

SAFETY DATA SHEET

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



POTASSIUM PERCHLORATE

Version: 10
Revision date: 01/07/2019

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

1.1 Product identifier.

Product Name:	POTASSIUM PERCHLORATE
Chemical Name:	Potassium Perchlorate
Index No:	017-008-00-5
CAS No:	7778-74-7
EC No:	231-912-9
REACH:	01-2120764842-47-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:

Acute Tox. 4 : H302
Ox. Sol. 1 : H271
Eye Irrit. 2; H319
STOT RE 2; H373

The classification of the product has been determined on the basis of the following procedures in accordance with Article 9 and the criteria of Regulation (EC) No. 1272/2008:

Physical hazard: evaluation of test data according to Annex I, part 2

Hazards to health and the environment: assessment of toxicological and ecotoxicological data according to Annex I, part 3 and 4

2.2 Label elements.

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

Pictograms:



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Signal Word:

Danger

H statements:

H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H319	Causes serious eye irritation
H373	May cause damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

P statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P260	Do not breathe dust/fume/gas/mist/vapours/ spray..
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P371+P380+P375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Contains:

potassium perchlorate

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.

Chemical Name:	Potassium Perchlorate
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REACH:	01-2120764842-47-XXXX

3.2 Mixtures.

Not Applicable.

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.

If discomfort persists, consult the doctor. Remove contaminated clothing and shoes immediately and clean them thoroughly before using them again.

Inhalation.

Remove the affected person from the danger zone. Get fresh air.

Eye contact.

Dilate the eyelids, rinse the eyes thoroughly (15 min). Ophthalmological treatment.

Skin contact.

Wash affected area immediately with plenty of water

Ingestion.

Rinse the mouth and then drink plenty of water. Require medical help immediately. In case of fading, no oral administration

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

There is no available data

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

There is no available data

SECTION 5: FIREFIGHTING MEASURES.

5.1 Extinguishing media.

Recommended extinguishing methods.

The product itself is not fuels; Take fire-fighting measures according to the characteristics of the fire in the vicinity of the product.

5.2 Special hazards arising from the substance.

In case of fire they can) be released: potassium chloride, potassium oxide, oxygen.

5.3 Advice for firefighters.

Use self-contained breathing apparatus. The product is not flammable, but promotes combustion. Wear protective clothing

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.

For personnel who are not part of the emergency services

Observe the protection measures (epigraphs 7 and 8); Provide sufficient ventilation. Keep away from sources of ignition.

For emergency personnel

There is no available data. Personal protective equipment - see section 8

6.2 Environmental precautions.

Avoid the contamination of drains, surface water or groundwater.

6.3 Methods and material for containment and cleaning up.

Moisten, pick with mechanical means. Carry in suitable containers for recycling or disposal.

6.4 Reference to other sections.

There is no available data

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.

Ensure good ventilation of the premises; If necessary, install localized suction in the workplace. Avoid the formation and accumulation of dust. Handle with care to avoid shocks, friction and shock. Use equipment / instruments protected against explosion.

Do not smoke, eat or drink during work. Keep away from food and drinks. Wash hands before breaks and when finishing work.

Do not breathe the dust. Remove stained or soaked clothing immediately.

Keep away from possible sources of heat and ignition. Take measures against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities.

Keep the containers dry and hermetically sealed and store them in a cool, well-ventilated place.

Close the open tanks carefully and keep them standing up to avoid any spillage. Always keep the product in the original packaging.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.

Cut values in the workplace

Nº	Name of the substance	N.CAS	N.CE
1	POWDER (PARTICLES NOT OTHER CLASSIFIED)		
	Environmental Limit Values		
	Particles (insolubles or sparingly solubles) not otherwise classified: Inhalable fraction		
	Inhalable fraction		
	VLA-ED	10 mg/m ³	
	Environmental Limit Values		
	Particles (insolubles or sparingly solubles) not otherwise classified: Breathable fraction		
	Breathable		
	VLA-ED	3 mg/m ³	

DNEL, DMEL and PNEC Value

VALORES DNEL (workers)

Nº	Name of the substance	Time of action	effect	N.CAS / CE Value
1	Potassium perchlorate			7778-74-7 231-912-9
	Dermal	Long term (chronic)	Sistemic	1,967 mg/kg/day
	Inhalation	Long term (chronic)	Sistemic	0,082 mg/m ³

DNEL Value(consumidores)

Nº	Name of the substance	Time of action	effect	N.CAS / CE Valor
1	Potassium perchlorate			7778-74-7 231-912-9
	Dermal	Long term (chronic)	Sistemic	0,983 mg/kg/day
	Inhalation	Long term (chronic)	Sistemic	0,02 mg/m ³

PNEC Value

Nº	Name of the substance	Type	N.CAS / CE Value
1	Potassium perchlorate		7778-74-7 231-912-9
	Water	Freshwater	21,5 µg/l
	Water	Marine water	21,5 µg/l
	Water	Freshwater sediment	2,089 mg/kg dry weight
	Water	Marine water sediment	0,208 mg/kg dry weight
	Soil		2,55 mg/kg dry weight
	Industrial water treatment (STP)		3,835 mg/l

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8.2 Exposure controls.

Measures of a technical nature:

There is no available data

Respiratory protection

When the limit values of the workplace are transferred, an approved respiratory protection device must be worn for this purpose. If there are no indications about the limit values referring to the workplace in case of aerosol and mist formation, sufficient measures of respiratory protection should be taken.

Eye / face protection

Protective goggles (EN166)

Protection of hands

In case of risk of skin contact with the product, the use of protective gloves tested according to the standard, eg EN374, is sufficient. In any case, it must be checked that the protective glove is suitable for the specific workplace (eg mechanical resistance, product compatibility, antistatic). Follow the instructions and information of the glove manufacturer for the use, storage, care and exchange of gloves. The protective gloves should be replaced immediately in case of damage or when the first signs of wear appear. It is recommended preventive protection of the skin (skin protection cream). Organize work processes so they do not have to wear gloves permanently.
Suitable material: Nitrile rubber

Others

Work clothes usual in the chemical industry

Environmental exposure controls

There is no available data.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.

Appearance: Powder

Colour: White

Odour: N.A./N.A.

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

pH: 5,0-6,5 a 25°C (13,9 g/l H₂O)

Melting point: 525 °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: 2,52 g/cm³

Solubility: 15 g/l a 25°C

Liposolubility: N.A./N.A.

Hydrosolubility: N.A./N.A.

Partition coefficient (n-octanol/water): N.A./N.A.

Auto-ignition temperature: The product is incombustible.

Decomposition temperature: >100°C

Viscosity: N.A./N.A.

Explosive properties: The product does not present danger of explosion.

Oxidizing properties: O very combusive

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

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9.2 Other information.

Pour point: N.A./N.A.

Blink: N.A./N.A.

Kinematic viscosity: N.A./N.A.

Distribution coefficient: $\log Pow = -7.18 (25^\circ)$

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

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.

There is no available data

10.2 Chemical stability.

Application of the recommended standards for stable storage and handling (see section 7)

10.3 Possibility of hazardous reactions.

No dangerous reaction is expected in the case of an application according to the intended use.

10.4 Conditions to avoid.

There is no available data

10.5 Incompatible materials.

Reducers, metals in powder, strong acids, alcohols

10.6 Hazardous decomposition products.

Potassium chloride, potassium oxide.

SECTION 11: TOXICOLOGICAL INFORMATION.

11.1 Information on toxicological effects.

a) acute toxicity;
There are no data.

b) skin corrosion/irritation;
There are no data.

c) serious eye damage/irritation; species	Rabbit
Provenance	CSR
Comments	the product is irritating
Evaluation / classification	In view of the available data, the classification criteria are met.

d) respiratory or skin sensitisation;
There are no data.

e) germ cell mutagenicity;
There are no data.

f) carcinogenicity;
There are no data.

g) reproductive toxicity;
There are no data.

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h) STOT-single exposure;
There are no data.

i) STOT-repeated exposure;
absorption route Oral
species Rat
Method EPA OPPTS 870.3100
Provenance CSR
Evaluation / classification In view of the available data, the classification criteria are met.

j) aspiration hazard;
Undetermined

SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

Toxicity to fish (acute) - No data available
Toxicity to fish (chronic) - No data available

Toxicity to Daphnia (acute)	EC50	> 100 mg / l
	Exposure time	48 hours
	Species	Daphnia magna
	Method	OECD 202
	Provenance	CSR

Toxicity to Daphnia (Chronic) - No data available

Toxicity to algae (acute)	EC50	> 100 mg / l
	Exposure time	72 hours
	Species	Scenedesmus capricornutum
	Method	OECD 201
	Provenance	CSR

Toxicity to algae (chronic) - No data available

Toxicity in bacteria No data

12.2 Persistence and degradability.

No data available

12.3 Bioaccumulative potencial.

Log Pow = -7,18
Temperature of reference= 25°C

12.4 Mobility in soil.

No data available

12.5 Results of PBT and vPvB assessment.

The product is not considered PBT or vPvBv

12.6 Other adverse effects.

No data available

12.7 Other information

Do not pour product into water and channel and do not store in public warehouses.

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SECTION 13 DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.

Product

The assignment of a waste code according to the European Waste Catalog should be done in agreement with the regional waste disposal companies.

Dispose in accordance with official prescriptions.

Containers / packaging

Contaminated packaging / packaging should be emptied as best as possible; then, after the corresponding cleaning, they can be used again. Containers / packaging that can not be cleaned should be disposed of in accordance with the regional waste disposal company.

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.

14.1 UN number.

UN No: UN1489

14.2 UN proper shipping name.

Description:

ADR: UN 1489, POTASSIUM PERCHLORATE, 5.1, PG II, (E)

IMDG: UN 1489, POTASSIUM PERCHLORATE, 5.1, PG II

ICAO: UN 1489, POTASSIUM PERCHLORATE, 5.1, 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



Hazard number: 50

ADR LQ: 1 kg

IMDG LQ: 1 kg

ICAO LQ: 2,5 kg

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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-H,S-Q
Proceed in accordance with point 6.
IMDG Code segregation group: 13 Perchlorates

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.

Regulation (EC) No. 1907/2006 (REACH) Annex XIV (List of substances subject to authorization)

The product does not contain substances considered to be substances subject to authorization in accordance with Annex XIV of the REACH Regulation (EC) 1907/2006.

List of REACH candidates for substances of very high concern (SVHC) for the authorization procedure.

The substance is not considered as a possible substance that could be included in Annex XIV (List of substances subject to authorization) in accordance with Article 57, in relation to Article 59, of the REACH Regulation (EC) 1907/2006.

Regulation (EC) No. 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, COMMERCIALIZATION AND USE OF CERTAIN SUBSTANCES, PREPARATIONS AND DANGEROUS ARTICLES

The substance is not subject to Annex XVII of the REACH Regulation (EC) 1907/2006.

Directive 2012/18 / EU on the control of the risks inherent to serious accidents involving hazardous products.

The product is subject to Annex I, part 1, hazard category: P8

Other provisions

During the delivery of this product, the national health and safety regulations must be applied.

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:

- Acute Tox. 4 : Acute toxicity (Oral), Category 4
Ox. Sol. 1 : Oxidising solid, Category 1
Eye Irrit. two; Eye irritation, Category 2
STOT RE 2; Toxicity in certain organs after repeated exposures, Category 2

Sections changed compared with the previous version:

2,3,4,5,6,7,8,9,10,11,12,13,15

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

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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.