

Material Safety Data Sheet

Potassium Nitrate

ACC# 19470

Section 1 - Chemical Product and Company Identification

MSDS Name: Potassium Nitrate

Catalog Numbers: S73066, S77585, S77588, S77588-2, BP368-500, NC9613818, P261-3, P263-100, P263-3, P263-50, P263-500, P263-50KG, P383-100, P383-500

Synonyms: Nitric acid potassium salt; Niter; Saltpeter.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7757-79-1	Potassium nitrate	100	231-818-8

Hazard Symbols: O

Risk Phrases: 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white. **Danger!** Strong oxidizer. Contact with other material may cause a fire. May cause respiratory tract irritation. May cause eye and skin irritation. May cause methemoglobinemia. May cause kidney damage. Hygroscopic (absorbs moisture from the air). Marine pollutant. May be harmful if swallowed.

Target Organs: Blood, kidneys.

Potential Health Effects

Eye: May cause eye irritation.

Skin: Dust causes mechanical irritation. Low hazard for usual industrial handling.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. May cause methemoglobinemia. The toxicity of nitrates is due to their in-vivo conversion to nitrite s which may lead to methemoglobinemia.

Chronic: Prolonged exposure may cause anemia and methemoglobinemia, characterized by dizziness, drowsiness, headache, breath shortness, cyanosis (bluish skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood. May cause kidney injury.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Strong oxidizer. Contact with combustible materials may cause a fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Some oxidizers may react explosively with hydrocarbons(fuel). May accelerate burning if involved in a fire.

Extinguishing Media: Cool containers with flooding quantities of water until well after fire is out. For small fires, do NOT use dry chemicals, carbon dioxide, halon or foams. USE WATER ONLY. For large fires flood fire with water from a distance.

Flash Point: Not applicable.

Autoignition Temperature: Not available.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse. Keep from contact with clothing and other combustible materials.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a

cool, dry, well-ventilated area away from incompatible substances. Keep away from reducing agents. Separate from organic materials. Avoid storage on wood floors.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Potassium nitrate	none listed	none listed	none listed
Nitrate	none listed	none listed	none listed

OSHA Vacated PELs: Potassium nitrate: No OSHA Vacated PELs are listed for this chemical. Nitrate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: white

Odor: odorless

pH: 4.5-8.5 (5% soln)

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 400 deg C (dec)

Freezing/Melting Point: 334 deg C

Decomposition Temperature: 400 deg C

Solubility: Soluble.

Specific Gravity/Density: 2.11

Molecular Formula: KNO₃

Molecular Weight: 101.10

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation, excess heat.

Incompatibilities with Other Materials: Reacts violently with organic materials, combustible

materials, and reducing agents. Specific incompatibles under various conditions include aluminum, titanium, antimony, germanium, zinc, zirconium, calcium disilicide, chromium nitride, metal sulfides, boron, carbon, sulfur, phosphorus, phosphides, sodium phosphinate, sodium thiosulfate, citric acid, tin chloride, sodium acetate, and thorium carbide.

Hazardous Decomposition Products: Nitrogen oxides, oxygen.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7757-79-1: TT3700000

CAS# 14797-55-8 unlisted.

LD50/LC50:

CAS# 7757-79-1:

Oral, rabbit: LD50 = 1901 mg/kg;

Oral, rat: LD50 = 3750 mg/kg;

Oral, rat: LD50 = 3540 mg/kg;

CAS# 14797-55-8:

Carcinogenicity:

CAS# 7757-79-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. **CAS# 14797-55-8:** Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: See actual entry in RTECS for complete information.

Neurotoxicity: No information available.

Mutagenicity: See actual entry in RTECS for complete information.

Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: Nitrates are predominantly used as fertilizer. Unfortunately, nitrates have a tendency to migrate into groundwater as they do not bind to soil and are extremely soluble. Excessive levels of nitrates in drinking water may cause serious illness and death. Infants are most susceptible to nitrate toxicity. "Blue Baby Syndrome" can occur when the infant's conversion of nitrate to nitrite interferes with the oxygen-carrying capacity of the blood. Symptoms of Blue Baby Syndrome include, but may not be limited to, shortness of breath and bluish colored skin.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	POTASSIUM NITRATE				POTASSIUM NITRATE
Hazard Class:	5.1				5.1
UN Number:	UN1486				UN1486
Packing Group:	III				III

Section 15 - Regulatory Information
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US FEDERAL**TSCA**

CAS# 7757-79-1 is listed on the TSCA inventory.

CAS# 14797-55-8 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA**CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7757-79-1: acute, chronic, flammable.

Section 313

This material contains Potassium nitrate (listed as Water Dissociable Nitrate Compounds), 100%, (CAS# 7757-79-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7757-79-1 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

CAS# 14797-55-8 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives**Hazard Symbols:**

O

Risk Phrases:

R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 17 Keep away from combustible material.

WGK (Water Danger/Protection)

CAS# 7757-79-1: 1

CAS# 14797-55-8: No information available.

Canada - DSL/NDSL

CAS# 7757-79-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D2B.

Canadian Ingredient Disclosure List

CAS# 7757-79-1 is not listed on the Canadian Ingredient Disclosure List.

Exposure LimitsCAS# 7757-79-1: OEL-THE NETHERLANDS:TWA 2 ppm (5 mg/m³) OEL-RUSSIA:STEL 5 mg/m³

Section 16 - Additional Information
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MSDS Creation Date: 8/14/1998**Revision #2 Date:** 6/26/2002

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