

SAFETY DATA SHEET

Preparation Date: 3/17/2014

Revision Date: 3/17/2014

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: P1352
Product Name: POTASSIUM NITRATE, BIOTECHGRADE

Other means of identification

Synonyms: Nitric acid, potassium salt
Saltpeter
CAS #: 7757-79-1
RTECS # TT3700000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Food Additive. In the manufacture of glass. Manufacture of matches. In the manufacture of gunpowder. In fireworks.
Uses advised against No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Regina Wachenheim (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Oxidizing solids	Category 3

Label elements

Warning

Hazard statements

Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation
May intensify fire; oxidizer



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if swallowed

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep/Store away from clothing/ .? /combustible materials
Take any precaution to avoid mixing with combustibles .?

Precautionary Statements - Response

Specific treatment (see .? on this label)
In case of fire: Use water to extinguish. Do not use dry chemicals or foams. CO₂ or Halon may provide limited control.
IF IN EYES: 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.
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
------------	---------	----------	--------------

3. COMPOSITION/INFORMATION ON INGREDIENTS

Potassium Nitrate 7757-79-1	7757-79-1	100	*
--------------------------------	-----------	-----	---

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). First aider needs to protect himself. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact:

Flush eye with water for 15 minutes. Get medical attention.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms

Irritating to eyes, respiratory system and skin. May cause methemoglobinemia and cyanosis. May cause metabolic acidosis. Dyspnea (Difficulty breathing and shortness of breath).

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

Water. CO2 may be of no value in extinguishing fires involving oxidizers and may only provide limited control.

Unsuitable Extinguishing Media:

Dry chemical. Foam. Halons.

Specific hazards arising from the chemical

Hazardous Combustion Products:

No information available.

Specific hazards:

Oxidizer. Keep away from combustible materials (wood, paper, oil, clothing, etc.). The product is not flammable, but it may cause fire when in contact with other material. Contact with combustible or organic materials may cause fire. Will accelerate burning when involved in a fire. Container explosion may occur under fire conditions or when heated.

Special Protective Actions for Firefighters

Specific Methods: For large fires, flood fire area with water from a distance. Cool affected containers with flooding quantities of water. Do not get water inside containers. DO NOT use combustible materials such as sawdust.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition. Keep combustibles (wood, paper, oil, clothing, etc.) away from spilled material.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Do not use combustible materials such as paper towels, sawdust, clothing, etc. to clean up spill. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from combustible material. Do not breathe vapours/dust. Do not ingest. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Hygroscopic. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Do not store near combustible materials. Store away from incompatible materials.

Incompatible Materials:

Reducing agents. Combustible materials. Organic materials. Powdered metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Potassium Nitrate - 7757-79-1	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Potassium Nitrate - 7757-79-1	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Potassium Nitrate 7757-79-1	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles.

Skin and body protection: Chemical resistant apron. Long sleeved clothing. Gloves.

Respiratory protection: Wear respirator with dust filter..

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.	Appearance: Crystals. Crystalline. Granular.	Color: White.
Odor: Odorless.	Taste Cooling. Saline. Pungent.	Formula: KNO ₃
Molecular/Formula weight: 101.10	Flash point (°C): Not applicable	Flashpoint (°C/°F): Not applicable
Flash Point Tested according to: Not applicable	Lower Explosion Limit (%): No information available	Upper Explosion Limit (%): No information available
Autoignition Temperature (°C/°F): No information available	pH: No information available	Melting point/range(°C/°F): 334-337 °C/633.2-638.6 °F
Boiling point/range(°C/°F): No information available	Decomposition temperature(°C/°F): No information available	Specific gravity: No information available
Density (g/cm³): 2.109 @ 25 °C	Bulk density: No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: No information available	Vapor density: No information available	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available	Viscosity: No information available
Miscibility: No information available	Solubility: Soluble in Glycerol Soluble in Water Insoluble in Ether Solubility in Water: 1g/2.8 ml water at 25 °C; 1 g/0.5 ml boiling water	

10. STABILITY AND REACTIVITY

Reactivity

10. STABILITY AND REACTIVITY

Potassium nitrate reacts vigorously when heated with sulfides of the alkaline earth group including barium sulfide and calcium sulfide. Also incompatible with boron, and finely powdered metals, chromium nitride, aluminum, titanium, antimony, germanium, zinc, zirconium, calcium disilicide, metal sulfides, carbon, sulfur, phosphorus, phosphides, sodium phosphinate, sodium thiosulfate, citric acid, tin chloride, sodium acetate, thorium carbide.

A mixture of potassium nitrate and antimony trisulfide explodes when heated.

When copper phosphide is mixed with potassium nitrate and heated, it explodes.

Mixture of germanium nitrate and potassium nitrate explodes when heated.

A mixture of potassium nitrate, sulfur, arsenic trisulfide is known as a pyrotechnic formulation.

When titanium is heated with potassium nitrate, an explosion occurs.

A mixture of potassium nitrate and titanium disulfide explodes when heated.

When potassium nitrate is mixed with boron, laminac, and trichloroethylene an explosion can occur.

Powdered zinc and potassium explode if heated.

Arsenic disulfide forms explosive mixtures when mixed with potassium nitrate.

Charcoal (powdered carbon) and potassium nitrate make a pyrotechnic mixture. Contact at 290 C causes a vigorous combustion and the mixture explodes on heating.

A mixture of potassium nitrate and sodium acetate may cause an explosion.

A mixture of potassium nitrate and sodium hypophosphite constitutes a powerful explosive.

Mixtures of potassium nitrate with sodium phosphinate and sodium thiosulfate are explosive

In contact with easily oxidizable substances, it may react rapidly enough to cause ignition, violent combustion, or explosion.

It increases the flammability of any combustible substance.

A mixture of potassium nitrate and calcium silicide is a readily ignited primer and burns at a very high temperature.

Contact of the carbide with molten potassium nitrate causes incandescence. When heated to decomposition it emits very toxic fumes

Chemical stability

Stability: Stable at normal conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Avoid dust formation. Contact with combustible materials (wood, paper, oil, clothing, etc.). Exposure to moist air. Exposure to moisture. Incompatible materials.

Incompatible Materials: Reducing agents. Combustible materials. Organic materials. Powdered metals.

Hazardous decomposition products: Nitrogen oxides (NOx). Oxides of potassium.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation.

Acute Toxicity

Component Information

Potassium Nitrate - 7757-79-1

LD50/oral/rat = 3015 mg/kg Oral LD50 Rat (European Chemicals Bureau IUCLID dataset)
3750 mg/kg (RTECS)

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = 1901 mg/kg Oral LD50 Rabbit (RTECS and European Chemicals Bureau IUCLID dataset)

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 3015mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.

Eye Contact: Causes serious eye irritation.

Inhalation Irritating to respiratory system. Breathing Potassium Nitrate can irritate the nose and throat causing sneezing and coughing. High levels can interfere with the ability of the blood to carry oxygen causing headache, dizziness and a blue color to the skin and lips (cyanosis), and other symptoms of methemoglobinemia (see other symptoms under ingestion). Higher levels can cause trouble breathing, circulatory collapse and even death..

Ingestion Ingestion of large quantities may cause violent gastroenteritis with nausea, vomiting, severe abdominal pain. It may also cause colic and diarrhea. Nitrates themselves are not toxic in the amounts we normally encounter. The acute toxicity of nitrates is a result of their conversion into nitrites within the body. The nitrite acts in the blood to oxidize hemoglobin to methemoglobin which does not perform as an oxygen carrier to tissues causing Methemoglobinemia. Symptoms may include vertigo, muscular weakness, syncope, irregular pulse, convulsions, anoxia, coma, fall in blood pressure, roaring sound in the ears, a persistent throbbing headache, generalized tingling sensation, heart palpitations, visual disturbances caused by increased intraocular tension and intracranial pressure, flushed and perspiring skin, which is later cold and cyanotic. Circulatory collapse and death may occur. Metabolic acidosis may also develop in cases of severe methemoglobinemia

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Prolonged exposure to small amounts may produce anemia, methemoglobinemia with attendant cyanosis and anoxia, hyperpnea and later dyspnea, and nephritis..
Sensitization:	No information available
Mutagenic Effects:	No information available
Carcinogenic effects:	Probably carcinogenic to humans. IARC group 2A - Listed under Nitrate or Nitrite (ingested) under conditions that result in endogenous nitrosation.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Potassium Nitrate	Not listed	Group 2A - Listed under Nitrate or Nitrite (ingested) under conditions that result in endogenous nitrosation	Not listed	Not listed	Not listed	Not listed

IARC (International Agency for Research on Cancer)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: There is limited evidence in animals that Potassium Nitrate may damage the developing fetus. No information on developmental toxicity effects on humans was found.

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure respiratory system.
STOT - repeated exposure No information available
Target Organs: Blood. Methemoglobin formation.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Potassium Nitrate - 7757-79-1

Freshwater Fish Species Data: LC50 - Gambusia affinis (mosquito fish) - 129 mg/l - 24 h
LC50 - Gambusia affinis (mosquito fish) - 224 mg/l - 48 h
LC50 - Gambusia affinis (mosquito fish) - 162 mg/l - 96 h
LC50 - Poecilia reticulata - 1927 mg/l - 24 h
LC50 - Poecilia reticulata - 1588 mg/l - 48 h
LC50 - Poecilia reticulata - 1436 mg/l - 72 h
LC50 - Poecilia reticulata - 1378 mg/l - 96 h

Potassium Nitrate - 7757-79-1

Water Flea Data: EC50- Daphnia magna - 490 mg/l - 48 h
EC50- Daphnia magna - 226 mg/l - 72 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Potassium Nitrate	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Subsidiary Risk: Not applicable
Packing Group: III
Marine Pollutant: No data available
ERG No: 140
DOT RQ (lbs): No information available

TDG (Canada)

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available

14. TRANSPORT INFORMATION

CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Subsidiary Risk: 5.1
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN1486
Proper Shipping Name: Potassium nitrate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 5L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Potassium Nitrate	Present	Present KE-29163	Present	Present (1)-449	Present	Present	Present 231-818-8

U.S. Regulations

Potassium Nitrate

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: Present
Pennsylvania RTK: Present
RI RTK - Hazardous Substances List: Present

Potassium Nitrate

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Potassium Nitrate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Potassium Nitrate	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Potassium Nitrate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

C Oxidizing materials

Potassium Nitrate

C

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	Canada (DSL)	Canada (NDSL)
Potassium Nitrate	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Potassium Nitrate	Not listed	Not listed

EU Classification

R-phrase(s)

R 8 - Contact with combustible material may cause fire.

R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)

S17 - Keep away from combustible material.

S37 - Wear suitable gloves.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Components	Classification	Concentration Limits:	Safety Phrases
Potassium Nitrate		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

O - Oxidising.

Xi - Irritant.

Xi



O

**16. OTHER INFORMATION**

16. OTHER INFORMATION

NFPA	HMIS	Personal Protective Equipment
------	------	-------------------------------



Health Hazard	2
Fire Hazard	0
Reactivity	0

**See Section 8.**

Preparation Date: 3/17/2014
Revision Date: 3/17/2014
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Material Safety Data Sheet