

Safety Data Sheet
according to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

1 Identification

- **Product name**
- **Trade name:** Barium nitrate (99.95%-Ba)
- **Item number:** 93-5624
- **CAS Number:**
10022-31-8
- **EC number:**
233-020-5
- **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**



GHS03 Flame over circle

Ox. Sol. 2 H272 May intensify fire; oxidizer.



GHS08 Health hazard

Carc. 1A H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2A H319 Causes serious eye irritation.

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



GHS03



GHS07



GHS08

(Contd. on page 2)

Safety Data Sheet
according to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 1)

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

barium nitrate

· **Hazard statements**

H272 May intensify fire; oxidizer.

H302+H332 Harmful if swallowed or if inhaled.

H319 Causes serious eye irritation.

H350 May cause cancer.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P221 Take any precaution to avoid mixing with combustibles.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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**

10022-31-8 barium nitrate

· **Identification number(s)**

· **EC number:** *233-020-5*

· **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.

(Contd. on page 3)

Safety Data Sheet
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Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 2)

- 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. If symptoms persist, 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:** Use fire fighting measures that suit the environment.
- **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:** No special measures required.
- **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.
- **Protective Action Criteria for Chemicals**

| | |
|-----------------|-------------------------|
| · PAC-1: | 2.9 mg/m ³ |
| · PAC-2: | 350 mg/m ³ |
| · PAC-3: | 2,100 mg/m ³ |

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.

(Contd. on page 4)

Safety Data Sheet
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Printing date 07/21/2021

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Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 3)

- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **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:**

10022-31-8 barium nitrate

| | |
|-----|---|
| PEL | Long-term value: 0.5 mg/m ³ as Ba |
| REL | Long-term value: 0.5 mg/m ³ as Ba |
| TLV | Long-term value: 0.5 mg/m ³ as Ba |

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
- **Breathing equipment:** A NIOSH approved respirator in accordance with 29 CFR 1910.134.
- **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.

(Contd. on page 5)

Safety Data Sheet
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Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 4)

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

| | |
|--------------------------|-----------------|
| · Form: | Crystalline |
| · Color: | White |
| · Odor: | Odorless |
| · Odor threshold: | Not determined. |

· **pH-value:** Not applicable.

· **Change in condition**

| | |
|---------------------------------------|------------------|
| · Melting point/Melting range: | 592 °C (1098 °F) |
| · Boiling point/Boiling range: | Undetermined. |

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

| | |
|-----------------|-----------------|
| · Lower: | Not determined. |
| · Upper: | Not determined. |

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 3.23 g/cm³ (26.95435 lbs/gal)

· **Bulk density at 20 °C (68 °F):** 1.750 kg/m³

· **Relative density** Not determined.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

· **Water at 20 °C (68 °F):** 90.6 g/l

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· **Dynamic:** Not applicable.

· **Kinematic:** Not applicable.

· **Solvent content:**

· **Organic solvents:** 0.0 %

· **VOC content:** 0.0 g/l / 0.00 lb/gl

(Contd. on page 6)

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Reviewed on 07/21/2021

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(Contd. of page 5)

Solids content: 100.0 %
Other information No further relevant information available.

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:**

10022-31-8 barium nitrate

Oral LD50 355 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **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.

(Contd. on page 7)

Safety Data Sheet
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Reviewed on 07/21/2021

Trade name: Barium nitrate (99.95%-Ba)




(Contd. of page 6)

· **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** UN1446
- **UN proper shipping name**
- **DOT** Barium nitrate
- **IMDG, IATA** BARIUM NITRATE
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 5.1 Oxidizing substances
- **Label** 5.1, 6.1
- **IMDG**
- 
- **Class** 5.1 Oxidizing substances
- **Label** 5.1/6.1
- **IATA**
- 
- **Class** 5.1 Oxidizing substances
- **Label** 5.1 (6.1)
- **Packing group**
- **DOT, IMDG, IATA** II
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Danger code (Kemler):** 56

(Contd. on page 8)

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Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 7)

| | |
|--|---|
| · 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: 5 kg On cargo aircraft only: 25 kg |
| · IMDG | |
| · Limited quantities (LQ) | 1 kg |
| · Excepted quantities (EQ) | Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g |
| · UN "Model Regulation": | UN 1446 BARIUM NITRATE, 5.1 (6.1), II |

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.

· **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)**

D, CBD(inh), NL(oral)

· **TLV (Threshold Limit Value established by ACGIH)**

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).

(Contd. on page 9)

Printing date 07/21/2021

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Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 8)

· **Hazard pictograms**



GHS03 GHS07 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

barium nitrate

· **Hazard statements**

- H272 *May intensify fire; oxidizer.*
- H302+H332 *Harmful if swallowed or if inhaled.*
- H319 *Causes serious eye irritation.*
- H350 *May cause cancer.*

· **Precautionary statements**

- P210 *Keep away from heat/sparks/open flames/hot surfaces. No smoking.*
- P221 *Take any precaution to avoid mixing with combustibles.*
- P280 *Wear protective gloves/protective clothing/eye protection/face protection.*
- P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
- 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.*

· **National regulations:**

· **Additional classification according to Decree on Hazardous Materials:**

- Carcinogenic hazardous material group I (extremely dangerous).*
- Carcinogenic hazardous material group II (very dangerous).*
- Carcinogenic hazardous material group III (dangerous).*

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **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.

· **Department issuing SDS:** *Technical Department.*

· **Contact:** *Technical Director*

· **Date of preparation / last revision** 07/21/2021 / -

· **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*

(Contd. on page 10)

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Trade name: Barium nitrate (99.95%-Ba)

(Contd. of page 9)

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
Ox. Sol. 2: Oxidizing solids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Carc. 1A: Carcinogenicity – Category 1A

US