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**MSDS****Material Safety Data Sheet**

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An ISO 9001-2000 Certified Company  
Manufacturing Of Fine Chemicals

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# POTASSIUM NITRATE

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## 1. Product Identification

Synonyms: Saltpeter; niter; Nitric acid, potassium salt

CAS No.: 7757-79-1

Molecular Weight: 101.1

Chemical Formula: KNO<sub>3</sub>

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## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Potassium Nitrate	7757-79-1	99 - 100%	No

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## 3. Hazards Identification

### Emergency Overview

**DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**

## SAF-T-DATA<sup>(tm)</sup> Ratings (Provided here for your convenience)

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Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 3 - Severe (Oxidizer)

Contact Rating: 2 - Moderate (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Yellow (Reactive)

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## Potential Health Effects

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### **Inhalation:**

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

### **Ingestion:**

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. May cause gastroenteritis and abdominal pains. Purging and diuresis can be expected. Rare cases of nitrates being converted to the more toxic nitrites have been reported, mostly with infants.

### **Skin Contact:**

Causes irritation to skin. Symptoms include redness, itching, and pain.

### **Eye Contact:**

Causes irritation, redness, and pain.

### **Chronic Exposure:**

Under some circumstances methemoglobinemia occurs in individuals when the nitrate is converted by bacteria in the stomach to nitrite. Nausea, vomiting, dizziness, rapid heart beat, irregular breathing, convulsions, coma, and death can occur should this conversion take place. Chronic exposure to nitrites may cause anemia and adverse effects to kidney.

### **Aggravation of Pre-existing Conditions:**

No information found.

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## 4. First Aid Measures

### **Inhalation:**

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

### **Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

**Explosion:**

Some nitrates may explode when shocked, exposed to heat or flame, or by spontaneous chemical reaction. Sealed containers may rupture when heated. Sensitive to mechanical impact.

**Fire Extinguishing Media:**

Dry chemical, carbon dioxide, Halon, water spray, or fog. If water is used, apply from as far a distance as possible. Water spray may be used to keep fire exposed containers cool. Do not allow water runoff to enter sewers or waterways.

**Special Information:**

Wear full protective clothing and breathing equipment for high-intensity fire or potential explosion conditions. This oxidizing material can increase the flammability of adjacent combustible materials.

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## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### **Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

### **Appearance:**

White crystals.

### **Odor:**

Odorless.

### **Solubility:**

36 gm/100 ml water

### **Specific Gravity:**

2.1

### **pH:**

ca. 7

### **% Volatiles by volume @ 21C (70F):**

0

### **Boiling Point:**

400C (752F)

### **Melting Point:**

333C (631F)

### **Vapor Density (Air=1):**

3.00

**Vapor Pressure (mm Hg):**

Negligible @ 20C

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Oxides of nitrogen and toxic metal fumes may form when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Heavy metals, phosphites, organic compounds, carbonaceous materials, strong acids, and many other substances.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## 11. Toxicological Information

Oral rat LD50: 3750 mg/kg. Investigated as a mutagen, reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Potassium Nitrate (7757-79-1)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste

management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

### Domestic (Land, D.O.T.)

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**Proper Shipping Name:** POTASSIUM NITRATE  
**Hazard Class:** 5.1  
**UN/NA:** UN1486  
**Packing Group:** III  
**Information reported for product/size:** 50KG

### International (Water, I.M.O.)

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**Proper Shipping Name:** POTASSIUM NITRATE  
**Hazard Class:** 5.1  
**UN/NA:** UN1486  
**Packing Group:** III  
**Information reported for product/size:** 50KG

## 15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
Ingredient                                     TSCA   EC     Japan  Australia
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Potassium Nitrate (7757-79-1)                 Yes   Yes   Yes    Yes
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-----\Chemical Inventory Status - Part 2\-----
Ingredient                                     Korea  --Canada--
                                     DSL    NDSL   Phil.
-----
Potassium Nitrate (7757-79-1)                 Yes   Yes   No     Yes
```

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-----\Federal, State & International Regulations - Part 1\-----
Ingredient                                     -SARA 302-  -----SARA 313-----
                                     RQ    TPQ    List  Chemical Catg.
-----
Potassium Nitrate (7757-79-1)                 No    No     No    Nitrate Cmpd
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-----\Federal, State & International Regulations - Part 2\-----
Ingredient                                     -RCRA-      -TSCA-
                                     CERCLA     261.33     8 (d)
-----
Potassium Nitrate (7757-79-1)                 No          No          No
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Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
SARA 311/312: Acute: Yes      Chronic: Yes      Fire: Yes      Pressure: No  
Reactivity: No      (Pure / Solid)

**Australian Hazchem Code:** 1[T]

**Poison Schedule:** None allocated.

**WHMIS:**

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

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## 16. Other Information

**NFPA Ratings:** Health: **1** Flammability: **0** Reactivity: **0** Other: **Oxidizer**

**Label Hazard Warning:**

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

**Label Precautions:**

Keep from contact with clothing and other combustible materials.

Store in a tightly closed container.

Do not store near combustible materials.

Remove and wash contaminated clothing promptly.

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3.

**Disclaimer:**

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**HALOGENS provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose**

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