

According to Regulation (EC) No 1907/2006

Barium nitrate

Version number: 1
Issued: 2023-10-03



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

Barium nitrate

CAS number

10022-31-8

EC number

233-020-5

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email address

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Skin irritation, hazard category 2
Acute toxicity, oral, hazard category 3
Acute toxicity, inhalation, hazard category 4
Oxidising solids, hazard category 2

Hazard statements

H272, H301, H319, H332

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H272 May intensify fire; oxidiser.
H301 Toxic if swallowed.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

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Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P260 Do not breathe dust/fumes/gas/mist/vapours/spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302 + P352 IF ON SKIN: Wash with plenty of water/.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/attention if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
Barium nitrate	10022-31-8 233-020-5 - -	100%	Ox. Sol. 2, Acute Tox. 3 - oral, Acute Tox. 4 - inhalation, Skin Irrit. 2	H272, H301, H319, H332 - -	-

Molecular weight

261.34

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

IF exposed or concerned: Get medical advice/attention. First aiders/ medical personnel need to protect themselves. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

Toxic if inhaled. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

Skin contact

In case of skin contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor. The casualty should be transferred to hospital for further treatment.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake).

Information for doctors

No data available.

4.2. Most important symptoms and effects, both acute and delayed

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. See section 11 for more detailed information on health effects and symptoms.

Inhalation

Single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

Skin contact

Single exposure may cause the following adverse effects: Unconsciousness, possibly death.

Eye contact

Single exposure may cause the following adverse effects: Severe irritation. Unconsciousness, possibly death.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No special treatment requirement.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Toxic.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Nitrous gases (NO_x).

Oxides of: Barium.

Not combustible.

fire-promoting effect due to release of oxygen

Ambient fire may liberate hazardous vapours.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. Avoid dust formation. For personal protection, see section 8.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. This product is toxic. Keep containers tightly closed. Immediate first aid is necessary. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Do not reuse empty containers.

General hygiene

Observe good chemical hygiene practices. Remove contaminated clothing immediately and wash skin with soap and water. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature. Store in a dry place. Store in a closed container.

Storage class : Toxic storage.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

TWA 0.5mg/m³ Europe

TWA 0.5mg/m³ UK EH40 WEL = Workplace Exposure Limit.

DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
Barium nitrate (10022-31-8/233-020-5)	DNEL	Chronic (long term) Dermal	8.14 mg/kg	Workers	Systemic
Barium nitrate (10022-31-8/233-020-5)	DNEL	Chronic (long term) Inhalation	2.73 mg/m ³	Workers	Systemic

PNEC/PEC

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Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
Barium nitrate (10022-31-8/233-020-5)	PNEC	Freshwater	115 µg/l
Barium nitrate (10022-31-8/233-020-5)	PNEC	Sediment (freshwater)	600 mg/kg
Barium nitrate (10022-31-8/233-020-5)	PNEC	Sewage Treatment Plant	62.2 mg/l
Barium nitrate (10022-31-8/233-020-5)	PNEC	Soil	207.7 mg/kg
Barium nitrate (10022-31-8/233-020-5)	PNEC	Marine water	11.5 µg/l

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Glove Thickness: 0.11mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Colour

White.

Odour

Odourless.

Melting point / freezing point

592 °C

Boiling point or initial boiling point and boiling range

No data available

Flammability

No data available

Lower and upper explosion limit

No data available

Flash point

No data available

Auto-ignition temperature

> 400 °C

Decomposition temperature

> 550 °C

pH

5 - 8

Kinematic viscosity

No data available

Solubility

94 g/l

Partition coefficient n-octanol/water

No data available

Vapour pressure

No data available

Density and/or relative density

3.2 g/cm³

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Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

There are no known conditions that are likely to result in a hazardous situation.

10.4. Conditions to avoid

Moisture. Heating. Incompatible materials.

10.5. Incompatible materials

There are no known reactivity hazards associated with this product.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Test animals
Barium nitrate 10022-31-8 / 233-020-5	LD50	50-300 mg/kg	Oral	Rat
Barium nitrate 10022-31-8 / 233-020-5	ATE = Acute Toxicity Estimate.	1.6 mg/l	Inhalation	-

Skin corrosion/irritation

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Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
Barium nitrate 10022-31-8 / 233-020-5	No skin irritation.	4 hours	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species
Barium nitrate 10022-31-8 / 233-020-5	Irritating.	Rabbit

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species
Barium nitrate 10022-31-8 / 233-020-5	Does not cause skin sensitisation.	Mouse

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Metabolic activation / Exposure	Species	Method / Guideline
Barium nitrate 10022-31-8 / 233-020-5	Negative.	with and without meta- bolic activation	Escherichia coli/Salmon- ella typhimurium	Ames test

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information**12.1. Toxicity**

No data available

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

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12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

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

SECTION 14: Transport information

14.1. UN number

1446

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

BARIUM NITRATE

IMDG proper shipping name

BARIUM NITRATE

IATA proper shipping name

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14.3. Transport hazard class(es)

Label

ADR/RID/ADN



5.1



6.1

IMDG



5.1



6.1

IATA



5.1



6.1

ADR / RID Class

5.1

ADR / RID Classification code

OT2

ADR / RID hazard identification number

56

IMDG Class

5.1 (6.1)

IATA Class

5.1 (6.1)

ADN Class

5.1

ADN Class Code

OT2

14.4. Packing group

ADR / RID / ADN: II

IMDG: II

IATA: II

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14.5. Environmental hazards

IMDG EmS

F-A, S-Q

14.6. Special precautions for user

Tunnel restriction code: E

Transport category: 2

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC08

SECTION 15: Regulatory information

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

EU regulations

This SDS is not mandated under REACH Regulation (EC) No 1907/2006 and is provided for information only.

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Phrase meaning

Skin Irrit. 2 - Skin irritation, hazard category 2

Acute Tox. 3 - oral - Acute toxicity, oral, hazard category 3

Acute Tox. 4 - inhalation - Acute toxicity, inhalation, hazard category 4

Ox. Sol. 2 - Oxidising solids, hazard category 2

H272 May intensify fire; oxidiser.

H301 Toxic if swallowed.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.