SUPPLIER

MATERION

MATERIAL SAFETY DATA SHEET

GENERATED 03/15/2011, **REVISION** 09/23/1994, **DATE CREATED** 02/20/1991

SECTION I - PRODUCT IDENTIFICATION
Iron boride FeB, powder and pieces

PRODUCT NAME:	Iron boride FeB, powder and pieces
PRODUCT CODE:	I-MSDS0019
REFERENCE #:	12006-84-7
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 boride
CAS NUMBER:	12006-84-7
FORMULA:	FeB
MOLECULAR WEIGHT:	66.66

SYNONYMS

Iron boride; iron monoboride

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SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION
Iron boride FeB, powder and pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits
Iron boride	12006-84-7	0.0 -100.0 %	NE	NE	NE

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS
Iron boride FeB, powder and pieces

PHYSICAL STATES:	[ ] Gas [ ] Liquid [X] Solid
MELTING POINT:	1300.00 C - 1500.00 C
BOILING POINT:	N.A.
SPECIFIC GRAVITY (WATER = 1):	7.15 gm/cc at 18.0 C
VAPOR PRESSURE (VS. AIR OR MM HG):	NA
VAPOR DENSITY (VS. AIR = 1):	NA
EVAPORATION RATE (VS BUTYL ACETATE=1):	NA
SOLUBILITY IN WATER:	insoluble
SOLUBILITY NOTES	
PERCENT VOLATILE:	N.A.

APPEARANCE AND ODOR

Gray powder and pieces, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA
Iron boride FeB, powder and pieces

FLASH PT: N.A. Method Used: Unknown

EXPLOSIVE LIMITS: LEL: NA UEL: NA

EXTINGUISHING MEDIA

USE: Not applicable. Use suitable extinguishing agent 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

May slowely react with water to evolve hydrogen gas.
May be a mild explosion hazard.
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HAZARDOUS COMBUSTION PRODUCTS

SECTION V - REACTIVITY DATA
Iron boride FeB, powder and pieces

STABILITY: Unstable [ ] Stable [X]

CONDITIONS TO AVOID - INSTABILITY

None
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INCOMPATIBILITY - MATERIALS TO AVOID

Water, moisture, strong acids and bases

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Hydrogen gas
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HAZARDOUS POLYMERIZATION: Will occur [ ] Will not occur [X]

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None
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SECTION VI - HEALTH HAZARD DATA
Iron boride FeB, powder and pieces

HEALTH HAZARDS (ACUTE AND CHRONIC)

To the best of our knowledge the chemical, physical and toxicological properties of iron boride have not been thoroughly investigated and recorded.

Iron compounds have varying toxicity. Some iron compounds are suspected carcinogens. In general, ferrous compounds are more toxic than ferric compounds. Acute exposure to excessive levels of ferrous compounds can cause liver and kidney damage, altered respiratory rates and convulsions. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

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 affects 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: Inhalation of dust or powder may cause irritation to the respiratory system, boron and possibly acute iron poisoning. Large amounts of iron may cause iron pneumoconiosis.

Chronic: Inhalation of finely divided powder may cause pulmonary fibrosis. May cause chronic iron poisoning and pathological deposition of iron in the body tissue.

INGESTION:
Acute: May cause gastrointestinal irritation and boron poisoning.
Chronic: May affect the central nervous system and cause damage to the liver.

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

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

TARGET ORGANS: May affect the liver and kidney.
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CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

No toxicity data recorded

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: May cause a red, dry, throat and coughing. Acute iron poisoning may cause: biphasic shock, rapid increase in respiration and pulse rate, congestion of blood vessels which may lead to hypotension, pallor and drowsiness. Chronic iron poisoning may cause: hemorrhagic necrosis of the gastrointestinal tract, hepatotoxicity, metabolic acidosis, prolonged blood clotting time, elevation of plasm levels of serotonin and histamine. Symptoms of pathological deposition or fibrosis of the pancrease, diabetes, mellitus and liver cirrhosis. 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, inflammation and itching.

EYE: May cause redness, itching and watering.
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MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Pre-existing respiratory disorders.
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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: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing; 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.

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SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
Iron boride FeB, powder and 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, 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. Take care not to raise dust. Use non-sparking tools.

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WASTE DISPOSAL METHOD

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

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HAZARD LABEL INFORMATION:

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

PRECAUTIONS TO BE TAKEN IN HANDLING

Iron boride may react with water and moisture to form hydrogen gas. 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
Iron boride FeB, powder and pieces

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

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

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH - approved dust-mist-vapor cartridge 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 or below the PEL, TLV
Special: Handle in a controlled, enclosed environment
Mechanical (Gen): Not 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.

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SECTION IX - ADDITIONAL COMMENTS
Iron boride FeB, powder and pieces

No data available.

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