

SUPPLIER



MATERIAL SAFETY DATA SHEET

GENERATED 03/15/2011, **REVISION** 05/03/2001, **DATE CREATED** 10/26/1990

SECTION I - PRODUCT IDENTIFICATION

Boron, pieces

PRODUCT NAME: Boron, pieces

PRODUCT CODE: B-MSDS0071

REFERENCE #: 7440-42-8

MANUFACTURER INFORMATION

COMPANY NAME: Materion Advanced Chemicals Inc.

1316 W. St. Paul Avenue

Milwaukee, WI 53233

EMERGENCY CONTACT: CHEMTREC (800)424-9300

ALTERNATE EMERGENCY CONTACT: Materion Advanced Chemicals Inc. (414)289-9800

CHEMICAL FAMILY: Metal

CAS NUMBER: 7440-42-8

FORMULA: B

MOLECULAR WEIGHT: 10.81

SYNONYMS

Boron metal

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Boron, pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits
Boron	7440-42-8	0.0 -100.0 %	NE	NE	NE

See SECTION IX-
ADDITIONAL
COMMENTS FOR
COSHH Regulations

NA

0.0 -100.0 %

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boron, pieces

PHYSICAL STATES: ☐ Gas ☐ Liquid ☒ Solid

MELTING POINT: 2300.00 C

BOILING POINT: 2550.00 C

SPECIFIC GRAVITY (WATER = 1): 2.34 gm/cc

VAPOR PRESSURE (VS. AIR OR MM HG): NA

VAPOR DENSITY (VS. AIR = 1): NE

EVAPORATION RATE (VS BUTYL ACETATE=1): NA

SOLUBILITY IN WATER: insoluble

SOLUBILITY NOTES

PERCENT VOLATILE: N.A.

APPEARANCE AND ODOR

Black, hard pieces, odorless

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Boron, pieces

FLASH PT: N.A. Method Used: Unknown

EXPLOSIVE LIMITS: LEL: NA UEL: NA

EXTINGUISHING MEDIA

USE: Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

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SPECIAL FIRE FIGHTING PROCEDURES

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

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UNUSUAL FIRE AND EXPLOSION HAZARDS

Boron metal may emit toxic fumes if involved in a fire.
May ignite on contact with gaseous chlorine or fluorine at room temperature.
May react exothermically with metals above 900C.
May react explosively when ground with lead fluoride or silver fluoride.
May explode with hydrogen iodide.

HAZARDOUS COMBUSTION PRODUCTS

SECTION V - REACTIVITY DATA

Boron, pieces

STABILITY:

Unstable []

Stable [X]

CONDITIONS TO AVOID - INSTABILITY

None

INCOMPATIBILITY - MATERIALS TO AVOID

NH₃; Br₂; BrF₃; Cs₂C₂; Cl₂; CuO; HIO₃; PbO₂; HNO₃; NO; NOF; N₂O; KClO₃; KNO₃; Rb₂C₂; S;
BrF₅; IF₅; FNO₂; OF₂; KNO₂; Na₂O₂; PbO.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Boron oxide

HAZARDOUS POLYMERIZATION:

Will occur []
[X]

Will not occur

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA

Boron, pieces

HEALTH HAZARDS (ACUTE AND CHRONIC)

Boron compounds are very toxic and therefore considered an industrial poison. Boron is one of a group of elements, such as Pb, Mn, As, which effects the central nervous system. Boron poisoning causes depression of the circulation, persistant vomiting and diarrhea, followed by profound shock and coma. The temperature becomes subnormal and a scarletina form rash may cover the entire body. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

INHALATION:

Acute: DANGER-POISON. May cause irritation to the mucous membrane and boron poisoning.
Chronic: No chronic health effects recorded.

INGESTION:

Acute: DANGER-POISON. May cause irritation to the gastrointestinal tract and boron poisoning.
Chronic: May affect the central nervous system.

SKIN:

Acute: May cause mild irritation.
Chronic: May cause dermatitis.

EYE:

Acute: May cause mild irritation.
Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the central nervous system.

CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

See "Other Toxicity Data"

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: May cause coughing, sneezing and difficulty breathing. Boron poisoning may cause: depression of the circulation, persistant vomiting, diarrhea, shock and coma.

INGESTION: Boron poisoning may cause: depression of the circulation, persistant vomiting, diarrhea, shock and coma.

SKIN: May cause redness, itching and burning sensation.

EYE: May cause redness, itching, burning sensation and watering.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Pre-existing respiratory disorders

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.

INGESTION: If conscious, give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never give anything by mouth or induce vomiting to an unconscious person.

SKIN: Remove contaminated clothing from affected area; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

----- BORON METAL OTHER TOXICITY DATA -----

orl-mus LD50: 2000 mg/kg orl-mam LD50: 300 mg/kg

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Boron, pieces

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD

Dispose of in accordance with local, state and federal regulations.

HAZARD LABEL INFORMATION:

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

PRECAUTIONS TO BE TAKEN IN HANDLING

None

PRECAUTIONS TO BE TAKEN IN STORING

OTHER PRECAUTIONS

None

SECTION VIII - CONTROL MEASURES

Boron, pieces

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

NIOSH approved respirator Rubber gloves Safety glasses Clothes to prevent skin contact

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH - approved dust respirator

EYE PROTECTION

Safety glasses

PROTECTIVE GLOVES

Rubber gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

Local Exhaust: To maintain concentration at low exposure levels Special: None

Mechanical (Gen): Recommended

Other: None

WORK/HYGIENIC/MAINTENANCE PRACTICES

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION IX - ADDITIONAL COMMENTS

Boron, pieces

Control of Substances Hazardous to Health Regulations

EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE

Occupational Exposure Standard: NE

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