

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2023

Reviewed on 04/10/2023

1 Identification

- **Product identifier**
- **Trade name:** Barium Nitrate, Reagent ACS Grade Crystal
- **Article number:** B0680
- **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:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS03 Flame over circle

Oxidizing Solids 2

H272 May intensify fire; oxidizer.



GHS06 Skull and crossbones

Acute Toxicity - Oral 3

H301 Toxic if swallowed.



GHS07

Acute Toxicity - Inhalation 4 H332 Harmful if inhaled.

Eye Irritation 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



GHS06



GHS07

- **Signal word** *Danger*

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2023

Reviewed on 04/10/2023

Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 1)

- **Hazard statements**

May intensify fire; oxidizer.

Toxic if swallowed.

Harmful if inhaled.

Causes serious eye irritation.

- **Precautionary statements**

Keep away from heat.

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Rinse mouth.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Call a poison center/doctor if you feel unwell.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO₂, powder or water spray to extinguish.

Store locked up.

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

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 3

Reactivity = 0

The substance possesses oxidizing properties.

- **HMIS-ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 3

- **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**

CAS: 10022-31-8 Barium Nitrate

- **Identification number(s)**

· **EC number:** 233-020-5

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

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Trade name: Barium Nitrate, Reagent ACS Grade Crystal

· **Index number:** 056-002-00-7

(Contd. of page 2)

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **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 wash with water and soap and rinse thoroughly.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· **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:** Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to section 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/m³

· **PAC-2:** 350 mg/m³

· **PAC-3:** 2,100 mg/m³

7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

Thorough dedusting.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2023

Reviewed on 04/10/2023

Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 3)

- 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 section 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

CAS: 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, A4

- **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.
 - Avoid contact with the eyes.
 - Avoid contact with the eyes and skin.
- **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:**
 - 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:**



Tightly sealed goggles

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2023

Reviewed on 04/10/2023

Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 4)

· **Body protection:** Protective work clothing

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.
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· Change in condition

· Melting point/Melting range:	592 °C (1,097.6 °F)
· Boiling point/Boiling range:	592 °C (1,097.6 °F)

· Flash point:	Not applicable.
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· Flammability (solid, gaseous):	Product is not flammable.
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· Decomposition temperature:	Not determined.
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· Ignition temperature:	Not determined.
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· Danger of explosion:	Product does not present an explosion hazard.
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· Explosion limits:

· Lower:	Not determined.
· Upper:	Not determined.

· Vapor pressure:	Not applicable.
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· Density at 20 °C (68 °F):	3.24 g/cm ³ (27.0378 lbs/gal)
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· Bulk density:	1,750 kg/m ³
· 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
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· Partition coefficient (n-octanol/water):	Not determined.
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· Viscosity:

· Dynamic:	Not applicable.
· Kinematic:	Not applicable.

· Other information	No further relevant information available.
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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.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2023

Reviewed on 04/10/2023

Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 5)

- **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	100 mg/kg (ATE)
Inhalative	LC50/4h	1.5 mg/l (ATE)

- **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:**
- Water hazard class 1 (Assessment by list): slightly hazardous for water
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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.

(Contd. on page 7)

Safety Data Sheet

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Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 6)

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	<p style="margin: 0;">UN1446</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG, IATA 	<p style="margin: 0;">Barium nitrate BARIUM NITRATE</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="display: flex; align-items: center; gap: 10px;">   </div> <p style="margin: 0;">5.1 Oxidizing substances 5.1, 6.1</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">5.1 Oxidizing substances 5.1, 6.1</p>
<ul style="list-style-type: none"> · IMDG 	<div style="display: flex; align-items: center; gap: 10px;">   </div> <p style="margin: 0;">5.1 Oxidizing substances 5.1/6.1</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">5.1 Oxidizing substances 5.1/6.1</p>
<ul style="list-style-type: none"> · IATA 	<div style="display: flex; align-items: center; gap: 10px;">   </div> <p style="margin: 0;">5.1 Oxidizing substances 5.1 (6.1)</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">5.1 Oxidizing substances 5.1 (6.1)</p>
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	<p style="margin: 0;">II</p>
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	<p style="margin: 0;">No</p>
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category 	<p style="margin: 0;">Warning: Oxidizing substances 56 F-A,S-Q A</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p style="margin: 0;">Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations 	<p style="margin: 0;">On passenger aircraft/rail: 5 kg On cargo aircraft only: 25 kg</p>

(Contd. on page 8)

US

Safety Data Sheet

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Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 7)

- | | |
|--|--|
| <ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | <p>1 kg</p> <p>Code: E2</p> <p>Maximum net quantity per inner packaging: 30 g</p> <p>Maximum net quantity per outer packaging: 500 g</p> |
| <ul style="list-style-type: none"> · UN "Model Regulation": | <p>UN 1446 BARIUM NITRATE, 5.1 (6.1), II</p> |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):** ACTIVE
- **Hazardous Air Pollutants** Substance is not 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) 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** Danger
- **Hazard statements**
May intensify fire; oxidizer.
Toxic if swallowed.
Harmful if inhaled.
Causes serious eye irritation.
- **Precautionary statements**
Keep away from heat.
Keep/Store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Rinse mouth.

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 04/10/2023

Trade name: Barium Nitrate, Reagent ACS Grade Crystal

(Contd. of page 8)

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

Call a poison center/doctor if you feel unwell.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO₂, powder or water spray to extinguish.

Store locked up.

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.

· **Department issuing SDS:** Environment protection department.

· **Contact:**

· **Date of preparation / last revision**

Revision 1.1: 04-10-2023: Updated hazard information based on supplier SDS. STN

Creation date for SDS 11-18-2015. STN

04/10/2023

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

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

Oxidizing Solids 2: Oxidizing solids – Category 2

Acute Toxicity - Oral 3: Acute toxicity – Category 3

Acute Toxicity - Inhalation 4: Acute toxicity – Category 4

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

· *** Data compared to the previous version altered.**