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

1.1 Product identifier

Identification of the substance	**Potassium nitrate**
Article number	8001
Registration number (REACH)	01-2119488224-35-xxxx
EC number	231-818-8
CAS number	7757-79-1

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

Relevant identified uses	laboratory chemical

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet	: Abteilung Arbeitssicherheit
e-mail (competent person)	**: sicherheit@carlroth.de**

1.4 Emergency telephone number

Emergency information service	**Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Classification acc. to GHS

Section	Hazard class	Hazard class and category	Hazard statement
2.14	oxidising solids	(Ox. Sol. 3)	H272

2.2 Label elements

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

Signal word **Warning**

Pictograms

Hazard statements

H272 May intensify fire; oxidiser.

Precautionary statements

Precautionary statements - prevention

P221 Take any precaution to avoid mixing with combustibles.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Warning**

Symbol(s)

2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Potassium nitrate
Registration number (REACH)	01-2119488224-35-xxxx
EC number	231-818-8
CAS number	7757-79-1
Molecular formula	KNO_3
Molar mass	101.1 $^{g}/_{mol}$

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Wash with plenty of soap and water. In case of skin irritation, consult a physician.

Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion

Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Gastrointestinal complaints, Nausea, Irritant effects, Vomiting

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Oxidising property. Non-combustible.

Hazardous combustion products

In case of fire may be liberated: nitrogen oxides (NOx)

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Advices on how to clean up a spill

Take up mechanically. Control of dust. Keep wetted with water.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid generation of dust.

• Measures to prevent fire as well as aerosol and dust generation

Keep away from sources of ignition - No smoking.

Removal of dust deposits. Take any precaution to avoid mixing with combustibles.

Advice on general occupational hygiene

Do not to eat, drink and smoke in work areas. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

Not required.

- **Ventilation requirements**

Use local and general ventilation.

- **Specific designs for storage rooms or vessels**

Recommended storage temperature: 15 - 25 °C.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

not relevant

Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Source
UK	dust		i	WEL		10			EH40/2005
UK	dust		r	WEL		4			EH40/2005

Notation

i	Inhalable fraction
r	Respirable fraction
STEL	Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified
TWA	Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Relevant DNELs/DMELs/PNECs and other threshold levels

- **human health values**

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	20.8 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
DNEL	36.7 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects

- **environmental values**

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	0.45 mg/l	freshwater	short-term (single instance)
PNEC	0.045 mg/l	marine water	short-term (single instance)
PNEC	18 mg/l	sewage treatment plant (STP)	short-term (single instance)
PNEC	4.5 mg/l	water	continuous

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm.

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White). Respiratory protection necessary at:Dust formation. Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	solid
Colour	colourless
Odour	odourless
Odour threshold	No data available

Other physical and chemical parameters

pH (value)	5 - 8 in 50 $^{g}/_{l}$ water at 20 °C
Melting point/freezing point	334 °C
Initial boiling point and boiling range	This information is not available.

Flash point	not applicable
Evaporation rate	no data available
Flammability (solid, gas)	Non-flammable
Explosive limits	
• lower explosion limit (LEL)	this information is not available
• upper explosion limit (UEL)	this information is not available
Explosion limits of dust clouds	these information are not available
Vapour pressure	This information is not available.
Density	2.109 $^{g}/_{cm^3}$
Vapour density	This information is not available.
Bulk density	800 $^{kg}/_{m^3}$
Relative density	Information on this property is not available.
Solubility(ies)	
Water solubility	320 $^{g}/_{l}$ at 20 °C
Partition coefficient	
n-octanol/water (log KOW)	This information is not available.
Auto-ignition temperature	Information on this property is not available.
Viscosity	not relevant (solid matter)
Explosive properties	none
Oxidising properties	oxidiser

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

oxidising property

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Danger of explosion: Fluorine, Magnesium, Metal powder, Peroxide, Boron, Sulphur, Cyanides, Carbon, Phosphorus

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Exposure route	Endpoint	Value	Species	Source
oral	LD50	>2000 $^{mg}/_{kg}$	rat	ECHA
dermal	LD50	>5000 $^{mg}/_{kg}$	rat	ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes slight to moderate irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant.

• Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

diarrhoea, vomiting, nausea

• If inhaled

headache, Dyspnoea, Inhalation of dust may cause irritation of the respiratory system, Cyanosis (blue coloured blood)

• If on skin

data are not available

Other information

None.

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	1,378 mg/l	fish	ECHA	96 hours
EC50	490 mg/l	aquatic invertebrates	ECHA	48 hours

Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
EC50	490 mg/l	aquatic invertebrates	ECHA	24 h
ErC50	>1,700 mg/l	algae	ECHA	10 d

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Slightly hazardous to water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulation.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	UN number	**1486**
14.2	UN proper shipping name	**POTASSIUM NITRATE**
	Hazardous ingredients	Potassium nitrate
14.3	Transport hazard class(es)	
	Class	5.1 (oxidizing substances)
14.4	Packing group	III (substance presenting low danger)
14.5	Environmental hazards	none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	1486
Proper shipping name	POTASSIUM NITRATE
Particulars in the transport document	UN1486, POTASSIUM NITRATE, 5.1, III, (E)
Class	5.1

Classification code	O2
Packing group	III
Danger label(s)	5.1

Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
Transport category (TC)	3
Tunnel restriction code (TRC)	E
Hazard identification No	50

• International Maritime Dangerous Goods Code (IMDG)

UN number	1486
Proper shipping name	POTASSIUM NITRATE
Particulars in the shipper's declaration	UN1486, POTASSIUM NITRATE, 5.1, III
Class	5.1
Packing group	III
Danger label(s)	5.1

Special provisions (SP)	964, 967
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
EmS	F-A, S-Q
Stowage category	A

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

• Restrictions according to REACH, Annex XVII

None of the ingredients are listed.

• List of substances subject to authorisation (REACH, Annex XIV)

None of the ingredients are listed.

• Seveso Directive

96/82/EC (Seveso II)

No	Dangerous substance/hazard categories	Qualifying quantity (tonnes)		Notes
39.1	potassium nitrate	5,000	10,000	

2012/18/EU (Seveso III)

No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements		Notes
05	potassium nitrate	5,000	10,000	

National inventories

Substance is listed in the following national inventories:

- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EH40/2005	EH40/2005 Workplace exposure limits, Table 1: List of approved workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances

Abbr.	Descriptions of used abbreviations
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
vPvB	very Persistent and very Bioaccumulative

Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 453/2010/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H272	may intensify fire; oxidiser

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.