



# SODIUM NITRATE

## MATERIAL SAFETY DATA SHEET

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### 1. Product Identification

**Synonyms:** Nitratine; nitric acid, sodium salt; sodium saltpeter; sodium nitrate, crystal

**CAS No.:** 7631-99-4

**Molecular Weight:** 84.99

**Chemical Formula:** NaNO<sub>3</sub>

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### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
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Sodium Nitrate	7631-99-4	99 - 100%
Yes		

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### 3. Hazards Identification

#### Emergency Overview

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**DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE 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

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:**

Inhalation of dust irritates the respiratory tract. Symptoms may include coughing, shortness of breath.

#### **Ingestion:**

May cause gastroenteritis and abdominal pains. Other symptoms may include dizziness, bloody diarrhea, convulsions, and collapse. Purging and diuresis can be expected. Small repeated doses may cause headache and mental impairment. Rare cases of nitrates being converted to the more toxic nitrites have been reported, mostly with infants.

#### **Skin Contact:**

May cause irritation, symptoms including redness, itching, and pain.

#### **Eye Contact:**

May cause irritation, symptoms including redness, itching, 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.

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

Workers with a history of kidney or lung disease may be more susceptible to the effects of this substance.

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## 4. First Aid Measures

#### **Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

#### **Ingestion:**

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

#### **Skin Contact:**

Remove any contaminated clothing. Wipe off excess from skin. Wash skin with soap and water

for at least 15 minutes. Get medical attention if irritation develops or persists.

**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:**

Explosive with shock, heat or friction. Sodium Nitrate decomposes explosively when heated > 538C (1000F). Sensitive to mechanical impact.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

**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. Small amounts of residue may be flushed to sewer with plenty of water.

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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:**

81.5 g/100 g water @ 15C (59F)

### **Specific Gravity:**

2.26

### **pH:**

Aqueous solution is neutral.

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

0

### **Boiling Point:**

380C (716F)

### **Melting Point:**

308C (586F)

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

No information found.

**Vapor Pressure (mm Hg):**

No information found.

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

No information found.

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Emits nitrous oxides when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Reacts with acids to emit toxic fumes of nitrogen dioxide. Contact with the following may cause an explosion: barium rhodanide, boron phosphide, cyanides, sodium thiosulfate, sodium hypophosphite, sulfur plus charcoal, powdered aluminum and aluminum oxide. Fibrous organic material such as jute, wood, and similar cellulosic materials can become highly combustible by nitrate impregnation.

**Conditions to Avoid:**

Heat, flame, ignition sources, shock, friction, incompatibles.

## 11. Toxicological Information

Oral rat LD50: 1267 mg/kg. Investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----			
Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Sodium Nitrate (7631-99-4)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

## 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.

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## 14. Transport Information

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

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**Proper Shipping Name:** SODIUM NITRATE  
**Hazard Class:** 5.1  
**UN/NA:** UN1498  
**Packing Group:** III  
**Information reported for product/size:** 100LB

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

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**Proper Shipping Name:** SODIUM NITRATE  
**Hazard Class:** 5.1  
**UN/NA:** UN1498  
**Packing Group:** III  
**Information reported for product/size:** 100LB

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	
Australia				
Sodium Nitrate (7631-99-4)	Yes	Yes	Yes	Yes
-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	DSL	--Canada-- NDSL	Phil.
Sodium Nitrate (7631-99-4)	Yes	Yes	No	Yes
-----\Federal, State & International Regulations - Part 1\-----				

		-SARA 302-		-----SARA 313-----	
Ingredient Catg.		RQ	TPQ	List	Chemical
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Sodium Nitrate (7631-99-4)		No	No	No	Nitrate Cmpd
-----\Federal, State & International Regulations - Part 2\-----					
		-RCRA-		-TSCA-	
Ingredient		CERCLA	261.33	8 (d)	
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Sodium Nitrate (7631-99-4)		No	No	No	

Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
SARA 311/312: Acute: Yes      Chronic: No      Fire: No      Pressure: No  
Reactivity: Yes      (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.

## 16. Other Information

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

**Label Hazard Warning:**

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

**Label Precautions:**

- Keep from contact with clothing and other combustible materials.
- Store in a tightly closed container.
- Remove and wash contaminated clothing promptly.
- Avoid breathing dust.
- Avoid contact with eyes, skin and clothing.
- 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. 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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