



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

CHEMICAL IDENTITY

| | |
|-----------------------------|--|
| LABEL IDENTITY | BARIUM FLUORIDE |
| CHEMICAL NAME/SYNONYMS | BARIUM DIFLUORIDE |
| FORMULA | BaF₂ |
| CHEMICAL FAMILY | METAL HALIDE |
| CAS REGISTRY NUMBER | 7887-32-8, LISTED ON EPA TSCA. |
| CALCULATED MOLECULAR WEIGHT | 175.336 |
| HAZARDOUS INGREDIENTS | BARIUM FLUORIDE (7787-32-8) |
| %: 100 | TLV: 0.5mg/m³ (as Ba) OSHA/PEL: 0.5mg/m³ (as Ba) |

Notes: a) reportable chemical SARA Title III, b) all barium materials may contain typically 0.1 strontium unless other wise stated.

PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------|---|----------------------|----------------|
| BOILING POINT | 2137 | DENSITY | 4.89 |
| VAPOR PRESSURE | NA | % VOLATILE BY VOLUME | NA |
| REACTION WITH WATER | None | EVAPORATION RATE | NA |
| SOLUBILITY IN WATER | Slightly Soluble | MELTING POINT | 1335 |
| APPEARANCE | Colorless crystals | ODOR | No odor |
| OTHER | Poisonous, soluble in acid, NH₄Cl | | |

FIRE AND EXPLOSION HAZARD DATA

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|----------------------------------|--|
| FLASH POINT | NA |
| AUTOIGNITION TEMPERATURE (°C) | NA |
| FLAMMABILITY | Non-flammable |
| EXTINGUISHING MEDIA | Use dry chemical, CO₂ |
| SPECIAL FIRE FIGHTING PROCEDURES | Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. |
| UNUSUAL FIRE & EXPLOSION HAZARDS | Material may emit toxic fumes of Ba and F if involved in a fire |

HEALTH HAZARD INFORMATION

| | | |
|---------------|--------------------------------|-------------------------------|
| TOXICITY DATA | ipr-mus LD50: 29.9mg/kg | scu-frg LDLO: 154mg/kg |
| | orl-rat LD50: 250mg/kg | orl-gpg LDLO: 350mg/kg |

HMIS RATING:
HEALTH: **3** FLAMMABILITY: **0** REACTIVITY: **0** PERSONAL PROTECTION: **F**

ROUTES OF ENTRY: INHALATION: **Yes** SKIN: **Yes** INGESTION: **Yes**



BARIUM FLUORIDE (DIFLUORIDE) MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION CONTINUED

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Respiratory Disorders

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: **irritation of nose and eyes, muscular twitching, tendency to fatigue, abdominal cramps, cold sweat, slow heart rate, paralysis of extremities possible.**

DERMAL: **irritation, ulceration's, dermatitis, necrosis of tissue.**

EYE: **mechanical and chemical irritation, watering of the eyes, inflammation of the eyelids and burning sensation.**

OTHER: ***see attached sheet***

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **previous dermal, eye, gastric cardiac or respiratory disorders.**

CARCINOGENICITY: No NTP: No IARC MONOGRAPHS: No OSHA REGULATE: No

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **give 2 cups of water. DO NOT induce vomiting. Seek medical attention.**

INHALATION: **move to fresh air, give oxygen if breathing is difficult, seek medical attention.**

SKIN CONTACT: **brush off skin, wash area with soap & water, seek medical attention.**

EYE CONTACT: **flush eyes with lukewarm water for 15 minutes and seek medical attention.**

REACTIVITY DATA

STABILITY

Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY

None

INCOMPATIBILITY (MATERIALS TO AVOID)

acids, bases

HAZARDOUS DECOMPOSITION PRODUCTS

Ba fume, BaO (thermal), F-, HF (acid contact)

HAZARDOUD POLYMERZATION

Will not occur

CONDITIONS TO AVOID

Incompatible materials and heat



BARIUM FLUORIDE (DIFLUORIDE) MATERIAL SAFETY DATA SHEET

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wear self-contained breathing apparatus and full protective clothing. Isolate area, insure proper ventilation. Vacuum up spill using high efficiency unit and place in a 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

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| RESPIRATORY PROTECTION | NIOSH/MSHA approved dust-mist-fume cartridge respirator |
| LOCAL EXHAUST | Maintain below TLV |
| MECHANICAL (general) | Not recommended |
| SPECIAL | Handle in dry, controlled atmosphere |
| OTHER | NA |
| PROTECTIVE GLOVES | Neoprene |
| EYE PROTECTION | Safety glasses |
| OTHER PROTECTIVE EQUIPMENT | Wear protective clothing to prevent contamination of skin and clothes |

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

Store in tightly closed container, store in cool, dry place, wash hands and face thoroughly after handling and before meals.

| | | |
|-----------------------------|-------------|-----------------------|
| TRANSPORTATION REQUIREMENTS | DOT CLASS: | Not Classified |
| | UN NUMBER: | 1564 |
| | IMCO CLASS: | 6.1 |
| | OTHER: | SPC, Corrosive |

PRECAUTIONARY LABELING **NONE**

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 FOUND



OTHER:

EFFECTS OF OVEREXPOSURE:

Acute poisoning through ingestion has progressive symptoms of disagreeable taste, muscular twitching, nausea and vomiting, stomach pains and diarrhea, anxiety, slow heart rate, convulsions, bluish face and lips, state of shock (weak and rapid pulse rate, cold sweat, pale complexion, light headed feeling, cold hands and feet), paralysis of lower limbs spreading to upper limbs, difficulty in breathing and death by respiratory failure, respiratory paralysis or heart stoppage.

Inorganic fluorides are generally highly irritating and toxic.

Acute effects resulting from overexposure to fluorine compounds are due to hydrogen fluoride, chronic fluorine poisoning, or "fluorosis", occurs among miner of cryolite and consists of a sclerosis of the bones, caused by fixation of the calcium by the fluorine. There may also be some calcification of the ligaments. The teeth are mottled, and there is osteosclerosis and ostemalacia. Large doses can cause very severe nausea, vomiting, diarrhea, abdominal burning and cramp-like pains. Can cause severe bone changes making normal movements painful. Some enzyme systems effects are reported. Also loss of weight, anorexia, anemia, wasting and cachexia, and dental defects are among the common findings in chronic fluoride poisoning. There may be an eosinophilia, and impairment of growth in younger workers. Symptoms of intoxication include gastric, intestinal, circulatory respiratory and nervous complaints and skin rashes. Common air containment's.