

Potassium chlorate v.p.

Revision: 18.03.2025

Product code: AC14.00488

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Potassium chlorate v.p.

REACH Registration Number: 01-2119494917-18-XXXX
CAS No: 3811-04-9
Index No: 017-004-00-3
EC No: 223-289-7

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

Reagents and laboratory chemicals
Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet**Details of the supplier of the safety data sheet**

Company name: AnalytiChem Services, Unipessoal, Lda
Street: Rua de Júlio Dinis 676 7º
Place: N-4050-320 Porto
Telephone: +351 226002917
E-mail: info@analytichem.com
Contact person: SDS service department
E-mail: SDS@analytichem.com
Internet: www.analytichem.com
Responsible Department: SDS service department

Supplier or manufacturer details

Company name: AnalytiChem Belgium NV
Street: Industriezone "De Arend" 2
Place: B-8210 Zedelgem
Telephone: +32 50 28 83 20
E-mail: info.be@analytichem.com
Contact person: SDS service department
E-mail: SDS@analytichem.com
Responsible Department: AnalytiChem:
EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20
EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200
EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848
UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500
USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378
Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701
Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333
+44 20 3807 3798 (CHEMTREC)

1.4. Emergency telephone number:

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Further Information

No data available

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Ox. Sol. 1; H271

Acute Tox. 3; H301

Full text of hazard statements: see SECTION 16.

2.2. Label elements**Regulation (EC) No 1272/2008****Signal word:** Danger**Pictograms:****Hazard statements**

H271 May cause fire or explosion; strong oxidiser.

H301 Toxic if swallowed.

Precautionary 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.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P371+P380+P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients**3.1. Substances**Sum formula: KClO₃

Molecular weight: 122,55 g/mol

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
3811-04-9	potassium chlorate			100 %
	223-289-7	017-004-00-3	01-2119494917-18-XXXX	
	Ox. Sol. 1, Acute Tox. 3; H271 H301			

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

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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
3811-04-9	223-289-7	potassium chlorate	100 %
		inhalation: LC50 = > 5,1 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: ATE 100 mg/kg	

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

No data available

After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.

In case of eye irritation consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Irritant

Cough, Dyspnoea

Cyanosis (blue coloured blood)

Headache

Vomiting

Gastrointestinal complaints

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

No data available

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible solids

Decomposition with: Danger of explosion

Oxidizing

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Hazardous combustion products
In case of fire may be liberated:
Hydrogen chloride (HCl)
Handle with care - avoid bumps, friction and impact.

5.3. Advice for firefighters

Do not inhale explosion and combustion gases.
Avoid contact with skin, eyes and clothes.
In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Do not breathe dust.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Consult an expert
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up**For containment**

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Collect in closed and suitable containers for disposal.
Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

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Advice on safe handling

Handle and open container with care.
Provide adequate ventilation.
Avoid contact with skin, eyes and clothes.
Avoid dust formation. Do not breathe dust.
Handle with care - avoid bumps, friction and impact.

Advice on protection against fire and explosion

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

Advice on general occupational hygiene

Take off contaminated clothing.
Wash hands before breaks and after work.
When using do not eat or drink.

Further information on handling

Draw up and observe skin protection programme.
Take off contaminated clothing and wash it before reuse.
Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed and dry.
Keep away from combustible material.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Take national regulations into account.

Further information on storage conditions

storage temperature +5°C - +30°C

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****DNEL/DMEL values**

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
3811-04-9	potassium chlorate			
Consumer DNEL, long-term		inhalation	systemic	0,3 mg/m³
Consumer DNEL, long-term		dermal	systemic	0,13 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	0,7 mg/m³
Worker DNEL, long-term		dermal	systemic	5 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,05 mg/kg bw/day

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PNEC values

CAS No	Substance	
Environmental compartment		Value
3811-04-9	potassium chlorate	
Freshwater		1,15 mg/l
Marine water		1,15 mg/l
Freshwater sediment		4,14 mg/kg
Marine sediment		4,14 mg/kg
Secondary poisoning		12,78 mg/kg
Micro-organisms in sewage treatment plants (STP)		115 mg/l
Soil		3,83 mg/kg

8.2. Exposure controls**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Suitable eye protection: goggles.

Hand protection

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact

Recommended glove articles KCL 741 Dermatril® L

Suitable material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Recommended glove articles KCL 741 Dermatril® L

Suitable material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: B-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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Thermal hazards

No data available

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	solid
Colour:	white
Odour:	odourless
Odour threshold:	No data available
Melting point/freezing point:	356 °C
Boiling point or initial boiling point and boiling range:	400 °C
Flammability:	not determined
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	X
Auto-ignition temperature:	No data available
Decomposition temperature:	>400 °C
pH-Value (at 20 °C):	~ 5,6 (73 g/l)
Viscosity / kinematic:	No data available
Water solubility: (at 20 °C)	73 g/l
Solubility in other solvents	not determined
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	not determined
Dispersion stability:	No data available
Vapour pressure:	No data available
Vapour pressure:	No data available
Density:	2,34 g/cm ³
Relative density:	No data available
Bulk density:	~ 1200 - 1400 kg/m ³
Relative vapour density:	not determined
Particle characteristics:	No data available

9.2. Other information**Information with regard to physical hazard classes**

Explosive properties

No data available

Sustained combustibility:

No data available

Self-ignition temperature

Solid:

not determined

Gas:

not applicable

Oxidizing properties

The product is: oxidising, Oxidising.

Other safety characteristics

Evaporation rate:

not determined

Solvent separation test:

No data available

Solvent content:

0%

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Solid content:	100%
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
Viscosity / dynamic:	No data available
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Possibility of hazardous reactions. oxidising, Oxidising.
Handle with care - avoid bumps, friction and impact.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Metal powder, Combustible substance, arsenic
resin, sulphuric acid, Alcohols
Hydrocarbons, Reducing agent, White/yellow phosphor
Fluorine, Alkali metals, Nitric acid
Ammonia (NH₃), Sulphur dioxide (SO₂), Hydrogen iodide (HI)

10.4. Conditions to avoid

Handle with care - avoid bumps, friction and impact.
Heat

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire may be liberated:
SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information**11.1. Information on hazard classes****Toxicokinetics, metabolism and distribution**

No data available

Acute toxicity

Toxic if swallowed.
Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
3811-04-9	potassium chlorate				
	oral	ATE 100 mg/kg			
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (1991)	EPA OPP 81-2
	inhalation (4 h) dust/mist	LC50 > 5,1 mg/l	Rat	Study report (2010)	OECD Guideline 436

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Upon skin contact: slight irritation.

In case of eye contact: mild irritation.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards**Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

Other information

Liver and kidney damage

Further information

Irritant

Cough, Dyspnoea

Cyanosis (blue coloured blood)

Headache

Vomiting

Gastrointestinal complaints

SECTION 12: Ecological information

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12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
3811-04-9	potassium chlorate					
	Acute fish toxicity	LC50 > 1000 mg/l	96 h	Oncorhynchus mykiss	REACH Registration Dossier	EPA OPP 72-1
	Acute algae toxicity	ErC50 1,9 mg/l	72 h	other algae: Nitzschia closterium	REACH Registration Dossier	other: Standard 72h growth inhibition bi
	Acute crustacea toxicity	EC50 > 1151 mg/l	48 h	Daphnia magna	REACH Registration Dossier	EPA OPP 72-2
	Fish toxicity	NOEC >= 500 mg/l	36 d	Danio rerio	REACH Registration Dossier	OECD Guideline 210
	Crustacea toxicity	NOEC >= 575 mg/l	21 d	Daphnia magna	REACH Registration Dossier	OECD Guideline 211
	Acute bacteria toxicity	EC50 > 1151 mg/l ()	3 h	activated sludge, domestic	REACH Registration Dossier	OECD Guideline 209

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
3811-04-9	potassium chlorate	< -2,9

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

No data available

Further information

Avoid release to the environment.

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Do not allow to enter into surface water or drains.

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Do not mix with other wastes.

Send to a physico-chemical treatment facility under observation of official regulations.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

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

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID number:	UN 1485
14.2. UN proper shipping name:	POTASSIUM CHLORATE
14.3. Transport hazard class(es):	5.1
14.4. Packing group:	II
Hazard label:	5.1
Classification code:	O2
Limited quantity:	1 kg
Excepted quantity:	E2
Transport category:	2
Hazard No:	50
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 1485
14.2. UN proper shipping name:	POTASSIUM CHLORATE
14.3. Transport hazard class(es):	5.1
14.4. Packing group:	II
Hazard label:	5.1
Classification code:	O2
Limited quantity:	1 kg
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 1485
14.2. UN proper shipping name:	POTASSIUM CHLORATE
14.3. Transport hazard class(es):	5.1
14.4. Packing group:	II
Hazard label:	5.1
Special Provisions:	-
Limited quantity:	1 kg
Excepted quantity:	E2
EmS:	F-H, S-Q

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1485
14.2. UN proper shipping name:	POTASSIUM CHLORATE
14.3. Transport hazard class(es):	5.1
14.4. Packing group:	II
Hazard label:	5.1
Limited quantity Passenger:	2.5 kg
Passenger LQ:	Y544
Excepted quantity:	E2
IATA-packing instructions - Passenger:	558
IATA-max. quantity - Passenger:	5 kg
IATA-packing instructions - Cargo:	562

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IATA-max. quantity - Cargo:

25 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Oxidising substances.

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 regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to Directive

P8 OXIDISING LIQUIDS AND SOLIDS

2012/18/EU (SEVESO III):

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,6,8,9,11,14,15.

Abbreviations and acronyms

Ox. Sol. 1: Oxidising solids, hazard category 1

Acute Tox. 3: Acute toxicity, hazard category 3

ADR: Accord européen sur le transport des marchandises dangereuses par Route

(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H271 May cause fire or explosion; strong oxidiser.

H301 Toxic if swallowed.