

# SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)



## BARIUM NITRATE

Version: 12  
Revision date: 31/03/2020

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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING.

#### 1.1 Product identifier.

Product Name:	BARIUM NITRATE
Chemical Name:	Nitrato de Bario
CAS No:	10022-31-8
EC No:	233-020-5
Registration No	01-2119986880-22-XXXX

#### 1.2 Relevant identified uses of the substance and uses advised against.

Not available.

#### 1.3 Details of the supplier of the safety data sheet.

Company:	<b>ALDEBARÁN SISTEMAS SL</b>
Address:	C/Jerónimo Zurita, 10, entlo izda, 50001
City:	Zaragoza
Province:	Zaragoza
Telephone:	0034976796134
E-mail:	aldebaran@aldebaransistemas.com

**1.4 Emergency telephone number:** 0034915620420 (Available 24 hours)

### SECTION 2: HAZARDS IDENTIFICATION.

#### 2.1 Classification of the substance.

In accordance with Regulation (EU) No 1272/2008:

- Oxidising solid, Category 2 (Ox. Sol. 2, H272).
- Acute oral toxicity, Category 3 (Acute Tox. 3, H301).
- Acute inhalation toxicity, Category 4 (Acute Tox. 4, H332).
- Eye irritation, Category 2 (Eye Irrit. 2, H319).

This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

#### 2.2 Label elements.

**Labelling in accordance with Regulation (EU) No 1272/2008:**

Pictograms:



Signal Word:

**Danger**

H statements:

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

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### P statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep/Store away from clothing/.../combustible materials.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash with water thoroughly after handling
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/... if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container at a disposal facility in accordance with local regulations.

Contains:  
barium nitrate

### 2.3 Other hazards.

In use, may form flammable/explosive dust-air mixture.

The substance does not fulfil the PBT or vPvP criteria in accordance with annex XIII of the REACH regulations EC 1907/2006.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

### 3.1 Substances.

Chemical Name:	[1] Nitrato de Bario
Composition:	100%
CAS No:	10022-31-8
EC No:	233-020-5
Registration No	01-2119986880-22-XXXX

[1] Substance with a Community workplace exposure limit (see section 8.1).

### 3.2 Mixtures.

Not Applicable.

## SECTION 4: FIRST AID MEASURES.

As a general rule, in case of doubt or if symptoms persist, always call a doctor. NEVER induce swallowing by an unconscious person.

### 4.1 Description of first aid measures.

#### Inhalation.

In the event of massive inhalation of dust, remove the person exposed to fresh air. Keep warm and at rest. If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

Do not proceed with mouth-to-mouth or mouth-to-nose resuscitation. Use the appropriate equipment.

#### Eye contact.

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open. If there is any redness, pain or visual impairment, consult an ophthalmologist.

#### Skin contact.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

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### **Ingestion.**

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.

Seek medical attention, showing the label.

If swallowed accidentally, do not allow to drink, do not induce vomiting and transfer to hospital immediately by ambulance. Show the label to the doctor.

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

Inhalation or ingestion may lead to muscle stimulation and paralytic disorders.

The barium ion affects the central nervous, cardiovascular, respiratory and gastrointestinal disorders.

The following symptoms can be observed:

Ingestion: headache, nausea, dizziness, vomiting, colic, diarrhea, cyanosis, coma, convulsions, spasms, cardiac disorders that may lead to fibrillation.

Inhalation: Anxiety, asthenia, convulsions, heart and / or respiratory diseases that may lead to death.

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

Rinse with plenty of water the area in contact with the substance. See a doctor

## **SECTION 5: FIREFIGHTING MEASURES.**

Oxidising substance which may ignite or increase the risk of flammability when in contact with combustible materials.

### **5.1 Extinguishing media.**

Keep packages cool when in the vicinity of flames

### **Recommended extinguishing methods.**

In the event of a fire, use :- water

Prevent the effluent of fire-fighting measures from entering drains or waterways.

### **5.2 Special hazards arising from the substance.**

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health. Do not breathe in smoke.

The substance is an oxidizer that can cause a fire or explosion in contact with combustible materials.

### **5.3 Advice for firefighters.**

Move the container out of the fire zone if it can be done safely. Cool containers with water spray until fire is out. Flood with water. Stay clear of the ends of the tanks.

Firefighters should wear self-contained breathing apparatus

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

### **6.1 Personal precautions, protective equipment and emergency procedures.**

For exposure control and individual protection measures, see section 7 y 8.

#### **For non first aid worker**

Avoid any contact with the skin and eyes.

Avoid inhaling dust.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

#### **For first aid worker**

First aid workers will be equipped with suitable personal protective equipment (See section 8).

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### 6.2 Environmental precautions.

Prevent any material from entering drains or waterways.

### 6.3 Methods and material for containment and cleaning up.

Retrieve the product by mechanical means (sweeping/vacuuming) : do not generate dust.

### 6.4 Reference to other sections.

No data available

## SECTION 7: HANDLING AND STORAGE.

Requirements relating to storage premises apply to all facilities where the substance is handled.

### 7.1 Precautions for safe handling.

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

#### Fire prevention :

Handle in well-ventilated areas.

Prevent access by unauthorised personnel.

#### Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Keep away from combustible material.

Avoid inhaling dust.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions. In all cases, recover emissions at source.

Avoid eye contact with this substance.

Avoid exposure - obtain special instructions before use.

#### Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the substance is used.

### 7.2 Conditions for safe storage, including any incompatibilities.

#### Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from food and drink, including those for animals.

Keep away from combustible material.

#### Packaging

Always keep in packaging made of an identical material to the original.

Suitable packaging materials :

Polyethylene

Unsuitable packaging materials :

-Wood

-Cardboard

-Paper bag

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### 7.3 Specific end use(s).

For all particular use, consult the supplier

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

### 8.1 Control parameters.

#### Occupational exposure limits :

France: VME: 0.5 mg / m<sup>3</sup> (expressed in barium)

#### Derived no effect level (DNEL) or derived minimum effect level (DMEL):

Long-term systemic effect: DNEL inhalation, worker: 2.73 mg / m<sup>3</sup> (oral route)

Long-term systemic effect: dermal DNEL, worker: 8.141 mg / kg bw / day

### 8.2 Exposure controls.

#### Personal protection measures, such as personal protective equipment

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

#### Eye / face protection

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

Prescription glasses are not considered as protection.

Provide eyewash stations in facilities where the product is handled constantly.

#### Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

- Impervious gloves in accordance with standard EN374

#### Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

#### Respiratory protection

Avoid breathing dust.

If the ventilation is insufficient, wear appropriate breathing apparatus.

When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

Wear a disposable half-mask dust filter in accordance with standard EN149.

Particle filter according to standard EN143 :

- P3 (White)

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

### 9.1 Information on basic physical and chemical properties.

Appearance: Powder

Colour: White

Odour: Odourless

Odour threshold: N.A./N.A.

pH: 6,0-8,0

Melting point: 592 °C

Boiling Point: N.A./N.A.

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Flash point: N.A./N.A.  
Evaporation rate: N.A./N.A.  
Inflammability (solid, gas): N.A./N.A.  
Lower Explosive Limit: N.A./N.A.  
Upper Explosive Limit: N.A./N.A.  
Vapour pressure: N.A./N.A.  
Vapour density: N.A./N.A.  
Relative density: 3,24 g/cm<sup>3</sup>  
Solubility: 8,7% 20°C in water  
Liposolubility: N.A./N.A.  
Hydrosolubility: 87 g/L 20°C  
Partition coefficient (n-octanol/water): N.A./N.A.  
Auto-ignition temperature: N.A./N.A.  
Decomposition temperature: 597°C  
Viscosity: N.A./N.A.  
Explosive properties: N.A./N.A.  
Oxidizing properties: comburente

N.A./N.A. = Not Available/Not Applicable due to the nature of the product

### 9.2 Other information.

Pour point: N.A./N.A.  
Blink: N.A./N.A.  
Kinematic viscosity: N.A./N.A.  
N.A./N.A. = Not Available/Not Applicable due to the nature of the product

## SECTION 10: STABILITY AND REACTIVITY.

### 10.1 Reactivity.

Hazardous reactivity with acids

### 10.2 Chemical stability.

This substance is stable under the recommended handling and storage conditions in section 7.

### 10.3 Possibility of hazardous reactions.

Hazardous reactions with reducing and combustible materials (explosion)

### 10.4 Conditions to avoid.

-heating  
-heat  
-formation of dusts  
Dusts can form an explosive mixture with air.

### 10.5 Incompatible materials.

Keep away from :  
- combustible material

### 10.6 Hazardous decomposition products.

Nitrogen oxides and barium oxides

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### SECTION 11: TOXICOLOGICAL INFORMATION.

#### 11.1 Information on toxicological effects.

Toxic if swallowed.

Harmful by inhalation.

May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days..

a) acute toxicity;

Oral route :

LD50 < 300 mg/kg

Species : Rat

OECD Guideline 423 (Acute Oral toxicityAcute Toxic Class Method)

Inhalation route (Dusts/mist) :

LC50 > 1.1 mg/l

Species : Rat

OECD Guideline 403 (Acute Inhalation Toxicity)

b) skin corrosion/irritation;

Non-irritating skin (OECD 404)

c) serious eye damage/irritation;

Category 2 eye irritant (OECD 405)

d) respiratory or skin sensitisation;

Local lymph node stimulation test :

Non-Sensitiser.

OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

e) germ cell mutagenicity;

Negative (OECD 476)

Negative (OECD 473)

Mutagenesis (in vitro) :

Negative

Ames test (in vitro) :

Negative

f) carcinogenicity;

Negative (OCDE 451, read across)

NOAEL rat = 114.2 mg / kg bw / day (subchronic, read across)

g) reproductive toxicity;

No indication of impaired fertility or development in rats (Read across)

i) STOT-repeated exposure;

NOAEL oral rat = 116.3 mg / kg bw / day (read across - subchronic)

### SECTION 12: ECOLOGICAL INFORMATION.

#### 12.1 Toxicity.

Fish toxicity:

LC50 > 152 mg/l

Species : Danio rerio

Duration of exposure : 96 h

OECD Guideline 203 (Fish, Acute Toxicity Test)

Crustacean toxicity :

EC50 = 14.5 mg/l

Species : Daphnia magna

Duration of exposure : 48 h

Algae toxicity :

ECr50 > 1.74 mg/l

Species : Pseudokirchnerella subcapitata

Duration of exposure : 72 h

OECD Guideline 201 (Alga, Growth Inhibition Test)

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**Aquatic plant toxicity :** ECr50 > 1000 mg/l  
Duration of exposure : 3 h  
Other guideline

### 12.2 Persistence and degradability.

no degradability data is available, the substance is considered as not degrading quickly.

### 12.3 Bioaccumulative potencial.

BCF aquatic species = 74.4 L / kg ww  
Bioaccumulation : BCF = 74.4

### 12.4 Mobility in soil.

No data available.

### 12.5 Results of PBT and vPvB assessment.

no PBT / vPvB

### 12.6 Other adverse effects.

No data available.

## SECTION 13 DISPOSAL CONSIDERATIONS.

Proper waste management of the substance and/or its container must be determined in accordance with Directive 2008/98/EC.

### 13.1 Waste treatment methods.

Do not pour into drains or waterways.

#### **Waste :**

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

#### **Soiled packaging :**

Empty container completely. Keep label(s) on container. Give to a certified disposal contractor.

## SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

**Land:** Transport by road: ADR, Transport by rail: RID.

Transport documentation: Consignment note and written instructions

**Sea:** Transport by ship: IMDG.

Transport documentation: Bill of lading

**Air:** Transport by plane: ICAO/IATA.

Transport document: Airway bill.



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### 14.1 UN number.

UN No: UN1446

### 14.2 UN proper shipping name.

Description:

ADR: UN 1446, BARIUM NITRATE, 5.1 (6.1), PG II, (E)

IMDG: UN 1446, BARIUM NITRATE, 5.1 (6.1), PG II

ICAO: UN 1446, BARIUM NITRATE, 5.1 (6.1), PG II

### 14.3 Transport hazard class(es).

Class(es): 5.1

### 14.4 Packing group.

Packing group: II

### 14.5 Environmental hazards.

Marine pollutant: No

### 14.6 Special precautions for user.

Labels: 5.1, 6.1



Hazard number: 56

ADR LQ: 1 kg

IMDG LQ: 1 kg

ICAO LQ: 1 kg

Provisions concerning carriage in bulk ADR: Not authorized carriage in bulk in accordance with ADR.

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): F-A,S-Q

Proceed in accordance with point 6.

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code.

The product is not transported in bulk.

## SECTION 15: REGULATORY INFORMATION.

### 15.1 Safety, health and environmental regulations/legislation specific for the substance.

#### -Classification and labelling information included in section 2:

The following regulations have been used:

-EU Regulation No. 1272/2008 amended by EU Regulation No. 2018/1480 (ATP 13)

-EU Regulation No. 1272/2008 amended by EU Regulation No. 2019/521 (ATP 12)

Regulation (EC) No 2015/830 (Annex II Reach update)

SVHC: not concerned

Authorization: not concerned

Restriction: not concerned

#### -Container information:

No data available.

#### -Particular provisions :

No data available.

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### 15.2 Chemical safety assessment.

No data available.

### SECTION 16: OTHER INFORMATION.

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

Classification codes:

Acute Tox. 4 [Inhalation] : Acute toxicity (Inhalation), Category 4

Acute Tox. 4 [Oral] : Acute toxicity (Oral), Category 4

Ox. Sol. 2 : Oxidising solid, Category 2

Wording of the phrases mentioned in section 3 :

H272: May intensify fire; oxidiser.

H301: Toxic if swallowed.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

CEN: European Committee for Standardization.

PPE: Personal protection equipment.

IATA: International Air Transport Association.

ICAO: International Civil Aviation Organization.

IMDG: International Maritime Code for Dangerous Goods.

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:

<http://eur-lex.europa.eu/homepage.html>

<http://echa.europa.eu/>

Regulation (EU) 2015/830.

Regulation (EC) No 1907/2006.

Regulation (EU) No 1272/2008.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.