



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 05-15-96

CHEMICAL IDENTITY

LABEL IDENTITY	CHROMIUM BORIDE
CHEMICAL NAME/SYNONYMS	CHROMIUM MONOBORIDE
FORMULA	CrB₂
CHEMICAL FAMILY	METAL BORIDE
CAS REGISTRY NUMBER	12007-16-8, LISTED IN THE TSCA INVENTORY
MOLECULAR WEIGHT	62.81
HAZARDOUS INGREDIENTS	CHROMIUM BORIDE
%: 100	TLV: 0.5mg/m³ OSHA/PEL: 1mg/m³

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Dark gray powder, no odor
BOILING POINT	NA
DENSITY (gm/cc)	NE
VAPOR PRESSURE @ 20°	NA
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	ND
EVAPORATION RATE (H ₂ O=1)	NA
SOLUBILITY IN WATER	Insoluble
MELTING POINT	NA

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	Use suitable extinguishing media for surrounding materials and type of fire.
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 & EXPLOSION HAZARDS	Chromium Boride may emit toxic fumes if involved in a fire



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HEALTH HAZARD INFORMATION

TOXICITY DATA

NR

HMIS RATING:

HEALTH: **3*** FLAMMABILITY: **0** REACTIVITY: **0** PERSONAL PROTECTION: **H**

ROUTES OF ENTRY

INHALATION: **Yes**
SKIN: **No**
INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

Pre-existing respiratory disorders, pulmonary functions and asthma.

EFFECTS OF OVEREXPOSURE (acute and chronic):

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

Chromium: confirmed human carcinogen with experimental tumorigenic data. Human poison by ingestion with gastrointestinal effects. (Sax, Dangerous Properties of Industrial Mat'l 8th ed)¹
Boron compounds are very toxic & 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 cause depression of the circulation, persistent vomiting and diarrhea, followed by profound shock & coma. The temperature becomes subnormal and a scarletina form rash may cover the entire body. (Same reference as above¹)

INHALATION: *acute:* may cause irritation to the mucous membrane and boron poisoning.
chronic: may cause histologic fibrosis of lungs, nasal and/or lung cancer.

INGESTION: *acute:* 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.

EYES: *acute:* may cause mild irritation. *chronic:* No chronic health effects recorded.

TARGET ORGANS: **May affect the respiratory and central nervous system.**

SIGNS AND SYMPTOMS OF EXPOSURE:

INHALATION: may cause a red, dry throat, coughing, sneezing and difficulty breathing. Boron poisoning may cause: depression of the circulation, persistent vomiting, diarrhea, shock and coma.

INGESTION: may cause gastritis, convulsions, asphyxia, giddiness, nausea, diarrhea and vomiting. Boron poisoning may cause: depression of the circulation, persistent vomiting, diarrhea, shock and coma.

SKIN: may cause redness, itching and burning sensation.

EYES: may cause redness, itching, burning sensation and watering.

CARCINOGENICITY: **Yes** NTP: **Yes** IARC MONOGRAPHS: **Yes** OSHA REGULATE: **Yes**



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HEALTH HAZARD INFORMATION CONTINUED

EMERGENCY FIRST AID PROCEDURES:

INHALTION: 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 immediately. 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.

REACTIVITY DATA

STABILITY	Stable
CONDITIONS CONTRIBUTING TO UNSTABILITY	None
INCOMPATIBILITY (MATERIALS TO AVOID)	NR
HAZARDOUS DECOMPOSITION PRODUCTS	NR
HAZARDOUD POLYMERZATION	Will Not Occur
CONDITIONS TO AVOID	None

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: wear appropriate respiratory and protective equipment specified below. 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:

Consult federal, state and local regulations for proper disposal.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	NIOSH approved dust, mist, vapor cartridge respirator
LOCAL EXHAUST	Maintain at or below the PEL, TLV
MECHANICAL (general)	Recommended
SPECIAL	NA
OTHER	NA
PROTECTIVE GLOVES	Rubber gloves
EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Protective gear suitable to prevent contact



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SPECIAL PROTECTIVE INFORMATION CONTINUED

WORK/HYGENIC/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.

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: Store in cool, dry area; in tightly sealed containers. Wash thoroughly after handling.

TRANSPORTATION REQUIREMENTS	DOT CLASS:	ND
	UN NUMBER:	ND
	IMCO CLASS:	ND
	OTHER:	ND

PRECAUTIONARY LABELING NONE

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ADDITIONAL COMMENTS

Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by, or under the direct supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa)

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE

ND= NO DATA

NR=NOT RECORDED

NE=NOT ESTABLISHED