



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Barium Nitride (Ba<sub>3</sub>N<sub>2</sub>)

### Other means of identification

**SDS number** 1CN

**Materion Code** 1CN

**CAS number** 12047-79-9

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

**Company name** Materion Electronic Materials

**Address** 6070 Parkland Blvd  
Mayfield Heights, Ohio 44124  
United States

**Telephone** 1.216.383.4019

**E-mail** Materion-PS@materion.com

**Contact person** Product Stewardship Director

**Emergency phone number** See Section 16

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Acute toxicity, oral Category 4

Acute toxicity, inhalation Category 4

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Warning

**Hazard statement** Harmful if swallowed. Harmful if inhaled.

### Precautionary statement

**Prevention** Handle under inert gas. Protect from moisture. Use only outdoors or in a well-ventilated area.

**Response** Call a poison center/doctor if you feel unwell.

**Storage** Store in a dry place. Store in a closed container.

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

**Hazard(s) not otherwise classified (HNOC)** Water reactive substance.

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

## 3. Composition/information on ingredients

### Substances

Chemical name	Common name and synonyms	CAS number	%
Barium nitride		12047-79-9	100

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

<b>Inhalation</b>	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 CENTER or doctor/physician if you feel unwell.
<b>Skin contact</b>	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.
<b>Eye contact</b>	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
<b>Most important symptoms/effects, acute and delayed</b>	Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	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.
<b>General information</b>	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.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Dry chemical, carbon dioxide.
<b>Unsuitable extinguishing media</b>	Water. Do not use a solid water stream as it may scatter and spread fire.
<b>Specific hazards arising from the chemical</b>	Water Reactive. Nitrogen Oxides (NOx).
<b>Special protective equipment and precautions for firefighters</b>	Wear suitable protective equipment.
<b>Fire fighting equipment/instructions</b>	In the event of fire, cool tanks with water spray. Do not get water inside container.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted. Decomposition in a fire produces toxic fumes.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	<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. For waste disposal, see section 13 of the SDS.</p>
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Handle under inert gas. Minimize 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.

### Conditions for safe storage, including any incompatibilities

Never allow product to get in contact with water during storage. 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). Material should be stored under an inert atmosphere.

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

#### US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
Barium nitride (CAS 12047-79-9)	PEL	0.5 mg/m3

#### US. ACGIH Threshold Limit Values (TLV)

Material	Type	Value
Barium nitride (CAS 12047-79-9)	TWA	0.5 mg/m3

#### NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Material	Type	Value
Barium nitride (CAS 12047-79-9)	IDLH	50 mg/m3

#### US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Material	Type	Value
Barium nitride (CAS 12047-79-9)	TWA	0.5 mg/m3

#### US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Material	Type	Value
Barium nitride (CAS 12047-79-9)	PEL	0.5 mg/m3

### Biological limit values

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

### 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 Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.

### Individual protection measures, such as 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.

<b>Respiratory protection</b>	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.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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.

## 9. Physical and chemical properties

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder Powder.
<b>Color</b>	Not available.
<b>Odor</b>	Not available.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Molecular formula</b>	Ba <sub>3</sub> N <sub>2</sub>
<b>Molecular weight</b>	440 g/mol
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	In contact with water releases toxic gas
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.

**Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

### 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 related to the physical, chemical and toxicological characteristics** Dusts may irritate the respiratory tract, skin and eyes.

### Information on toxicological effects

**Acute toxicity** Harmful if inhaled. Harmful if swallowed. Harmful if swallowed.

Product	Species	Test Results
Barium nitride (CAS 12047-79-9)		
<u>Acute</u>		
Oral		
LD50	Rat	> 1.98 g/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Due to lack of data the classification is not possible.

**Serious eye damage/eye irritation** Dust in the eyes will cause irritation.

### Respiratory or skin sensitization

**Respiratory sensitization** Due to lack of data the classification is not possible.

**Skin sensitization** Due to lack of data the classification is not possible.

**Germ cell mutagenicity** Due to lack of data the classification is not possible.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

#### US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

**Reproductive toxicity** Due to lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Due to lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure** Due to lack of data the classification is not possible.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**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.

### 13. Disposal considerations

**Disposal instructions** This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. 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.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** D005: Waste Barium  
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** 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.

### 14. Transport information

#### DOT

<b>UN number</b>	UN2813
<b>UN proper shipping name</b>	Water-reactive solid, n.o.s. (Barium nitride)
<b>Transport hazard class(es)</b>	
<b>Class</b>	4.3
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	4.3
<b>Packing group</b>	I
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	IB4, N40, T9, TP7, TP33
<b>Packaging exceptions</b>	None
<b>Packaging non bulk</b>	211
<b>Packaging bulk</b>	242

#### IATA

<b>UN number</b>	UN2813
<b>UN proper shipping name</b>	Water-reactive solid, n.o.s. (Barium nitride)
<b>Transport hazard class(es)</b>	
<b>Class</b>	4.3
<b>Subsidiary risk</b>	-
<b>Packing group</b>	I
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	4W
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Forbidden
<b>Cargo aircraft only</b>	Allowed with restrictions.

#### IMDG

<b>UN number</b>	UN2813
<b>UN proper shipping name</b>	WATER-REACTIVE SOLID, N.O.S. (Barium nitride)

**Transport hazard class(es)**

**Class** 4.3  
**Subsidiary risk** -  
**Packing group** I  
**Environmental hazards**  
**Marine pollutant** No.  
**EmS** F-G, S-N  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**DOT**



**IATA; IMDG**



**15. Regulatory information**

**US federal regulations**

All components are on the U.S. EPA TSCA Inventory List.  
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Barium nitride (CAS 12047-79-9) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Acute toxicity (any route of exposure)

**SARA 313 (TRI reporting)**

<b>Chemical name</b>	<b>CAS number</b>	<b>% by wt.</b>
Barium nitride	12047-79-9	100

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Listed.

**US state regulations**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**16. Other information, including date of preparation or last revision**

**Issue date** 03-12-2019

**Revision date** 04-11-2024

**Version #** 04

**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

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

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