Barium nitrate Analytical Grade ACS

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 05/04/2011 Revision date: 21/01/2026 Supersedes version of: 25/11/2022 Version: 1.4

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

1.1. Product identifier

Product form	:	Substance
Trade name	:	Barium nitrate Analytical Grade ACS
IUPAC name	:	barium nitrate
EC-No.	:	233-020-5
CAS-No.	:	10022-31-8
Product code	:	BANA-00A
Formula	:	Ba(NO3)2

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

Relevant identified uses

Main use category	:	Laboratory use

1.3. Details of the supplier of the safety data sheet

Labbox Labware S.L.
Migjorn, 1
08338 Premia de Dalt, Barcelona
España
T +34 937 07 79 70, F +34 937 909 532
info@labbox.com, www.labbox.com

1.4. Emergency telephone number

Emergency number : +34 937 077 970 (For technical information_Office Hours) In case of medical emergency phone 112 or to your local emergency number. 24 hours a day, 7 days a week

Country/Area	Organisation	Emergency number
United Kingdom	National Poisons Information Service (Belfast Centre). Royal Victoria Hospital. Grosvenor Road BT12 6BA Belfast.	0344 892 0111 Only for healthcare professionals

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 4	H302
Acute toxicity (inhal.), Category 4	H332

Full text of H- and EUH-statements: see section 16

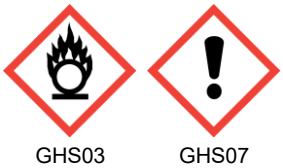
Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS03 GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H272 - May intensify fire; oxidiser.
H302+H332 - Harmful if swallowed or if inhaled.

Precautionary statements (CLP) : P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P220 - Keep/Store away from clothing and combustible materials.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

2.3. Other hazards

Other hazards which do not result in classification : Does not contain PBT and/or vPvB substances ≥ 0.1% evaluated according to Annex XIII of REACH. Endocrine disrupting properties: not known / not applicable according to current criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%
Barium nitrate	CAS-No.: 10022-31-8 EC-No.: 233-020-5	100

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Seek medical attention immediately.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist.

First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

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

Symptoms/effects after inhalation : Harmful if inhaled.

Symptoms/effects after skin contact : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/effects after eye contact : None under normal conditions. Dust from this product may cause eye irritation.

Symptoms/effects after ingestion : Harmful if swallowed.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	May intensify fire; oxidiser.
Explosion hazard	:	No direct explosion hazard.
Hazardous decomposition products in case of fire	:	Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions	:	Exercise caution when fighting any chemical fire. Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

For non-emergency personnel

Protective equipment	:	Wear recommended personal protective equipment.
Emergency procedures	:	Ventilate spillage area. Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Do not breathe dust.

For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Ventilate area. Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	:	Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up	:	Mechanically recover the product. On land, sweep or shovel into suitable containers. Notify authorities if product enters sewers or public waters.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling	:	Avoid contact with skin and eyes. Avoid dust formation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Do not breathe dust.
Hygiene measures	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Keep in a cool, well-ventilated place away from heat.
Storage conditions	:	Store in a well-ventilated place. Keep container tightly closed.
Incompatible products	:	Combustible products.
Storage area	:	Store in a well-ventilated place.
Special rules on packaging	:	Keep only in original container.

7.3. Specific end use(s)

Laboratory chemicals.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL and PNEC

Barium nitrate Analytical Grade ACS (10022-31-8)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	12,22 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1,34 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	227,8 µg/l
PNEC aqua (marine water)	0,00616 mg/l
PNEC aqua (intermittent, freshwater)	0,0054 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	792,7 mg/kg dwt
PNEC sediment (marine water)	0,0223 mg/kg dwt
PNEC (Soil)	
PNEC soil	207,7 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	50,1 mg/l

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment:
Avoid all unnecessary exposure. ISO 374-1.
Personal protective equipment symbol(s):

Eye and face protection

Eye protection:
Chemical goggles or safety glasses

Skin protection

Skin and body protection:
Wear a mask

Hand protection:
protective gloves

Respiratory protection

Respiratory protection:
Wear appropriate mask

Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.
Other information:
The present safety data sheet is consistent with the specific conditions relied on to justify the registration of the substance in accordance with Article 17 or 18 of the REACH regulation. Do not eat, drink or smoke when using this product. Wash hands with water as a precaution.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	white.
Appearance	:	Powder.
Molecular mass	:	261,32 g/mol
Odour	:	odourless.
Odour threshold	:	Not available
Melting point	:	> 600 °C Atm. press.: 1003 hPa Decomposition: 'no'
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Not available
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	> 400 °C
Decomposition temperature	:	> 550 °C
pH	:	5 – 8 25º C
pH solution concentration	:	5 %
Viscosity, kinematic	:	Not applicable
Solubility	:	Water: 94 g/l 20º C
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	3,24 g/cm³ Type: 'density'
Relative density	:	3,24 Type: 'relative density' Temp.: 23 °C
Relative vapour density at 20°C	:	Not applicable
Particle size	:	Not available

9.2. Other information

Other safety characteristics

VOC content	:	0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

May intensify fire; oxidiser.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Air contact. Moisture. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Combustible materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

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

Barium nitrate Analytical Grade ACS (10022-31-8)	
LD50 oral rat	50 – 300 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)

Skin corrosion/irritation : Not classified
pH: 5 – 8 25° C
Serious eye damage/irritation : Not classified
pH: 5 – 8 25° C
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

11.2. Information on other hazards

Other information

Potential adverse human health effects and symptoms : Toxic if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute) : Not classified
Hazardous to the aquatic environment, long–term (chronic) : Not classified

Barium nitrate Analytical Grade ACS (10022-31-8)	
EC50 72h - Algae [1]	> 1,92 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	> 34,31 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	2,9 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

Barium nitrate Analytical Grade ACS (10022-31-8)	
Persistence and degradability	Rapidly degradable

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : Substance(s) not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Must follow special treatment according to local regulation.

SECTION 14: Transport information

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

14.1. UN number or ID number

UN-No. (ADR) : UN 1446
UN-No. (IMDG) : UN 1446
UN-No. (IATA) : UN 1446
UN-No. (ADN) : UN 1446
UN-No. (RID) : UN 1446

14.2. UN proper shipping name

Proper Shipping Name (ADR) : BARIUM NITRATE
Proper Shipping Name (IMDG) : BARIUM NITRATE
Proper Shipping Name (IATA) : Barium nitrate
Proper Shipping Name (ADN) : BARIUM NITRATE
Proper Shipping Name (RID) : BARIUM NITRATE
Transport document description (ADR) (ADR) : UN 1446 BARIUM NITRATE, 5.1 (6.1), II, (E)
Transport document description (IMDG) : UN 1446 BARIUM NITRATE, 5.1 (6.1), II
Transport document description (IATA) : UN 1446 Barium nitrate, 5.1 (6.1), II
Transport document description (ADN) : UN 1446 BARIUM NITRATE, 5.1 (6.1), II
Transport document description (RID) : UN 1446 BARIUM NITRATE, 5.1 (6.1), II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 5.1 (6.1)
Danger labels (ADR) : 5.1, 6.1

:

IMDG

Transport hazard class(es) (IMDG) : 5.1 (6.1)

Danger labels (IMDG) : 5.1, 6.1

:

IATA

Transport hazard class(es) (IATA) : 5.1 (6.1)

Danger labels (IATA) : 5.1, 6.1

:

ADN

Transport hazard class(es) (ADN) : 5.1 (6.1)

Danger labels (ADN) : 5.1, 6.1

:

RID

Transport hazard class(es) (RID) : 5.1 (6.1)

Danger labels (RID) : 5.1, 6.1

:

14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-Q

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

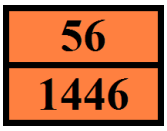
Classification code (ADR) : OT2

Limited quantities (ADR) : 1kg

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P002, IBC08

Special packing provisions (ADR) : B4

Mixed packing provisions (ADR)	:	MP2
Portable tank and bulk container instructions (ADR)	:	T3
Portable tank and bulk container special provisions (ADR)	:	TP33
Tank code (ADR)	:	SGAN
Tank special provisions (ADR)	:	TU3
Vehicle for tank carriage	:	AT
Transport category (ADR)	:	2
Special provisions for carriage - Packages (ADR)	:	V11
Special provisions for carriage - Loading, unloading and handling (ADR)	:	CV24, CV28
Hazard identification number (Kemler No.)	:	56
Orange plates	:	
Tunnel restriction code (ADR)	:	E
EAC code	:	1Y

Transport by sea

Limited quantities (IMDG)	:	1 kg
Excepted quantities (IMDG)	:	E2
Packing instructions (IMDG)	:	P002
IBC packing instructions (IMDG)	:	IBC08
IBC special provisions (IMDG)	:	B21, B4
Tank instructions (IMDG)	:	T3
Tank special provisions (IMDG)	:	TP33
Stowage category (IMDG)	:	A
Properties and observations (IMDG)	:	White crystals. Mixtures with combustible material are readily ignited and may burn fiercely. Toxic if swallowed, by skin contact or by dust inhalation.

Air transport

PCA Excepted quantities (IATA)	:	E2
PCA Limited quantities (IATA)	:	Y543
PCA limited quantity max net quantity (IATA)	:	1kg
PCA packing instructions (IATA)	:	558
PCA max net quantity (IATA)	:	5kg
CAO packing instructions (IATA)	:	562
CAO max net quantity (IATA)	:	25kg
ERG code (IATA)	:	5P

Inland waterway transport

Classification code (ADN)	:	OT2
Special provisions (ADN)	:	802
Limited quantities (ADN)	:	1 kg
Excepted quantities (ADN)	:	E2
Equipment required (ADN)	:	PP, EP
Number of blue cones/lights (ADN)	:	2

Rail transport

Classification code (RID)	:	OT2
Limited quantities (RID)	:	1kg
Excepted quantities (RID)	:	E2
Packing instructions (RID)	:	P002, IBC08
Special packing provisions (RID)	:	B4
Mixed packing provisions (RID)	:	MP2
Portable tank and bulk container instructions (RID)	:	T3
Portable tank and bulk container special provisions (RID)	:	TP33
Tank codes for RID tanks (RID)	:	SGAN
Special provisions for RID tanks (RID)	:	TU3
Transport category (RID)	:	2

Special provisions for carriage – Packages (RID)	:	W11
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW24, CW28
Colis express (express parcels) (RID)	:	CE10
Hazard identification number (RID)	:	56

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (2024/590)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

Council Regulation (EC) for the control of dual-use items

Not listed on the COUNCIL REGULATION (EC) of dual-use items.

VOC Directive (2004/42)

VOC content : 0 %

Explosives Precursors Regulation (EU 2019/1148)

Not listed on the Explosives Precursors list (EU)

Drug Precursors Regulation (EC 273/2004)

Not listed on the Drug Precursors list (EU)

National regulations

Germany

Water hazard class (WGK)	:	WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 304).
Chemicals Prohibition Ordinance (ChemVerbotsV)	:	This product is subject to ChemVerbotsV Annex 2 Entry 2. The following requirement must be observed: Basic requirements for the implementation of the submission (according to § 8 paragraph 1, 3 and 4).
VOC content	:	0 %

Netherlands

SZW-lijst van kankerverwekkende stoffen	:	The substance is not listed
SZW-lijst van mutagene stoffen	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	:	The substance is not listed

Poland

Polish National Regulations	:	Act of 25 February 2011 on chemical substances and their mixtures (J. o L. No. 63, item 322 as amended; consolidated text J. o L. 2019, item 1225). Act of 14 December 2012 on waste (J. o L. 2013, item 322 as amended; consolidated text J. o L. 2020, item 797). The announcement of Marshal of the Sejm of the Republic of Poland dated 19 October 2016 concerning the consolidated text announcement of the decree on the management of packaging and packaging waste (J. o L. 2016, item 1863 as amended). Decree of the Minister of Environment of 14 December 2014 on the catalogue of waste (J. o L. 2014, item 1923). Act of 19 August 2011 on the Carriage of Dangerous Goods (J. o L. 2011 No. 227, item 1367 as amended; consolidated text J. o L. 2020, item 154). Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the highest permissible concentration and intensity of noxious agents for health at work environment (J. o L. item 1286 as amended). The announcement of Minister of Health dated 9 September 2016 concerning the consolidated text announcement of the decree of the Minister of Health of 30 December 2004 on health and safety at work related to exposure to chemical agents at work (J. o L. of 16 September 2016, item 1488) Regulation of the Minister of Health of 2 February 2011 on tests and measurements of the noxious agents for health at work environment (J. o L. No. 33, item 166 as amended). Regulation of the Minister of Environment of 9 December 2003 on particularly hazardous substances to the environment (J. o L. No. 217, item 2141). ADR Agreement: Government Statement of 13 March 2023 on the entry into force of amendments to Annexes A and B to the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed in Geneva on 30 September 1957 (J. o. L. 2023, item 891) Regulation of the Minister of Health of 25 August 2015 on the method of marking places, pipelines, and containers and tanks used for storing or containing hazardous substances or hazardous mixtures (J.o.L. 2015, item 1368 as amended)

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Ox. Sol. 2	Oxidising Solids, Category 2
H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H332	Harmful if inhaled.

Safety Data Sheet (SDS), EU

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.