1 Identification

- **Product name**
- **Trade name:** Barium fluoride (99.99+% Ba) PURATREM
- **Item number:** 93-5613
- **CAS Number:** 7787-32-8
- **EC number:** 232-108-0
- **Index number:** 056-002-00-7

Details of the supplier of the safety data sheet
- **Manufacturer/Supplier:** Strem Chemicals, Inc.
  7 Mulliken Way
  NEWBURYPORT, MA 01950
  USA
  info@strem.com
- **Information department:** Technical Department
- **Emergency telephone number:**
  EMERGENCY: CHEMTREC: +1 (800) 424-9300
  During normal opening times: +1 (978) 499-1600

2 Hazard(s) identification

- **Classification of the substance or mixture**

  ![GHS07]

  Acute Tox. 4 H302 Harmful if swallowed.
  Acute Tox. 4 H332 Harmful if inhaled.

- **Label elements**
- **GHS label elements**
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**

  ![GHS07]

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  barium fluoride

- **Hazard statements**
  H302+H332 Harmful if swallowed or if inhaled.

- **Precautionary statements**
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

(Contd. on page 2)
Trade name: Barium fluoride (99.99+%-Ba) PURATREM

| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P501   | Dispose of contents/container in accordance with local/regional/national/international regulations. |

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 0
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - Health = 2
    - Fire = 0
    - Reactivity = 0

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  - 7787-32-8 barium fluoride
- Identification number(s)
  - EC number: 232-108-0
  - Index number: 056-002-00-7

### 4 First-aid measures

- Description of first aid measures
  - General information:
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation:
    - Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
    - In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact:
    - Immediately rinse with water.
  - After eye contact:
    - Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing:
    - Immediately call a doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed: No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed:
      - No further relevant information available.
5 Fire-fighting measures

· Extinguishing media
· Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· Special hazards arising from the substance or mixture No further relevant information available.
· Advice for firefighters
· Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Not required.
· Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
· Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

· Handling:
· Precautions for safe handling
  Thorough dedusting.
  Ensure good ventilation/exhaustion at the workplace.
· Information about protection against explosions and fires: No special measures required.
· Conditions for safe storage, including any incompatibilities
· Storage:
· Requirements to be met by storerooms and receptacles: No special requirements.
· Information about storage in one common storage facility: Not required.
· Further information about storage conditions: Keep receptacle tightly sealed.
· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.
· Control parameters
  · Components with limit values that require monitoring at the workplace:
    7787-32-8 barium fluoride
    PEL Long-term value: 2.5 mg/m³
    as F
    REL Long-term value: 2.5 mg/m³
    as F
42.0

TLV Long-term value: 2.5 mg/m³ as F, BEI

· Ingredients with biological limit values:
  7787-32-8 barium fluoride
  BEI 2 mg/L
  Medium: urine
  Time: prior to shift
  Parameter: Fluoride (background, nonspecific)
  3 mg/L
  Medium: urine
  Time: end of shift
  Parameter: Fluoride (background, nonspecific)

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures: Wash hands before breaks and at the end of work.
  · Breathing equipment:
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection: Safety glasses

9 Physical and chemical properties

· Information on basic physical and chemical properties
  · General Information
    · Appearance:
      Form: Powder
      Color: White
    · Odor: Odorless
    · Odor threshold: Not determined.
  · pH-value: Not applicable.
  · Change in condition
    Melting point/Melting range: 1280 °C (2336 °F)
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
  - **LD/LC50 values that are relevant for classification**:
    - Oral LD50: 250 mg/kg (rat)
Safety Data Sheet
according to OSHA HCS

Trade name: Barium fluoride (99.99+%-Ba) PURATREM

7787-32-8 barium fluoride
Oral LD50 250 mg/kg (rat)

- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
  - Sensitization: No sensitizing effects known.
- Additional toxicological information:
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      7787-32-8 barium fluoride 3
    - NTP (National Toxicology Program)
      Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration)
      Substance is not listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential No further relevant information available.
    - Mobility in soil No further relevant information available.
  - Additional ecological information:
    - General notes: Not known to be hazardous to water.
    - Results of PBT and vPvB assessment
      - PBT: Not applicable.
      - vPvB: Not applicable.
    - Other adverse effects No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  - Uncleaned packagings:
    - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, IMDG, IATA UN1564

- UN proper shipping name
  - DOT, IATA Barium compounds, n.o.s.
  - IMDG BARIUM COMPOUND, N.O.S.

(Contd. on page 7)
### Transport hazard class(es)

**DOT**

- Class: 6.1 Toxic substances
- Label: 6.1

### IMDG, IATA

- Class: 6.1 Toxic substances
- Label: 6.1

### Packing group

- DOT, IMDG, IATA: III

### Environmental hazards:

- Marine pollutant: No

### Special precautions for user

- Not applicable.
- Danger code (Kemler): 60
- Stowage Category: A

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

- Not applicable.

### Transport/Additional information:

- DOT
  - Quantity limitations:
    - On passenger aircraft/rail: 100 kg
    - On cargo aircraft only: 200 kg

### IMDG

- Limited quantities (LQ): 5 kg
- Exempted quantities (EQ)
  - Code: E1
  - Maximum net quantity per inner packaging: 30 g
  - Maximum net quantity per outer packaging: 1000 g

### UN "Model Regulation"

- UN 1564 BARIUM COMPOUNDS, N.O.S., 6.1, III

## 15 Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

- Sara

#### Section 355 (extremely hazardous substances):

- Substance is not listed.

#### Section 313 (Specific toxic chemical listings):

- Substance is listed.
Trade name: Barium fluoride (99.99+%-%-Ba) PURATREM

- **TSCA (Toxic Substances Control Act):**
  Substance is listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**
  Substance is not listed.

- **Chemicals known to cause reproductive toxicity for females:**
  Substance is not listed.

- **Chemicals known to cause reproductive toxicity for males:**
  Substance is not listed.

- **Chemicals known to cause developmental toxicity:**
  Substance is not listed.

- **Carcinogenic categories**

  - **EPA (Environmental Protection Agency)**
    7787-32-8 barium fluoride  D, CBD(inh), NL(oral)

  - **TLV (Threshold Limit Value established by ACGIH)**
    7787-32-8 barium fluoride  A4

  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    Substance is not listed.

- **GHS label elements**
  The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**

  - **Signal word** Warning

  - **Hazard-determining components of labeling:**
    barium fluoride

  - **Hazard statements**
    H302+H332 Harmful if swallowed or if inhaled.

  - **Precautionary statements**
    P280 Wear protective gloves/protective clothing/eye protection/face protection.
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    P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
    P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
    P403+P233 Store in a well-ventilated place. Keep container tightly closed.
    P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Trade name: Barium fluoride (99.99+%-Ba) PURATREM

- Department issuing SDS: Technical Department.
- Contact: Technical Director
- Date of preparation / last revision 07/31/2016 / -
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  BEI: Biological Exposure Limit
  Acute Tox. 4: Acute toxicity, Hazard Category 4