



# SAFETY DATA SHEET

**MATERION**

Version #: 04

Issue date: 18-January-2016

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Supersedes date: 11-March-2019

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

**Registration number**

-

**Synonyms**

Diboron trisulphide

**Materion Code**

1RS

**1.1. Product identifier**

**Name of the substance**

Boron sulfide (B2S3)

**Identification number**

234-504-9 (EC number)

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

**Identified uses**

The chemical(s) listed herein is not found on the Toxic Substance Control Act chemical substance inventory. This chemical may not be used for commercial purposes. This chemical may be used for research and development purposes only as defined at 40 CFR 710,2(y).

**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**

1RS

## 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**

**Health hazards**

Acute toxicity, inhalation

Category 1

H330 - Fatal if inhaled.

**2.2. Label elements**

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

**Contains:**

Boron sulfide (B2S3)

**Hazard pictograms**



**Signal word**

Danger

**Hazard statements**

H330

Fatal if inhaled.

**Precautionary statements**

**Prevention**

P260

Do not breathe dust.

P271

Use only outdoors or in a well-ventilated area.

P284

Wear respiratory protection.

## Response

P304 + P340  
P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Immediately call a POISON CENTRE/doctor.

## Storage

P403 + P233  
P405

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

## Disposal

P501

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

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
Boron sulfide (B2S3)	100	12007-33-9 234-504-9	-	-	
<b>Classification:</b> Acute Tox. 1;H330;(ATE: 0,002 mg/l)					

#### List of abbreviations and symbols that may be used above

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 Union workplace exposure limit(s).

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## SECTION 4: First aid measures

#### General information

Show this safety data sheet to the doctor in attendance.

#### 4.1. Description of first aid measures

##### Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 physician or poison control centre immediately.

##### Skin contact

Rinse with water.

##### Eye contact

Do not rub eyes.

##### Ingestion

Rinse mouth. Get medical attention if symptoms occur.

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

Direct contact with eyes may cause temporary irritation.

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

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

#### General fire hazards

No unusual fire or explosion hazards noted.

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

##### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

#### 5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

### 5.3. Advice for firefighters

#### Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### Special firefighting procedures

Move containers from fire area if you can do so without risk.

#### 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

Do not breathe dust.

#### For emergency responders

Ensure adequate ventilation. Do not breathe dust. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see 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

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use.

### 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

Minimise dust generation and accumulation. Do not breathe dust. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment.

### 7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

### 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

No exposure limits noted for ingredient(s).

#### 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

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.

#### 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

If contact is likely, safety glasses with side shields are recommended.

##### Skin protection

###### - Hand protection

Wear appropriate chemical resistant gloves.

###### - Other

Wear suitable protective clothing.

##### Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA).

##### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

<b>Hygiene measures</b>	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.
<b>Environmental exposure controls</b>	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

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Colour</b>	Not available.
<b>Odour</b>	Not available.
<b>Melting point/freezing point</b>	563 °C (1045,4 °F)
<b>Boiling point or initial boiling point and boiling range</b>	decomposes at high Temperature
<b>Flammability</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>Flash point</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>pH</b>	Not available.
<b>Kinematic viscosity</b>	Not available.
<b>Solubility</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Density and/or relative density</b>	
<b>Density</b>	1,55 g/cm3
<b>Vapour density</b>	Not available.
<b>Particle characteristics</b>	Not available.

### 9.2. Other information

<b>9.2.1. Information with regard to physical hazard classes</b>	No relevant additional information available.
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### 9.2.2. Other safety characteristics

<b>Molecular formula</b>	B2S3
<b>Specific gravity</b>	1,55 estimated

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material reacts with water.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Water, moisture.
<b>10.6. Hazardous decomposition products</b>	No hazardous decomposition products are known.

## SECTION 11: Toxicological information

<b>General information</b>	Occupational exposure to the substance or mixture may cause adverse effects.
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## Information on likely routes of exposure

<b>Inhalation</b>	Fatal if inhaled.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** Exposure may cause temporary irritation, redness, or discomfort.

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

<b>Acute toxicity</b>	Fatal if inhaled.
<b>Skin corrosion/irritation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Serious eye damage/eye irritation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Respiratory sensitisation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Skin sensitisation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Germ cell mutagenicity</b>	Due to partial or complete lack of data the classification is not possible.
<b>Carcinogenicity</b>	Due to partial or complete lack of data the classification is not possible.
<b>Reproductive toxicity</b>	Due to partial or complete lack of data the classification is not possible.
<b>Specific target organ toxicity - single exposure</b>	Due to partial or complete lack of data the classification is not possible.
<b>Specific target organ toxicity - repeated exposure</b>	Due to partial or complete lack of data the classification is not possible.
<b>Aspiration hazard</b>	Due to partial or complete lack of data the classification is not possible.
<b>Mixture versus substance information</b>	No information available.

### 11.2. Information on other hazards

<b>Endocrine disrupting properties</b>	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.
<b>Other information</b>	Not available.

## SECTION 12: Ecological information

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

### Estonia Dangerous substances in soil Data

Boron sulfide (B2S3) (CAS 12007-33-9)	Boron (B) 100 mg/kg Boron (B) 30 mg/kg Boron (B) 500 mg/kg
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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	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).
<b>Contaminated packaging</b>	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.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Discourage sewage disposal. Waste should not be disposed of by release to sewers. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>Hazard No. (ADR)</b>	Not assigned.
<b>Tunnel restriction code</b>	Not assigned.
<b>14.4. Packing group</b>	-
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not assigned.

### RID

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	-
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not assigned.

### ADN

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	-
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not assigned.

### IATA

<b>14.1. UN number</b>	UN3134
<b>14.2. UN proper shipping name</b>	Water-reactive solid, toxic, n.o.s.(Boron sulfide)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	4.3
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

## IMDG

<b>14.1. UN number</b>	UN3134
<b>14.2. UN proper shipping name</b>	Water-reactive solid, toxic, n.o.s.(Boron sulfide)
<b>14.3. Transport hazard class(es)</b>	
Class	4.3
Subsidiary risk	-
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	
Marine pollutant	No.
<b>EmS</b>	Not assigned.
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

## IATA; IMDG



## 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 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

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Use of this product by young persons under the age of 18 is not allowed in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended. 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

Not available.

### 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

H330 Fatal 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

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