

SAFETY DATA SHEET



according to Regulation (EC) No 1907/2006 (REACH) as amended

Potassium nitrate

Creation date	01st June 2021		
Revision date	30th August 2024	Version	1.3

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

- 1.1. Product identifier**
Substance / mixture Potassium nitrate
Chemical name substance
CAS number Potassium nitrate
EC (EINECS) number 7757-79-1
Registration number 231-818-8
01-2120104950-66-0000

1.2. Relevant identified uses of the substance or mixture and uses advised against
Substance's intended use

Laboratory chemical substances. Industrial chemicals

Substance uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier

Name or trade name	Macco Organiques, s.r.o.
Address	Zahradní 1938/46c, Bruntál 1, 792 01
	Czech Republic
Identification number (CRN)	26819210
VAT Reg No	CZ26819210
Phone	+420 555 530 300
E-mail	macco@macco.cz

Competent person responsible for the safety data sheet

Name	Petr Ševčík
E-mail	petr.sevcik@macco.cz

- 1.4. Emergency telephone number**
European emergency number: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Ox. Sol. 3, H272

Most serious adverse physico-chemical effects

May intensify fire; oxidiser.

Most serious adverse effects on human health and the environment

May cause gastrointestinal irritation. May cause skin irritation, respiratory tract irritation, eye irritation.

2.2. Label elements

Hazard pictogram



Signal word

Warning

Dangerous substance

Potassium nitrate
(EC: 231-818-8; CAS: 7757-79-1)

Hazard statements

H272 May intensify fire; oxidiser.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.

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P220 Keep away from clothing and other combustible materials.
P280 Wear protective gloves/eye protection/face protection.
P370+P378 In case of fire: Use powder extinguisher/sand/carbon dioxide to extinguish.
P501 Dispose of contents/container to by handing over to the person authorized to dispose of waste or by returning to the supplier.

2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 7757-79-1 EC: 231-818-8 Registration number: 01-2120104950-66-0000	substance main component Potassium nitrate	99-100	Ox. Sol. 3, H272	1

Notes

1 Explosive precursor

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

If on skin

Remove contaminated clothes. And wash it before reuse. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes. No neutralization should be performed in any case!

If swallowed

Rinse out the mouth with clean water. In the event of issues, find medical help.

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

If inhaled

May cause respiratory irritation.

If on skin

Possible irritation.

If in eyes

Possible irritation.

If swallowed

Not expected.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide sufficient ventilation. Do not inhale dust. Avoid dust formation. The substance is flammable. May intensify fire; oxidiser. Remove all ignition sources. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13. After removal of the product, wash the contaminated site with plenty of water.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

The product should be used only in the areas where it is not in contact with open fire and other ignition sources. Use of antistatic clothes and footwear is recommended. No smoking. Take any precaution to avoid mixing with combustibles. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight.

Storage class

5.1B - Oxidizing substances

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Not specified.

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8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. Do not eat, drink and smoke during work. Provide showers and eye wash possibility. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant to the product. EN ISO 374-1. Contaminated skin should be washed thoroughly.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Respirator.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	solid
Colour	white
Odour	without fragrance
Melting point/freezing point	335 °C
Boiling point or initial boiling point and boiling range	cannot be determined - decomposition occurs
Flammability	non-inflammable
Lower and upper explosion limit	not applicable
Flash point	not applicable
Auto-ignition temperature	not applicable
Decomposition temperature	400 °C
pH	5.5-7.5 (5% solution at 20 °C)
Kinematic viscosity	not applicable
Solubility in water	38.3g / 100g 25°C
Partition coefficient n-octanol/water (log value)	data not available
Vapour pressure	not applicable
Density and/or relative density	
Density	2.1 g/cm ³ at 25 °C
Relative vapour density	not applicable
Particle characteristics	data not available
Form	solid: crystalline, powder

9.2. Other information

Oxidising properties	The product has an oxidizing properties.
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SECTION 10: Stability and reactivity

10.1. Reactivity

The substance is oxidizing.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Oxidizing agent. Can cause a fire if in contact with flammable material.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use.

10.5. Incompatible materials

Increases the flammability of any combustible material.

10.6. Hazardous decomposition products

Not developed under normal uses. Nitrogen oxides, oxygen.

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SECTION 11: Toxicological information

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

No toxicological data is available for the substance.

Acute toxicity

Based on available data the classification criteria are not met.

Potassium nitrate						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD ₅₀	OECD 425	>2000 mg/kg bw		Rat (Rattus norvegicus)	F/M
Inhalation (dust/mist)	LC ₅₀	OECD 403	>0.527 mg/l of air	4 hours	Rat (Rattus norvegicus)	F/M
Dermal	LD ₅₀	OECD 402	>5000 mg/kg bw	24 hours	Rat (Rattus norvegicus)	F/M

Skin corrosion/irritation

Based on available data the classification criteria are not met.

Potassium nitrate				
Route of exposure	Result	Method	Exposure time	Species
	Not irritating	OECD 404	4 hours	Rabbit

Serious eye damage/irritation

Based on available data the classification criteria are not met.

Potassium nitrate				
Route of exposure	Result	Method	Exposure time	Species
Eye	Not irritating	OECD 405	1 day	Rabbit

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

Potassium nitrate					
Route of exposure	Result	Method	Exposure time	Species	Sex
Dermal	Not sensitizing	OECD 429	3 days	Mouse (lymphoma)	F

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Potassium nitrate					
Result	Method	Exposure time	Specific target organ	Species	Sex
Negative without metabolic activation	in vitro	48 hours	Lung fibroblast	Chinese hamster (Cricetulus barabensis)	
Negative	in vivo	10 weeks		Rat (Rattus norvegicus)	F/M

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Carcinogenicity

Based on available data the classification criteria are not met.

Potassium nitrate							
Route of exposure	Parameter	Method	Value	Exposure time	Result	Species	Sex
Oral (drinking water)	NOAEL (P/F ₁)	OECD 422	>1500 mg/kg bw/day	28 days (7 days/week)	No effect	Rat	F/M

Reproductive toxicity

No data available for the substance.

Toxicity for specific target organ - single exposure

No data available for the substance.

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

Repeated dose toxicity

Potassium nitrate							
Route of exposure	Parameter	Result	Method	Value	Exposure time	Species	Sex
Oral (drinking water)	NOAEL	No effect	OECD 422	>1500 mg/kg bw/day	28 days (7 days/week)	Rat (Rattus norvegicus)	F/M

Aspiration hazard

No data available for the substance.

11.2. Information on other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 12: Ecological information

12.1. Toxicity

Based on available data the classification criteria are not met.

Acute toxicity

Potassium nitrate					
Parameter	Method	Value	Exposure time	Species	Environment
LC ₅₀	OECD 203	>100 mg/l	96 hours	Fish (Oncorhynchus mykiss)	Fresh water
EC ₅₀		490 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water
EC ₅₀		1700 mg/l	10 days	Algae and other aquatic plants	Salt water
EC ₅₀	OECD 209	1000 mg/l	3 hours	Microorganisms	Activated sludge
EC ₅₀	OECD 209	1000 mg/l	3 hours	Microorganisms (Photobacterium phosphoreum)	Activated sludge

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Chronic toxicity

Potassium nitrate				
Parameter	Value	Exposure time	Species	Environment
NOEC	157 mg/l	32 days	Fish (Pimephales promelas)	Fresh water
NOEC	245-408 mg/l	12 days	Aquatic invertebrates	

12.2. Persistence and degradability

No data available for the substance.

12.3. Bioaccumulative potential

No data available for the substance.

12.4. Mobility in soil

No data available for the substance.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

Waste type code

06 10 02* wastes containing hazardous substances

Packaging waste type code

06 10 00 wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture (*) - Hazardous waste according to Directive 2008/98/EC on hazardous waste

SECTION 14: Transport information

14.1. UN number or ID number

UN 1486

14.2. UN proper shipping name

POTASSIUM NITRATE

14.3. Transport hazard class(es)

5.1 Oxidizing substances

14.4. Packing group

III

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

Reference in the Sections 4 to 8.

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14.7. Maritime transport in bulk according to IMO instruments

not relevant

Additional information

Hazard identification No.

50

UN number

1486

Classification code

O2

Safety signs

5.1



Road transport - ADR

Limited quantities

5 kg

Excepted quantities

E1

Packaging

Packing instructions

P002, IBC08, LP02, R001

Special packing provisions

B3

Mixed packing provisions

MP10

Portable tanks and bulk containers

Guidelines

T1, BK1, BK2, BK3

Special provisions

TP33

ADR tank

Tank code

SGAV

Special provisions

TU3

Vehicles for tank carriage

AT

Transport category

3

Tunnel restriction code

(E)

Special provision for

bulk

VC1, VC2, AP6, AP7

loading, unloading and handling

CV24

Railway transport - RID

Excepted quantities

E1

Packaging

Packing instructions

P002, IBC08, LP02, R001

Special packing provisions

B3

Mixed packing provisions

MP10

Portable tanks and bulk containers

Guidelines

T1, BK1, BK2, BK3

Special provisions

TP33

RID Tanks

Tank code

SGAV

Special provisions

TU3

Transport category

0

Special provision for

bulk

VC1, VC2, AP6, AP7

loading, unloading and handling

CW24

Air transport - ICAO/IATA

Packaging instructions for limited amount

Y546

Packaging instructions passenger

559

Cargo packaging instructions

563

Marine transport - IMDG

EmS (emergency plan)

F-A, S-Q

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SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the 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, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Product contains reportable explosives precursors: Reporting of suspicious transactions, disappearances and thefts according to Regulation (EU) 2019/1148, Article 9. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H272 May intensify fire; oxidiser.

Guidelines for safe handling used in the safety data sheet

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.

P280 Wear protective gloves/eye protection/face protection.

P370+P378 In case of fire: Use powder extinguisher/sand/carbon dioxide to extinguish.

P501 Dispose of contents/container to by handing over to the person authorized to dispose of waste or by returning to the supplier.

Other important information about human health protection

The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC ₅₀	Concentration of a substance when it is affected 50 % of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD ₅₀	Lethal dose of a substance in which it can be expected death of 50% of the population
log K _{ow}	Octanol-water partition coefficient
NOAEL	No observed adverse effect level

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NOEC	No observed effect concentration
OEL	Occupational Exposure Limits
Ox. Sol.	Oxidising solid
PBT	Persistent, bioaccumulative and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

The version 1.3 replaces the SDS version from Monday, 4 September 2023. Changes were made in sections 1, 11, 12 and 16.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.