste disposal, see section 13 of the SDS.

6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	MAK	5 mg/m ³	Respirable fraction.
		5 mg/m ³	Respirable fume.
	STEL	10 mg/m ³	Inhalable fraction.
		20 mg/m ³	Respirable fume.
		20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Fume.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	MAC	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Fume.

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Magnesium oxide (CAS 1309-48-4)	Ceiling	10 mg/m ³
	TWA	5 mg/m ³

Denmark. Exposure Limit Values

Components	Type	Value
Magnesium oxide (CAS 1309-48-4)	TLV	6 mg/m ³

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	5 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.
		1 mg/m ³	Dust.

Finland. Workplace Exposure Limits

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Dust.

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	VME	10 mg/m ³	Fume.

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	4 mg/m ³	Inhalable fraction.
		1,5 mg/m ³	Respirable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	AGW	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	STEL	24 mg/m ³	Respirable.
	TWA	6 mg/m ³	Respirable.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	
Magnesium oxide (CAS 1309-48-4)	TWA	6 mg/m ³	

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Fume.
		5 mg/m ³	Fume.
		4 mg/m ³	Respirable dust.
		10 mg/m ³	Total inhalable dust.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Inhalable fraction.

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	2 mg/m ³	Dust.
		2 mg/m ³	

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	
Magnesium oxide (CAS 1309-48-4)	TWA	4 mg/m ³	

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	
Magnesium oxide (CAS 1309-48-4)	TLV	10 mg/m ³	

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Inhalable fraction.
Titanium oxide (TiO) (CAS 12137-20-1)	STEL	30 mg/m ³	
	TWA	10 mg/m ³	

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	STEL	15 mg/m3	Fume.
	TWA	5 mg/m3	Fume.

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	4 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Dust and fume.

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	5 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	3 mg/m3	Respirable dust.
		3 mg/m3	Fume and respirable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	4 mg/m3	Respirable dust and/or fume.
		10 mg/m3	Inhalable dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Not available.

Individual protection measures, such as personal protective equipment

General information Not available.

Eye/face protection Not available.

Skin protection

- **Hand protection** Not available.

- **Other** Not available.

Respiratory protection Not available.

Thermal hazards Not available.

Hygiene measures Not available.

Environmental exposure controls Not available.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance

Physical state	Solid.
Form	Solid.
Colour	Not available.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	2800 °C (5072 °F) estimated
Initial boiling point and boiling range	3600 °C (6512 °F) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	0,00001 hPa estimated
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information

Density	3,58 g/cm ³ estimated
Specific gravity	3,58 estimated

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Not available.
10.3. Possibility of hazardous reactions	Not available.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Phosphorus. Chlorine.
10.6. Hazardous decomposition products	Not available.

SECTION 11: Toxicological information

General information Not available.

Information on likely routes of exposure

Inhalation	Not available.
Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.

Symptoms Not available.

11.1. Information on toxicological effects

Acute toxicity	No data available.
Skin corrosion/irritation	Not available.

Serious eye damage/eye irritation	Not available.
Respiratory sensitisation	Not available.
Skin sensitisation	Not available.
Germ cell mutagenicity	Not available.

Carcinogenicity

Hungary. 26/2000 Eüm Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	No toxicity data noted for the ingredient(s).
12.2. Persistence and degradability	Not available.
12.3. Bioaccumulative potential	Not available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

Additional information is given in the Safety Data Sheet.

National regulations

Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Disclaimer

Materion Advanced Materials Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.