



PRODUCT INFORMATION 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 Barium Oxide Product

Synonyms None.

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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 product information 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 Directive 67/548/EEC or 1999/45/EC as amended

Classification Xn;R20/22

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

Hazard summary

Physical hazards Not classified for physical hazards.

Health hazards Harmful by inhalation and if swallowed.

Environmental hazards Not classified for hazards to the environment.

Specific hazards Not available.

Main symptoms Not available.

2.2. Label elements

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

Contains: Barium Oxide

Hazard pictograms None.

Signal word None.

Hazard statements The mixture does not meet the criteria for classification.

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
Barium Oxide	99,9 - 100	1304-28-5 215-127-9	-	056-002-00-7	#
Classification:	DSD: Xn;R20/22				A,1
	CLP: Acute Tox. 4;H302, Acute Tox. 4;H332				1,A

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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Not available.

For emergency responders Not available.

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities 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
Barium Oxide (CAS 1304-28-5)	MAK	0,5 mg/m ³	Inhalable fraction.
	STEL	2 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	MAC	0,5 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	Ceiling	2,5 mg/m ³
	TWA	0,5 mg/m ³

Denmark. Exposure Limit Values

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TLV	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Finland. Workplace Exposure Limits

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	VME	0,5 mg/m ³

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
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³	Inhalable fraction.

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

Components	Type	Value	Form
Barium Oxide (CAS 1304-28-5)	AGW	0,5 mg/m ³	Inhalable fraction.

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Ireland. Occupational Exposure Limits

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Italy. Occupational Exposure Limits

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Netherlands. OELs (binding)

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TLV	0,5 mg/m ³

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

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

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Spain. Occupational Exposure Limits

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Barium Oxide (CAS 1304-28-5)	STEL	4 mg/m ³	Inhalable dust.
	TWA	0,5 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Barium Oxide (CAS 1304-28-5)	TWA	0,5 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).**Recommended monitoring procedures** Not available.**Derived no-effect level (DNEL)** 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****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 Not available.

Colour Not available.

Odour Not applicable.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not applicable.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

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.

Solubility (other) 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.

Oxidizing properties Not available.

9.2. Other information No relevant additional information available.

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 Not available.

10.5. Incompatible materials Not available.

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	Not available.
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	Not available.
Contaminated packaging	Not available.
EU waste code	Not available.

SECTION 14: Transport information

ADR

14.1. UN number	UN1884
14.2. UN proper shipping name	BARIUM OXIDE
14.3. Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Label(s)	6.1
Hazard No. (ADR)	60
Tunnel restriction code	E
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

RID

14.1. UN number	UN1884
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14.2. UN proper shipping name BARIUM OXIDE

14.3. Transport hazard class(es)

Class 6.1(PGIII)

Subsidiary risk -

Label(s) 6.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Not available.

ADN

14.1. UN number UN1884

14.2. UN proper shipping name Barium Oxide

14.3. Transport hazard class(es)

Class 6.1(PGIII)

Subsidiary risk -

Label(s) 6.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Not available.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

ADN; ADR; RID



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, as amended

Not listed.

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

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

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.

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

Not listed.

Restrictions on use

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

Not regulated.

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.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Not listed.

Other EU regulations

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

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

Barium Oxide (CAS 1304-28-5)

Directive 94/33/EC on the protection of young people at work, as amended

Not listed.

National regulations Not available.

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 Not available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15
R20/22 Harmful by inhalation and if swallowed.
H302 Harmful if swallowed.
H332 Harmful if inhaled.

Revision information None.

Training information Not available.