

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Barium Nitrate

**Product Code:** BA-NAT-05

**CAS Number:** 10022-31-8

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



GHS03 GHS07

Signal word: Warning

Hazard statements

H272 May intensify fire; oxidizer.

H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements

P221 Take any precaution to avoid mixing with combustibles.

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

P220 Keep/Store away from clothing/combustible materials.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

C - Oxidizing materials

D1B - Toxic material causing immediate and serious toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

2

0

3

Health (acute effects) = 2

Flammability = 0

Physical Hazard = 3

Other hazards

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

CAS No. / Substance Name:

10022-31-8 Barium nitrate

Identification number(s):

EC number: 233-020-5

Index number: 056-002-00-7

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## SECTION 4. FIRST AID MEASURES

Description of first aid measures

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.  
Information for doctor  
Most important symptoms and effects, both acute and delayed  
No data available  
Indication of any immediate medical attention and special treatment needed  
No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing agents  
Product is not flammable. Use fire-fighting measures that suit the surrounding fire.  
For safety reasons unsuitable extinguishing agents  
Halocarbon extinguisher  
Special hazards arising from the substance or mixture  
This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.  
If this product is involved in a fire, the following can be released:  
Barium oxide  
Nitrogen oxides (NO<sub>x</sub>)  
Advice for firefighters  
Protective equipment:  
Wear self-contained respirator.  
Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Environmental precautions:  
Do not allow material to be released to the environment without official permits.  
Methods and materials for containment and cleanup:  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Prevention of secondary hazards:  
Acts as an oxidizing agent on organic materials such as wood, paper and fats  
Keep away from combustible material.  
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.

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## **SECTION 7. HANDLING AND STORAGE**

Handling  
Precautions for safe handling  
Handle under dry protective gas.  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from flammable substances.

Store away from reducing agents.

Do not store with organic materials.

Store away from metal powders.

Store away from water/moisture.

Store away from oxidizing agents.

Further information about storage conditions:

Store under dry inert gas.

This product is hygroscopic.

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Protect from humidity and water.

Specific end use(s)

No data available

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

10022-31-8 Barium nitrate (100.0%)

PEL (USA) Long-term value: 0.5 mg/m<sup>3</sup> as Ba

REL (USA) Long-term value: 0.5 mg/m<sup>3</sup> as Ba

TLV (USA) Long-term value: 0.5 mg/m<sup>3</sup> as Ba

EL (Canada) Long-term value: 0.5 mg/m<sup>3</sup> as Ba

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:

Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls.

Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands: Impervious gloves

Inspect gloves prior to use.

Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.

Material of gloves

Nitrile rubber, NBR

Penetration time of glove material (in minutes)

480

Glove thickness

0.11 mm

Eye protection: Safety glasses

Body protection: Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance: Form:

Various forms (powder/flake/crystalline/beads, etc.)

Color: White

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 592 °C (1098 °F) (dec)

Boiling point/Boiling range: No data available

Sublimation temperature / start: No data available

Flammability (solid, gas)

Contact with combustible material may cause fire.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density at 20 °C (68 °F): 3.24 g/cm<sup>3</sup> (27.038 lbs/gal)

Relative density: No data available.

Vapor density: N/A

Evaporation rate: N/A

Solubility in Water (H<sub>2</sub>O): No data available

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity

May intensify fire; oxidizer.

Chemical stability

Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with strong oxidizing agents

Reacts with reducing agents

Reacts with flammable substances

Conditions to avoid

No data available

Incompatible materials:

Flammable substances

Reducing agents

Water/moisture

Oxidizing agents

Organic materials

Metal powders

Hazardous decomposition products:

Barium oxide

Nitrogen oxides

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Harmful if inhaled.

Harmful if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:

Oral LD50 355 mg/kg (rat)

Skin irritation or corrosion: May cause irritation

Eye irritation or corrosion: May cause irritation

Sensitization: No sensitizing effects known.

Germ cell mutagenicity: No effects known.

Carcinogenicity:

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity: No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Carcinogenic categories

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

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## SECTION 12. ECOLOGICAL INFORMATION

Toxicity  
Aquatic toxicity:  
No data available  
Persistence and degradability  
No data available  
Bioaccumulative potential  
No data available  
Mobility in soil  
No data available  
Additional ecological information:  
Do not allow material to be released to the environment without official permits.  
Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.  
Avoid transfer into the environment.  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A  
Other adverse effects  
No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation  
Consult official regulations to ensure proper disposal.  
Uncleaned packagings:  
Recommendation:  
Disposal must be made according to official regulations.

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## **SECTION 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 Oxidising substances.  
Label  
5.1+6.1  
Class  
5.1 (OT2) Oxidizing substances  
Label  
5.1+6.1  
IMDG, IATA  
Class

## 5.1 Oxidising substances.

Label

5.1+6.1

Packing group

DOT, IMDG, IATA

II

Environmental hazards:

N/A

Special precautions for user

Warning: Oxidizing substances

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

N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

UN "Model Regulation":

UN1446, Barium nitrate, 5.1 (6.1), II

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## SECTION 15. REGULATORY INFORMATION

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

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

10022-31-8 Barium nitrate

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity

Substance is not listed.

Prop 65 - Developmental toxicity, female

Substance is not listed.

Prop 65 - Developmental toxicity, male

Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

Substance is not listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.