

SAFETY DATA SHEET

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



SODIUM NITRATE

Version: 4
Revision date: 19/01/2018

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

1.1 Product identifier.

Product Name: SODIUM NITRATE
Chemical Name: sodium nitrate
CAS No: 7631-99-4
EC No: 231-554-3
Registration No: 01-2119488221-41-XXXX

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

Pyrotechnical compositions

Uses advised against:

Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet.

Company: **ALDEBARÁN SISTEMAS SL**
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:

Eye Irrit. 2 : Causes serious eye irritation.
Ox. Sol. 3 : May intensify fire; oxidiser.

2.2 Label elements.

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

Pictograms:



Signal Word:

Warning

H statements:

H272 May intensify fire; oxidiser.
H319 Causes serious eye irritation.

P statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P221 Take any precaution to avoid mixing with combustibles

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P264	Wash ... thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P283	Wear fire/flame resistant/retardant clothing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use special media to extinguish.
P501	Dispose of contents/container to local/national normative

2.3 Other hazards.

In normal use conditions and in its original form, the product itself does not involve any other risk for health and the environment.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.

Mono-constituent.

Chemical Name:	sodium nitrate
CAS No:	7631-99-4
EC No:	231-554-3
Registration No:	01-2119488221-41-XXXX

3.2 Mixtures.

Not Applicable.

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Inhalation.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration.

Eye contact.

Remove contact lenses, if present and if it is easy to do. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance. Don't let the person to rub the affected eye.

Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.

Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.

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

Irritant Product, repeated or prolonged contact with skin or mucous membranes can cause redness, blisters or dermatitis, inhalation of spray mist or particles in suspension may cause irritation of the respiratory tract, some symptoms may not be immediate.

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

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious. Cover the affected area with a dry sterile bandage. Protect the affected area from pressure or friction.

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SECTION 5: FIREFIGHTING MEASURES.

5.1 Extinguishing media.

Suitable extinguishing media:

Water spray.

Unsuitable extinguishing media:

ABC powder, CO₂

5.2 Special hazards arising from the substance.

Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots.

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.

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

6.2 Environmental precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground.

6.3 Methods and material for containment and cleaning up.

The contaminated area should be immediately cleaned with an appropriate de-contaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

6.4 Reference to other sections.

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

For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.

Keep containers tightly closed. Install production and transport machinery that allows adequate suction / ventilation. Protect from moisture. Keep away from sources of ignition flame. No Smoking

The substance / product is not combustible.

7.2 Conditions for safe storage, including any incompatibilities.

Separate from oxidizable substances. Separate from reducing agents

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Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III):

Code	Description	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
P8	OXIDISING LIQUIDS AND SOLIDS	50	200

7.3 Specific end use(s).

Pyrotechnical mixtures

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.

The product does NOT contain substances with Professional Exposure Environmental Limit Values. The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
sodium nitrate CAS No: 7631-99-4 EC No: 231-554-3	DNEL (Workers)	Inhalation, Long-term, Systemic effects	36,7 (mg/m ³)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

8.2 Exposure controls.

Measures of a technical nature:

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

Concentration:	100 %	
Uses:	Pyrotechnical compositions	
Breathing protection:		
PPE:	Particle filter mask	
Characteristics:	«CE» marking, category III. Made of filtering material, it covers nose, mouth and chin.	
CEN standards:	EN 149	
Maintenance:	Check for any tears, defects, etc. before use. Since it is disposable individual protection equipment, it should be replaced after use.	
Observations:	Does not protect worker unless properly adjusted. Follow the manufacturer's instructions regarding suitable use of the equipment.	
Filter Type needed:	P2	
Hand protection:		
PPE:	Protective gloves.	
Characteristics:	«CE» marking, category II.	
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420	
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.	
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.	

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Material:	PVC (polyvinyl chloride)	Breakthrough time (min.):	> 480	Material thickness (mm):	0,35
Eye protection:					
PPE:	Protective goggles against particle impacts.				
Characteristics:	«CE» marking, category II. Eye protector against dust and smoke.				
CEN standards:	EN 165, EN 166, EN 167, EN 168				
Maintenance:	Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer's instructions.				
Observations:	Some signs of wear and tear include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.				
Skin protection:					
PPE:	Anti-static protective clothing.				
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.				
CEN standards:	EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5				
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.				
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.				
PPE:	Anti-static safety footwear.				
Characteristics:	«CE» marking, category II.				
CEN standards:	EN ISO 13287, EN ISO 20344, EN ISO 20346				
Maintenance:	The footwear should be checked regularly				
Observations:	The level of comfort during use and acceptability are factors that are assessed very differently depending on the user. Therefore, it is advisable to try on different footwear models and, if possible, different widths.				

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.

Appearance: Powder
Colour: White
Odour: Weak odour
Odour threshold: N.A./N.A.
pH: 8-9 (10%)
Melting point: 306 °C
Boiling Point: N.A./N.A.
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: 2,26 g/cm³
Solubility: 874 g/l
Liposolubility: N.A./N.A.
Hydrosolubility: N.A./N.A.
Partition coefficient (n-octanol/water): N.A./N.A.
Auto-ignition temperature: N.A./N.A.
Decomposition temperature: >600°C
Viscosity: N.A./N.A.
Explosive properties: N.A./N.A.

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Oxidizing properties: N.A./N.A.
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.

The product does not present hazards by their reactivity.

10.2 Chemical stability.

Stable under the recommended handling and storage conditions (see section 7).
The product does not contain peroxides nor form them.

10.3 Possibility of hazardous reactions.

Reactions with reducing agents. Reactions with oxidizing agents.

10.4 Conditions to avoid.

Avoid heating while in contact with easily oxidizable materials.

10.5 Incompatible materials.

Substances to be avoided:
Reducing agents, oxidizable substances.

10.6 Hazardous decomposition products.

Disodium oxide

SECTION 11: TOXICOLOGICAL INFORMATION.

IRRITANT PREPARATION. Splatters in the eyes can cause irritation.

11.1 Information on toxicological effects.

There are no tested data available on the product.
Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.
Splatters in the eyes can cause irritation and reversible damage.

a) acute toxicity;

Assessment of water toxicity: After a single intake in large quantities there is a risk of injury to blood cells (methemoglobinemia).

Experimental / calculated data:

LD50 rat (by ingestion): 3.430 mg / kg (OECD Guideline 401)

(By inhalation): No study is necessary.

Rat LD50 (dermal): > 5,000 mg / kg (OECD Directive 402)

The product has not been tested. The indication has deduced from substances or products of a similar structure or composition.

b) skin corrosion/irritation; c) serious eye damage/irritation;

Assessment of irritant effects:

It is not irritating to the skin. It irritates the eyes

Experimental / calculated data:

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Corrosion / Irritation of rabbit skin: non-irritant (OECD Directive 404)

The product has not been tested. The indication has been derived from substances or products of a similar structure or composition.

Serious injury / eye irritation rabbit: no irreversible damage (OECD Guideline 405).

d) respiratory or skin sensitisation;
Assessment of sensitization: It is not skin sensitizer according to animal experimentation.

Experimental / calculated data:
Local lymph node assay in mouse (ELNL) mouse: The product is not sensitizing. (OECD Directive 429)

e) germ cell mutagenicity;
Assessment of mutagenicity: The results of available analyzes regarding the mutagenic effect are not unified.

f) carcinogenicity;
En estudios a largo plazo en ratas, no se observaron efectos cancerígenos, al administrar la sustancia en el alimento. Bajo determinadas condiciones la sustancia puede formar nitrosaminas. En ensayos realizados con animales las nitrosaminas han presentado un efecto cancerígeno.

g) reproductive toxicity;
During the tests on the animal no effects were observed that harm the animal.

h) STOT-single exposure;
Inconclusive data for classification.

i) STOT-repeated exposure;
The substance may cause damage to the blood system after repeated oral ingestions.

j) aspiration hazard;
Not conclusive data for classification.

SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

There is a high probability that the product is harmful to aquatic organisms. During a discharge in small concentrations in the biological treatment plants, variations in the function of the activated sludge are not to be expected.

Toxicity in fish:
LC50 (96h) 7.950 mg / l Oncorhynchus tshawytscha (static)
Bibliographic indication. Nominal concentration.

Aquatic invertebrates:
EC50 (24 h) 8.609 ng / l, Daphnia magna (acute daphnia test, static)

Aquatic plants:
EC50 (10 days) > 1,700 mg / l (chlorophyll content), algae (static)
The product has not been tested. The indication has been derived from substances or products of a similar structure.

Microorganisms / effect on activated sludge:
CE10 (3h) 180 mg / l, activated sludge, domestic (OECD directive 209, aquatic)

Chronic toxicity in fish:
Studies not necessary for scientific reasons.

Chronic toxicity aquatic invertebrates.

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Studies not necessary for scientific reasons.

Terrestrial toxicity assessment:
Studies not necessary for scientific reasons.

12.2 Persistence and degradability.

It is not applicable to inorganic substances. By microorganisms, nitrate can be oxidized, but also reduced to nitrogen.

Evaluation of stability in water:
According to the chemical structure, no hydrolysis is expected.
Studies not necessary for scientific reasons.

12.3 Bioaccumulative potential.

Accumulation is not expected in organisms

12.4 Mobility in soil.

Adsorption in soils: Adsorption is not expected in solid soil particles.

12.5 Results of PBT and vPvB assessment.

According to Annex XIII of Regulation (EC) No. 1907/2006 concerning the registration, evaluation, authorization and restriction of chemical substances and preparations (REACH): Not applicable to inorganic substances.

12.6 Other adverse effects.

No The substance is not listed in Regulation (EC) 1005/2009 on substances that destroy the ozone layer.

SECTION 13 DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.

Contact the manufacturer regarding recycling.
Analyze the possibility of recycling.
Contact the waste bag for recycling.
Analyze the possibility of use in agriculture

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: UN1498

14.2 UN proper shipping name.

Description:

ADR: UN 1498, SODIUM NITRATE, 5.1, PG III, (E)

IMDG: UN 1498, SODIUM NITRATE, 5.1, PG III

ICAO/IATA: UN 1498, SODIUM NITRATE, 5.1, PG III

14.3 Transport hazard class(es).

Class(es): 5.1

14.4 Packing group.

Packing group: III

14.5 Environmental hazards.

Marine pollutant: No

14.6 Special precautions for user.

Labels: 5.1



Hazard number: 50

ADR LQ: 5 kg

IMDG LQ: 5 kg

ICAO LQ: 10 kg

Provisions concerning carriage in bulk ADR:

VC1 Carriage in bulk in sheeted vehicles, sheeted containers or sheeted bulk containers is permitted.

VC2 Carriage in bulk in closed vehicles, closed containers or closed bulk containers is permitted.

AP6 If the vehicle or container is made of wood or other combustible material, an impermeable surfacing resistant to combustion or a coating of sodium silicate or similar substance shall be provided. Sheeting shall also be impermeable and non-combustible.

AP7 Carriage in bulk shall only be as a full load.

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.

The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): P8

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

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15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION.

Classification codes:

Eye Irrit. 2 : Eye irritation, Category 2
Ox. Sol. 3 : Oxidising solid, Category 3

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CEN: European Committee for Standardization.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
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.