SUPPLIER

MATERION

MATERIAL SAFETY DATA SHEET

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

SECTION I - PRODUCT IDENTIFICATION
Boron, powder

PRODUCT NAME: Boron, powder
PRODUCT CODE: B-MSDS0070
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
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SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION
Boron, powder

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, powder

PHYSICAL STATES:	[ ] Gas [ ] Liquid [X] 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):	NE or NA
VAPOR DENSITY (VS. AIR = 1):	NE or NA
EVAPORATION RATE (VS BUTYL ACETATE=1):	NE or NA
SOLUBILITY IN WATER:	insoluble
SOLUBILITY NOTES	
PERCENT VOLATILE:	N.A.

APPEARANCE AND ODOR

Brown amorphous powder, odorless
.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA
Boron, powder

FLASH PT: N.A. Method Used: Unknown

EXPLOSIVE LIMITS: LEL: NE UEL: NE

EXTINGUISHING MEDIA

USE: Class D or other suitable metal extinguishing agent.

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.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Boron metal powder is highly reactive.
Dust may ignite spontaneously in air.
Powder oxidizes slowly at room temperature.
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, powder

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 [ ] Will not occur [X]

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA
Boron, powder

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

CARCINOGENICITY/OTHER INFORMATION

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

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

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

See "Carcinogencity/Other Information"

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.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
Boron, powder

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, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Use non-sparking tools. 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

Handle and store in a controlled environment and inert gas such as argon.

PRECAUTIONS TO BE TAKEN IN STORING

OTHER PRECAUTIONS

None

SECTION VIII- CONTROL MEASURES
Boron, powder

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: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Special: Handle in a controlled, enclosed environment
Mechanical (Gen): Not recommended
Other: Handle in an inert gas such as argon

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.

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SECTION IX - ADDITIONAL COMMENTS
Boron, powder

Control of Substances Hazardous to Health Regulations
EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE
Occupational Exposure Standard: NE

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