Potassium nitrate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/25/2018 Revision date: 10/25/2018 Supersedes: 09/14/2018 Version: 7.2

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Trade name	:	Potassium nitrate
CAS-No.	:	7757-79-1
Product code	:	001_USA
Formula	:	HNO3.K
Synonyms	:	Nitric acid potassium salt / Nitric acid, potassium salt / Nitric acid potassium salt (1:1) / POTASSIUM NITRATE / Potassiumnitrate
Other means of identification	:	Potassium Nitrate Refined Grade - Prilled Potassium Nitrate Refined Grade - Crystallized Potassium Nitrate Technical Application - Crystallized Potassium Nitrate Technical Grade - Crystallized Potassium Nitrate Fertigation Grade - Crystallized Potassium Nitrate Hydroponical Grade - Crystallized Potassium Nitrate Technical Grade - Prilled Krista K

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Industrial uses: Uses of substances as such or in preparations at industrial sites Industrial use resulting in manufacture of another substance (use of intermediates) Heat transferring agents Fertilizers
Restrictions on use	:	Food/feedstuff additives, Water treatment chemicals

1.3. Supplier

Supplier
SQM North America
2727 Paces Ferry Rd, Building Two, Suite 1425
Atlanta, GA 30339 - United States
T (770) 916 9400 - F (700) 916 9404
product_safety@sqm.com – spn-northamerica@sqm.com - www.sqm.com

1.4. Emergency telephone number

Emergency number	:	For Chemical Emergency Call CHEMTREC 24hr/day 7days/week Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Oxidizing solids Category 3 May intensify fire; oxidizer

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US)	:	Warning
Hazard statements (GHS US)	:	May intensify fire; oxidizer
Precautionary statements (GHS US)	:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat Keep/Store away from clothing, combustible materials, flammable materials, reducing materials, strong acids Take any precaution to avoid mixing with clothing, combustible materials, flammable materials, reducing materials, strong acids

Wear protective gloves, eye protection, face protection.
In case of fire: Use use any suitable mean for extinguishing surrounding fire. Spray water for small fires. For large fires flood with abundant water. to extinguish.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name : Potassium nitrate
CAS-No. : 7757-79-1

Name	Product identifier	%	GHS US classification
Potassium nitrate	(CAS-No.) 7757-79-1	> 94	Ox. Sol. 3, H272
Nitrite		<= 0.3	Not classified
Perchlorate		<= 0.01	Not classified
Iodate		<= 0.01	Not classified

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell. Never give anything by mouth to an unconscious person.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.
First-aid measures after skin contact : Wash skin with plenty of water. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Rinse mouth. Drink plenty of water. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Irritation of the respiratory tract. Thermal decomposition can lead to the release of irritating gases and vapors. Delayed adverse effects possible.
Symptoms/effects after skin contact : May cause moderate irritation.
Symptoms/effects after eye contact : May cause slight irritation.
Symptoms/effects after ingestion : On ingestion in large quantities: Digestive disorder.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : use any suitable mean for extinguishing surrounding fire. Spray water for small fires. For large fires flood with abundant water.
Unsuitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Specific hazards arising from the chemical

Fire hazard : May intensify fire; oxidizer.
Reactivity : The product is non-reactive under normal conditions of use, storage and transport. May intensify fire; oxidizer.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Do not approach fire except upwind and only with proper skin and respiratory protection (supplied air only).
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Thermal decomposition can lead to the release of irritating gases and vapors. Thermal decomposition generates : Nitrogen oxides. Potassium oxide. potassium nitrite.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Do not allow into drains or water courses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters. Do not absorb with saw-dust or any other combustible absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and section 15 for more information regarding California State regulations.

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Containers which are opened should be properly resealed and kept upright to prevent leakage.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources, flames or sparks.

Incompatible materials : Flammable or combustible materials. Reducing agents. strong acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Potassium nitrate (7757-79-1)		
ACGIH	ACGIH TWA (mg/m³)	Not established
ACGIH	ACGIH Ceiling (mg/m³)	Not established
OSHA	OSHA PEL (STEL) (mg/m³)	Not established
OSHA	OSHA PEL (Ceiling) (mg/m³)	Not established

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station. Local exhaust is recommended where dust may occur.

Environmental exposure controls : Do not allow to enter drains or water courses.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Butyl-rubber protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystals. Granulate.
Color	:	White
Odor	:	odorless
Odor threshold	:	Not applicable
pH	:	8 - 11
Melting point	:	335 °C / 635°F (Published data)
Freezing point	:	Not applicable
Boiling point	:	Not applicable
Flash point	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	Not applicable
Flammability (solid, gas)	:	Non flammable.
Vapor pressure	:	Negligible vapor pressure at ambient conditions
Vapor pressure at 50 °C	:	Not applicable
Relative vapor density at 20 °C	:	No data available
Relative density	:	Not applicable
Specific gravity / density	:	1160 - 1300 kg/m³ at 68°F
Solubility	:	Water: > 100 g/l 25°C / 77°F
Log Pow	:	Not applicable Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	> 600 °C / 1112°F (Published data)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	Not applicable
Explosion limits	:	Not applicable
Explosive properties	:	Not explosive.
Oxidizing properties	:	Oxidizer. Test O.1 Test for oxidizing solids.

9.2. Other information

Bulk density : 1100 - 1400 kg/m³

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. May intensify fire; oxidizer.

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with : hot surfaces. flames or sparks. Ignition sources. Do not store together with empty wood pallets.

10.5. Incompatible materials

Flammable, combustible, strong acids and strong reducing agents under specific conditions. These incompatible materials shall not include approved packaging materials, pallets, or other dunnage (NFPA 400/2016, Hazardous Materials Code, item 15.3.5.2.1.1).

10.6. Hazardous decomposition products

Thermal decomposition can lead to the release of irritating gases and vapors. Thermal decomposition generates : Nitrogen oxides. Potassium oxides. potassium nitrite.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Potassium nitrate (7757-79-1)	
LD50 oral rat	> 2000 mg/kg body weight (OECD 405 method)
LD50 dermal rat	> 5000 mg/kg body weight (OECD 402 method)
LC50 inhalation rat (mg/l)	> 0.527 mg/l/4h (OECD 403 method)

Skin corrosion/irritation : Not classified
pH: 8 - 11

Serious eye damage/irritation : Not classified
pH: 8 - 11

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified (No mutagenic effect. Reverse Mutation Assays. (OECD 479 method))

Carcinogenicity : Not classified (No carcinogenic effect)

Potassium nitrate (7757-79-1)	
IARC group	Not listed
National Toxicology Program (NTP) Status	Not listed

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Potassium nitrate (7757-79-1)	
NOAEL (subacute,oral,animal/male,28 days)	1500 mg/kg body weight (OECD 422 method)
NOAEL (subacute,oral,animal/female,28 days)	1500 mg/kg body weight

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Likely routes of exposure : Inhalation. Skin and eye contact.

Symptoms/effects after inhalation : Irritation of the respiratory tract. Thermal decomposition can lead to the release of irritating gases and vapors. Delayed adverse effects possible.

Symptoms/effects after skin contact : May cause moderate irritation.

Symptoms/effects after eye contact : May cause slight irritation.

Symptoms/effects after ingestion : On ingestion in large quantities: Digestive disorder.

Other information : This product contains trace amounts of naturally-occurring perchlorate and iodate. Like other goitrogenic substances, perchlorate may affect iodine uptake by thyroid under specific conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Potassium nitrate (7757-79-1)	
LC50 fish 1	>= 1378 mg/l
EC50 Daphnia 1	>= 490 mg/l
ErC50 (algae)	> 1700 mg/l
NOEC chronic fish	58 mg/l
NOEC chronic algae	1700 mg/l

12.2. Persistence and degradability

Potassium nitrate (7757-79-1)	
Persistence and degradability	Contains no substances known to be hazardous to the environment.

12.3. Bioaccumulative potential

Potassium nitrate (7757-79-1)	
Log Pow	Not applicable
Log Kow	Not applicable
Bioaccumulative potential	Low bioaccumulation potential. Information on basic physical and chemical properties.

12.4. Mobility in soil

Potassium nitrate (7757-79-1)	
Ecology - soil	Expected to be highly mobile in soil.

12.5. Other adverse effects

Other information : May cause eutrophication at very low concentration.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents.

Waste treatment methods : Gather the product and place it in a spare container that has been suitably labeled. This material and its container must be disposed of as hazardous waste. Solid waste exhibiting the characteristic of ignitability has the EPA Hazardous Waste Number of D001 according to the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Additional information : Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and section 15 for more information regarding California State regulations.

Ecology - waste materials : Do not allow to enter drains or water courses.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1486 Potassium nitrate, 5.1, III

UN-No.(DOT) : UN1486

Proper Shipping Name (DOT) : Potassium nitrate

Class (DOT) : 5.1 - Class 5.1 - Oxidizer 49 CFR 173.128

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT) : 5.1 - Oxidizer

DOT Packaging Non Bulk (49 CFR 173.xxx) : 213

DOT Packaging Bulk (49 CFR 173.xxx) : 240

DOT Special Provisions (49 CFR 172.102)	:	A1 - Single packaging are not permitted on passenger aircraft. A29 - Combination packaging consisting of outer expanded plastic boxes with inner plastic bags are not authorized for transportation by aircraft. B120 - The use of flexible bulk containers conforming to the requirements in subpart R and subpart S of part 178 of this subchapter is permitted. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter. W1 - This substance in a non friable prill or granule form is not subject to the requirements of this subchapter when tested in accordance with the UN Manual of Test and Criteria (IBR, see §171.7 of this subchapter) and is found to not meet the definition or criteria for inclusion in Division 5.1.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	152
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	25 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	100 kg
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
Emergency Response Guide (ERG) Number	:	140
Other information	:	None.
Special transport precautions	:	None known.
IBC code	:	Not applicable.

Transport by sea

Transport document description (IMDG)	:	UN 1486 POTASSIUM NITRATE, 5.1, III
UN-No. (IMDG)	:	1486
Proper Shipping Name (IMDG)	:	POTASSIUM NITRATE
Class (IMDG)	:	5.1 - Oxidizing substances
Packing group (IMDG)	:	III - substances presenting low danger

Air transport

Transport document description (IATA)	:	UN 1486 Potassium nitrate, 5.1, III
UN-No. (IATA)	:	1486
Proper Shipping Name (IATA)	:	Potassium nitrate
Class (IATA)	:	5.1 - Oxidizing Substances
Packing group (IATA)	:	III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Potassium nitrate (7757-79-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed in DHS (Department of Homeland Security) United States - Chemical of Interest (Apendix A to 6CFR part 27)	
SARA Section 311/312 Hazard Classes	Physical hazard - Oxidizer (liquid, solid or gas)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Perchlorate	CAS-No.	<= 0.01%
Iodate	CAS-No.	<= 0.01%
Nitrite	CAS-No.	<= 0.3%

15.2. International regulations

CANADA

Potassium nitrate (7757-79-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Potassium nitrate (7757-79-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)- Directive 79/831/EEC, sixth Amendment of Directive 67/548/EEC (dangerous substances)

National regulations

Potassium nitrate (7757-79-1)
Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on KECI (Korean Existing Chemicals Inventory) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/25/2018

Data sources : REACH registrations. Information in this safety data sheet is based on actual knowledge in our possession and our experience.

Other information : California Code of Regulations Title 22 (Health & Safety Code), Chapter 33 : See http://www.dtsc.ca.gov/hazardouswaste/perchlorate/.

Full text of H-phrases:

H272	May intensify fire; oxidizer

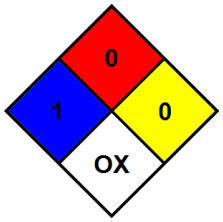
NFPA 704/2017

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

NFPA specific hazard : OX - Materials that posses oxidizing properties.



NFPA 400/2016: Hazardous Materials Code: Oxidizer Class 1 (Inorganics Nitrates).

Indication of changes:

Section	Changed item	Change	Comments
	This sheet has been revised completely (changes were not marked)		
1	Product name - Trade name	Added	
8	DNEL/DMEL (Workers)	Removed	

9	Bulk density	Added	
12.	Chronic toxicity	Added	
16	NFPA (National Fire Protection Association)	Added	NFPA 400: Hazardous Materials Code classification inlcuded

SDS US (GHS HazCom 2012)

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