



SAFETY DATA SHEET

MATERION

Version #: 04

Issue date: 12-March-2019

Revision date: 11-April-2024

Supersedes date: 10-April-2024

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

Registration number	-
Synonyms	None.
Materion Code	1CN
1.1. Product identifier	
Name of the substance	Barium Nitride (Ba ₃ N ₂)
Identification number	056-002-00-7 (Index number)
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 Electronic Materials
Address	6070 Parkland Blvd Mayfield Heights, OH 44124 United States
Division	
Telephone	1.216.383.4019
e-mail	Materion-PS@materion.com
Contact person	Product Stewardship Director
1.4. Emergency telephone number	
Document number	1CN

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

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

Physical hazards

Substances and mixtures which, in contact with water, emit flammable gases Category 1

Health hazards

Acute toxicity, oral Category 4 H302 - Harmful if swallowed.
Acute toxicity, inhalation Category 4

2.2. Label elements

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

Contains: barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthalenyl aryl sulphonic acid, and of salts specified elsewhere in this Annex

Hazard pictograms



Signal word Warning

Hazard statements

H302 Harmful if swallowed.
H332 Harmful if inhaled.

Precautionary statements

Prevention

P223 Do not allow contact with water.
P271 Use only outdoors or in a well-ventilated area.

Response

P370 + P378 In case of fire: Use appropriate media to extinguish.

Storage

P402 + P404 Store in a dry place. Store in a closed container.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards

Water reactive substance. This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. The substance is not included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthalenyl aryl sulphonic acid, and of salts specified elsewhere in this Annex	100	12047-79-9 234-977-1	-	056-002-00-7	#

Classification: Acute Tox. 4;H302;(ATE: 500 mg/kg bw), Acute Tox. 4;H332

List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

ATE: Acute toxicity estimate.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

#: This substance has been assigned Union workplace exposure limit(s).

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. *Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments

The full text for all H-statements is displayed in section 16. The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

4.1. Description of first aid measures

Inhalation

If dust from the material is inhaled, remove the affected person immediately to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTRE or doctor/physician if you feel unwell.

Skin contact

Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact

Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Dusts may irritate the respiratory tract, skin and eyes.

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

Provide general supportive measures and treat symptomatically. Treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards	In contact with water releases flammable gases which may ignite spontaneously. Decomposition in a fire produces toxic fumes.
5.1. Extinguishing media	
Suitable extinguishing media	Dry chemical, carbon dioxide.
Unsuitable extinguishing media	Water. Do not use a solid water stream as it may scatter and spread fire.
5.2. Special hazards arising from the substance or mixture	Water Reactive. Nitrogen Oxides (NOx).
5.3. Advice for firefighters	
Special protective equipment for firefighters	Wear suitable protective equipment.
Special firefighting procedures	In the event of fire, cool tanks with water spray. Do not get water inside container.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Avoid inhalation of dust. Wear appropriate personal protective equipment.
For emergency responders	Keep unnecessary personnel away. Ensure adequate ventilation. Avoid inhalation of dust. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.
6.2. Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material for containment and cleaning up	<p>Do not get water on spilled substance or inside containers. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent entry into waterways, sewer, basements or confined areas.</p> <p>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.</p> <p>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use.</p>
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Keep away from any possible contact with water, because of violent reaction and possible flash fire. Handle under inert gas. Minimise dust generation and accumulation. Do not breathe dust from this material. Avoid contact with skin and eyes. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid contact with moist air. Handle under inert gas atmosphere.
7.2. Conditions for safe storage, including any incompatibilities	<p>Never allow product to get in contact with water during storage. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Store in a dry place. Guard against dust accumulation of this material. Store away from incompatible materials (see Section 10 of the SDS).</p> <p>Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended</p> <p>ANNEX 1, PART 1 Categories of dangerous substances Hazard categories in accordance with Regulation (EC) No 1272/2008 - O2 Substances and mixtures which in contact with water emit flammable gases, (Lower-tier requirements = 100 tonnes; Upper-tier requirements = 500 tonnes) Category 1 Material should be stored under an inert atmosphere.</p>
7.3. Specific end use(s)	Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

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

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	MAK	0,5 mg/m3	Inhalable fraction.
	STEL	2 mg/m3	Inhalable fraction.

Belgium. OEL. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1 - Chemical agents, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Bulgaria. OELs. Ordinance No 13 on protection of workers against risks of exposure to chemical agents at work, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Croatia. OELs (GVI). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and Biological Limit Values, Annex I (NN 91/2018), as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	MAC	0,5 mg/m3

Cyprus. OELs. Occupational Exposure Limit Values of Chemicals at Work (Safety and Health at Work (Chem. Agents) Reg., Ann. 1, R.A.A. 268/2001, as amended)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Czech Republic. Occupational exposure limit values of chemicals at work (Decree on protection of health at work, 361/2007, Annex 2, Part A & Annex 3, Part A, as amended)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	Ceiling	2,5 mg/m3
	TWA	0,5 mg/m3

Denmark. Work Environment Authority. Exposure Limits for Substances & Materials, Annex 2

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TLV	0,5 mg/m3

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

France. OELs. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	VME	0,5 mg/m3

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

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	VME	0,5 mg/m3

Regulatory status: Regulatory indicative (VRI)

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

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3	Inhalable fraction.

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

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	AGW	0,5 mg/m3	Inhalable fraction.

Greece. OELs, Presidential Decree No. 307/1986, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Iceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Italy. OELs (Legislative Decree n.81, 9 April 2008), as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80, Annex 1), as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Order No. V-824/A1-389), as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Malta. OELs. Protection of Health and Safety of Workers from Risks related to Chemical Agents at Work (L.N 227/2003 Schedules I and V), as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Poland. Maximum permissible concentrations and intensities of harmful factors in the work environment (Dz.U.Poz. 1286/2018, Annex 1)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Portugal. Decree-Law No. 24/2012, Occupational Exposure Limit Values, Annex II, as amended

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796-2014)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Romania. OELs. Limit Values of Chemical Agents at Workplace (Regulation 1.218/2006, M.O 845, Annex 1, 3&4, as amended)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Slovakia. OELs. Maximum permissible exposure limits for chemical factors in workplace air (Regulation No 355/2006, Annex 1, Table 1, as amended)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Ann. I 100/2001), as amended

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	KTV	0,5 mg/m3	Inhalable fraction.

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Annex I), as amended

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3	Inhalable fraction.

Spain. OELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 1-Valores Límites Ambientales (VLAs)

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

Sweden. OELs (Annex 1). Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2018:1), as amended

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte

Material	Type	Value	Form
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	STEL	4 mg/m3	Inhalable fraction.
	TWA	0,5 mg/m3	Inhalable fraction.

UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Material	Type	Value
barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthaleny l aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	TWA	0,5 mg/m3

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.

Exposure guidelines**Latvia OELs: Skin designation**

barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthalenyl aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9) Can be absorbed through the skin.

8.2. Exposure controls

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear eye/face protection. Wear safety glasses with side shields (or goggles).

Skin protection

- Hand protection Wear appropriate chemical resistant gloves.

- Other Wear suitable protective clothing. Wear protective gloves. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory protection Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Dust & vapor respirator.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Do not breathe dust. When using, do not eat, drink or smoke. Avoid contact with eyes. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.
--	--

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Form	Powder. Powder.
Colour	Not available.
Odour	Not available.
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	Not available.
Flammability	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Flash point	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
pH	Not available.
Kinematic viscosity	Not available.
Solubility	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water) (log value)	Not available.
Vapour pressure	Not available.
Density and/or relative density	Not available.
Vapour density	Not available.
Particle characteristics	Not available.

9.2. Other information

9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
--	---

9.2.2. Other safety characteristics

Molecular formula	Ba3N2
Molecular weight	440 g/mol

SECTION 10: Stability and reactivity

10.1. Reactivity	In contact with water releases flammable gases. Contact with water rapidly liberates toxic gas.. Moisture.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Exposure to moisture. Contact with incompatible materials.
10.5. Incompatible materials	Water.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
----------------------------	--

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
-------------------	---------------------

Skin contact	Dust or powder may irritate the skin. Due to lack of data the classification is not possible.
Eye contact	Dust may irritate the eyes.
Ingestion	Harmful if swallowed. Harmful if swallowed.
Symptoms	Dusts may irritate the respiratory tract, skin and eyes.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Harmful if inhaled. Harmful if swallowed. Harmful if swallowed.
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Dust in the eyes will cause irritation.
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.

11.2. Information on other hazards

Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to human health, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.
12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log K_{ow})	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.
12.6. Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to the environment, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
12.7. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.
12.8. Additional information	

Estonia Dangerous substances in soil Data

barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthalenyl aryl sulphonic acid, and of salts specified elsewhere in this Annex (CAS 12047-79-9)	Barium (Ba) 2000 mg/kg
	Barium (Ba) 500 mg/kg
	Barium (Ba) 750 mg/kg

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. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN2813
14.2. UN proper shipping name	Water-reactive solid, n.o.s.
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
Hazard No. (ADR)	Not assigned.
Tunnel restriction code	Not assigned.
14.4. Packing group	I
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN2813
14.2. UN proper shipping name	WATER-REACTIVE SOLID, N.O.S.
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
14.4. Packing group	I
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN2813
14.2. UN proper shipping name	Water-reactive solid, n.o.s.
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
14.4. Packing group	I
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN2813
14.2. UN proper shipping name	Water-reactive solid, n.o.s. (Barium nitride)
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-

14.4. Packing group	I
14.5. Environmental hazards	No.
ERG Code	4W
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Forbidden
Cargo aircraft only	Allowed with restrictions.

IMDG

14.1. UN number	UN2813
14.2. UN proper shipping name	WATER-REACTIVE SOLID, N.O.S. (Barium nitride)
14.3. Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
14.4. Packing group	I
14.5. Environmental hazards	
Marine pollutant	No.
EmS	F-G, S-N
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN; ADR; IATA; IMDG; 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 and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), 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 - Conditions of restriction given for the associated entry number should be considered

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.

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended

Not listed.

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended

Not listed.

Other EU regulations	Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended ANNEX 1, PART 1 Categories of dangerous substances Hazard categories in accordance with Regulation (EC) No 1272/2008 - O2 Substances and mixtures which in contact with water emit flammable gases, Category 1
Other regulations	The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.
National regulations	Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.
France regulations	
France INRS Table of Occupational Diseases	
	Not regulated.
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
IATA: International Air Transport Association.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
IMDG: International Maritime Dangerous Goods.
MAC: Maximum Allowed Concentration.
MARPOL: International Convention for the Prevention of Pollution from Ships.
PBT: Persistent, bioaccumulative and toxic.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TLV: Threshold Limit Value.
TWA: Time Weighted Average.
VLE: Exposure Limit Value.
VME: Exposure Average Value.
vPvB: Very persistent and very bioaccumulative.

References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Information on evaluation method leading to the classification of mixture

Not applicable.

Full text of any statements, which are not written out in full under sections 2 to 15

H302 Harmful if swallowed.
H332 Harmful if inhaled.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Training information

Follow training instructions when handling this material.

Further information

Transportation Emergency
Call Chemtrec at:
US: 800.424.9300
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059
South Korea Toll-free Number – 080-880-0468

Disclaimer

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.