CATO Research Chemicals Inc.
3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Web: www.cato-chem.com
Tel: +86-20-81960175 Fax: +86-20-81717260 E-mail: info@cato-chem.com

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: April 15, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Potassium Nitrate Solution Certified Reference Material

1.2 Other means of identification

Product number CPRM2820
Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Oxidizing solids, Category 3

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Warning
Hazard statement(s) H272 May intensify fire; oxidizer
Precautionary statement(s)
Prevention 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/protective clothing/eye protection/face protection/hearing protection/...
Response P370+P378 In case of fire: Use ... to extinguish.
Storage none
Disposal P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Potassium Nitrate Solution Certified Reference Material	Potassium nitrate	7757-79-1	231-818-8	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Exposure can cause mild irritation of eyes, nose and throat. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Maintain an open airway and assist ventilation if necessary. Administer supplemental oxygen. Treat hypotension with supine positioning, intravenous crystalloid fluids, and a low dose -pressor if needed. Monitor vital signs and ECG for 4 to 6 hours. Symptomatic methemoglobinemia may be treated with methylene blue. ... Administer activated charcoal. Gastric emptying is not necessary for small ingestions if activated charcoal can be given promptly . Hemodialysis and hemoperfusion are not effective. Severe methemoglobinemia in infants not responsive to methylene blue therapy may require exchange transfusion. Nitrates and Nitrites

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material on fire or involved in fire: Flood with water. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: May produce toxic nitrogen oxides upon decomposition. Behavior in Fire: Strong oxidizer which may react explosively when mixed with reducing agents. Mixture may detonate by heat or shock. Increases the flammability of any combustible material. (USCG, 1999)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Sweep spilled substance into plastic or glass containers. Wash away remainder with plenty of water.

6.2 Environmental precautions

Sweep spilled substance into plastic or glass containers. Wash away remainder with plenty of water.

6.3 Methods and materials for containment and cleaning up

Sweep spilled substance into plastic or glass containers. Wash away remainder with plenty of water.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO contact with combustible substances or reducing agents. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from combustible substances and reducing agents.Separated from combustible and reducing substances.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	Potassium nitrate			
CAS No.	7757-79-1			
	Limit value - Eight hours		**Limit value - Short term**	
	ppm	**mg/m^3**	**ppm**	**mg/m^3**
Latvia		5		

Component	Potassium nitrate
CAS No.	7757-79-1
	Remarks

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Potassium nitrate is a white to dirty gray crystalline solid. Water soluble. Noncombustible, but accelerates the burning of combustible materials. If large quantities are involved in fire or the combustible material is finely divided an explosion may result. May explode under prolonged exposure to heat or fire. Toxic oxides of nitrogen are produced in fires. Used in solid propellants, explosives, fertilizers.
Colour	Colorless, rhombic or trigonal crystals
Odour	Odorless
Melting point/freezing point	334°C
Boiling point or initial boiling point and boiling range	400°C
Flammability	Not combustible but enhances combustion of other substances. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	400°C
Auto-ignition temperature	no data available
Decomposition temperature	400°C
pH	4,5-8,5 (5 % solution)
Kinematic viscosity	no data available
Solubility	Sol in water, glycerol; slightly sol in alcohol
Partition coefficient n-octanol/water	no data available
Vapour pressure	no data available
Density and/or relative density	2.109
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on heating. This increases fire hazard. The substance is a strong oxidant. It reacts with combustible and reducing materials.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Not combustible but enhances combustion of other substances ... Risk of fire and explosion on contact with reducing agents.POTASSIUM NITRATE mixed with alkyl esters may explode, owing to the formation of alkyl nitrates; mixtures with phosphorus, tin (II) chloride, or other reducing agents may react explosively [Bretherick 1979. p. 108-109]. Powdered antimony mixed with potassium nitrate explodes when heated [Mellor 9:282 1946-47]. A mixture of antimony trisulfide and potassium nitrate explodes at a red heat [Mellor 9:524. 1946-47]. Arsenic disulfide forms explosive mixtures when mixed with potassium nitrate, [Mellor 9:270.1946-47]. A mixture of sodium acetate

and potassium nitrate may cause an explosion [Pieters 1957. p. 30]. A mixture of potassium nitrate and sodium hypophosphite constitutes a powerful explosive [Mellor 8:881. 1946-47]. A mixture of powdered zirconium and potassium nitrate explodes when heated above the melting point [Mellor 7:116. 1946-47].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

A micro Parr calorimeter exploded when the wrong proportions of these ingredients were used. The intended mixture was 4.0 g sodium peroxide, 0.2 g dextrose, and 0.2 g potassium nitrate; actual proportions were 0.35 g, 2.59 g, and 0.2 g respectively. There was insufficient sodium peroxide to dissolve decomposition gases, hence a rapid temp and pressure build-up caused the Parr bomv to burst.

10.6 Hazardous decomposition products

When heated to decomp it emits very toxic fumes of /nitrogen oxides & dipotassium oxide/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rabbit oral 1901 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. Ingestion could cause effects on the blood. This may result in the formation of methaemoglobin. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

no data available

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill); Conditions: freshwater; static; Concentration: 5500 mg/L for 24 hr /total
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water flea); Conditions: freshwater; static; Concentration: 900 mg/L for 4.2 days /total
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1486 (For reference only, please check.) IMDG: UN1486 (For reference only, please check.) IATA: UN1486 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: POTASSIUM NITRATE (For reference only, please check.) IMDG: POTASSIUM NITRATE (For reference only, please check.) IATA: POTASSIUM NITRATE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.) IMDG: 5.1 (For reference only, please check.) IATA: 5.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.) IMDG: III (For reference only, please check.) IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Potassium nitrate	Potassium nitrate	7757-79-1	231-818-8
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	April 15, 2024

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Rinse contaminated clothing with plenty of water because of fire hazard.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

---

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.