

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

1.1. Product identifier

Product form	: Substance
Trade name	: Barium nitrate a.r.
EC Index-No.	: 056-002-00-7
EC-No.	: 233-020-5
CAS-No.	: 10022-31-8
REACH registration No	: 01-2119986880-22
Product code	: CL00.0210
Type of product	: Pure substance
Formula	: Ba(NO ₃) ₂
Synonyms	: barium nitrate / barium salt of nitric acid / barium(II) nitrate / nitrate of barium / nitrate of baryta / nitric acid, barium salt / nitrobarite

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Chem-Lab nv
Industriezone "De Arend" 2
Zedelgem - Belgium
T +32 50 288320
info@chem-lab.be - www.chem-lab.be

1.4. Emergency telephone number

Emergency number : +32 50 28 83 20

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Oxidising Solids, Category 2	H272
Acute toxicity (oral), Category 3	H301
Acute toxicity (inhal.), Category 4	H332
Serious eye damage/eye irritation, Category 2	H319
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS03

GHS06

Signal word (CLP) :

Danger

Hazard statements (CLP) :

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

Precautionary statements (CLP) :

P308+P311 - IF exposed or concerned: Call a POISON CENTER or 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.
P221 - Take any precaution to avoid mixing with combustibles...

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Barium nitrate a.r.	(CAS-No.) 10022-31-8 (EC-No.) 233-020-5 (EC Index-No.) 056-002-00-7 (REACH-no) 01-2119986880-22	100	Ox. Sol. 2, H272 Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre (www.big.be/antigif.htm). Immediately consult a doctor/medical service. Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital.

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

Symptoms/effects after inhalation	: AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Respiratory difficulties. EXPOSURE TO HIGH CONCENTRATIONS: Symptoms similar to those listed under ingestion.
Symptoms/effects after skin contact	: Slight irritation. Itching. Red skin.
Symptoms/effects after eye contact	: Redness of the eye tissue. Irritation of the eye tissue.
Symptoms/effects after ingestion	: Vomiting. Nausea. Abdominal pain. Diarrhoea. AFTER INGESTION OF HIGH QUANTITIES: Feeling of weakness. Tremor. Cramps/uncontrolled muscular contractions. Paralysis. Cardiac and blood circulation effects.
Chronic symptoms	: No effects known.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.
Unsuitable extinguishing media	: Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Non-flammable. INDIRECT FIRE HAZARD: May intensify fire; oxidiser. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".
Hazardous decomposition products in case of fire	: On heating/burning: release of toxic and corrosive gases/vapours (nitrous vapours) and formation of metallic fumes.

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.
Emergency procedures	: Mark the danger area. Prevent dust cloud formation. No naked flames. Keep containers closed. Wash contaminated clothes. In case of reactivity hazard: consider evacuation.
Measures in case of dust release	: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray.
Methods for cleaning up	: Prevent dust cloud formation. Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Scoop solid spill into closing containers. Spill must not return in its original container. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep container tightly closed.
Hygiene measures	: Observe very strict hygiene - avoid contact.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: combustible materials. reducing agents. (strong) acids. organic materials. metal powders. metallic salts.
Storage area	: Store in a dry area. Ventilation at floor level. Keep only in the original container. Store at ambient temperature. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: iron. polyethylene. MATERIAL TO AVOID: wood. paper. aluminium. zinc.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Barium nitrate a.r. (10022-31-8)		
EU	IOELV TWA (mg/m ³)	0.5 mg/m ³ ((Ba))
Belgium	Limit value (mg/m ³)	0.5 mg/m ³
France	VME (mg/m ³)	0.5 mg/m ³
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0.5 mg/m ³ (als Ba)
United Kingdom	WEL TWA (mg/m ³)	0.5 mg/m ³
USA - ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³
Barium nitrate a.r. (10022-31-8)		
DNEL/DMEL (Workers)		
Long-term - systemic effects, dermal	8.141 mg/kg bw/day	
Long-term - systemic effects, inhalation	2.73 mg/m ³	

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Barium nitrate a.r. (10022-31-8)	
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	0.58 mg/kg bw/day
Long-term - systemic effects, inhalation	0.67 mg/m ³
Long-term - systemic effects, dermal	4.07 mg/kg bw/day
PNEC (Water)	
PNEC aqua (freshwater)	115 µg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	600 mg/kg dwt
PNEC (Soil)	
PNEC soil	207.7 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	62.2 mg/l
8.2. Exposure controls	
Materials for protective clothing:	
GIVE GOOD RESISTANCE: butyl rubber. PVC. GIVE POOR RESISTANCE: natural fibres	
Hand protection:	
Gloves	
Eye protection:	
Safety glasses. In case of dust production: protective goggles	
Skin and body protection:	
Protective clothing	
Respiratory protection:	
Dust production: dust mask with filter type P3	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder.
Molecular mass	: 261.36 g/mol
Colour	: Colourless to white.
Odour	: Odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 590 °C
Freezing point	: No data available
Boiling point	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: > 400 °C (EU Method A.16: Relative Self-Ignition Temperature for Solids)
Decomposition temperature	: > 592 °C
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: Not applicable
Relative density	: 3.2
Density	: 3240 kg/m ³
Solubility	: Moderately soluble in water. Substance sinks in water. Water: 9.4 g/100ml (20 °C, EU Method A.6: Water solubility)
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosive properties : No data available
Oxidising properties : May intensify fire; oxidiser.
Explosive limits : No data available

9.2. Other information

VOC content : Not applicable (inorganic)

SECTION 10: Stability and reactivity

10.1. Reactivity

Violent to explosive reaction with combustible materials: risk of spontaneous ignition. Violent to explosive reaction with many compounds e.g.: with (some) metal powders, with (strong) reducers, with (some) acids/bases and with organic material.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Decomposes on exposure to temperature rise: release of oxygen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Toxic if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Inhalation: Harmful if inhaled.

Barium nitrate a.r. (10022-31-8)

LD50 oral rat	50 - 300 mg/kg bodyweight (Rat, Female, Experimental value, Oral)
LC50 inhalation rat (mg/l)	> 1.1 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male/female, Experimental value, Inhalation (aerosol))

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Potential adverse human health effects and symptoms : Toxic if swallowed. Not irritant to skin. Harmful if inhaled. Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Harmful to crustacea. Slightly harmful to fishes. Not harmful to activated sludge. May cause eutrophication.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

Barium nitrate a.r. (10022-31-8)

LC50 fish 1	> 174 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Read-across, GLP)
EC50 72h algae (1)	> 45.6 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across, GLP)

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12.2. Persistence and degradability

Barium nitrate a.r. (10022-31-8)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Barium nitrate a.r. (10022-31-8)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

Barium nitrate a.r. (10022-31-8)	
Ecology - soil	No (test) data on mobility of the substance available.

12.5. Results of PBT and vPvB assessment

Barium nitrate a.r. (10022-31-8)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Treat using the best available techniques before discharge into drains or the aquatic environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized dump (Class I). Immobilize the toxic or harmful components. Precipitate/make insoluble.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances
16 09 04* - oxidising substances, not otherwise specified

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1446	1446	1446	1446	1446
14.2. UN proper shipping name				
Barium nitrate	Barium nitrate	Barium nitrate	Barium nitrate	Barium nitrate
Transport document description				
UN 1446 Barium nitrate, 5.1 (6.1), II, (E)	UN 1446 Barium nitrate, 5.1 (6.1), II	UN 1446 Barium nitrate, 5.1, II	UN 1446 Barium nitrate, 5.1 (6.1), II	UN 1446 Barium nitrate, 5.1 (6.1), II
14.3. Transport hazard class(es)				
5.1 (6.1)	5.1 (6.1)	5.1 (6.1)	5.1 (6.1)	5.1 (6.1)

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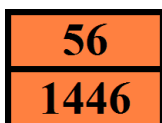
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Transport regulations (ADR) : Subject to the provisions
Classification code (ADR) : OT2
Hazard identification number (Kemler No.) : 56
Orange plates :



Tunnel restriction code (ADR) : E
EAC code : 1Y

Transport by sea

Transport regulations (IMDG) : Subject to the provisions
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-Q

Air transport

Transport regulations (IATA) : Subject to the provisions

Inland waterway transport

Classification code (ADN) : OT2

Rail transport

Transport regulations (RID) : Subject to the provisions
Classification code (RID) : OT2

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
Barium nitrate a.r. is not on the REACH Candidate List
Barium nitrate a.r. is not on the REACH Annex XIV List

VOC content : Not applicable (inorganic)
Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 1, low hazard to water (Classification according to AwSV; ID No. 304)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)
TA Luft : 5.2.1 Total Dust, including Micro Dust

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting : The substance is not listed
giftige stoffen – Ontwikkeling

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Ox. Sol. 2	Oxidising Solids, Category 2
H272	May intensify fire; oxidiser.
H301	Toxic if swallowed.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

SDS Zonder Big

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product