

**MSDS** *Material Safety Data Sheet*

From: Mallinckrodt Baker, Inc.  
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Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# POTASSIUM CHLORATE

## 1. Product Identification

**Synonyms:** Potash chlorate; chloric acid, potassium salt; Berthollet Salt

**CAS No.:** 3811-04-9

**Molecular Weight:** 122.55

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

**Product Codes:**

J.T. Baker: 3024, 3028

Mallinckrodt: 6834

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Potassium Chlorate	3811-04-9	90 - 100%	Yes

## 3. Hazards Identification

**Emergency Overview**

**DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED. EXPOSURE MAY CAUSE METHEMOGLOBINEMIA, LIVER OR KIDNEY DAMAGE. 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 (Life)

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:**

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 abdominal pain, hemolysis, methemoglobinemia, cyanosis, anuria, coma, and convulsions. May cause liver and kidney damage. Death may occur from renal failure, generally in 4 days. Estimated lethal dose from 15 to 30 grams.

#### **Skin Contact:**

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

#### **Eye Contact:**

Causes irritation, redness, and pain.

#### **Chronic Exposure:**

Repeated ingestion of small amounts may cause loss of appetite and weight loss.

#### **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. Remove 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. When heated, it releases oxygen which increases combustion.

**Explosion:**

Contact with oxidizable substances may cause extremely violent combustion. Explodes with sulfuric acid. Inflames with explosion if triturated with any organic substances, sulfur, phosphorus, sulfite, hypophosphite and other oxidizable substances. Sealed containers may rupture when heated. 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:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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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. Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

White crystals or powder.

**Odor:**

Odorless.

**Solubility:**

7g/100g water @ 20C (68F).

**Specific Gravity:**

2.3

**pH:**

No information found.

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

0

**Boiling Point:**

400C (752F)

**Melting Point:**

368C (694F)

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

4.2

**Vapor Pressure (mm Hg):**

No information found.

**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:**

Above the melting point it decomposes into perchlorate and oxygen. Emits toxic fumes of chlorine and potassium oxide when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Iodides, tartaric acid, aluminum, sulfuric acid, hypophosphite, powdered metals, organic matter and many other oxidizable substances.

**Conditions to Avoid:**

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

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## 11. Toxicological Information

Oral rat LD50: 1870 mg/kg; Human (unknown route) LDlo: 429 mg/kg.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Potassium Chlorate (3811-04-9)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

Dangerous to the environment. Toxic to aquatic organisms; may cause long term adverse effects in the aquatic environment.

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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.

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## 14. Transport Information

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

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**Proper Shipping Name:** POTASSIUM CHLORATE

**Hazard Class:** 5.1

**UN/NA:** UN1485

**Packing Group:** II

**Information reported for product/size:** 220LB

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

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**Proper Shipping Name:** POTASSIUM CHLORATE

**Hazard Class:** 5.1

**UN/NA:** UN1485

**Packing Group:** II

**Information reported for product/size:** 220LB

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----  
Ingredient TSCA EC Japan Australia  
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Potassium Chlorate (3811-04-9) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----  
Ingredient Korea DSL --Canada-- NDSL Phil.  
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Potassium Chlorate (3811-04-9) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----  
Ingredient -SARA 302- -SARA 313-  
RQ TPQ List Chemical Catg.  
-----  
Potassium Chlorate (3811-04-9) No No No No

-----\Federal, State & International Regulations - Part 2\-----  
Ingredient CERCLA -RCRA- -TSCA-  
261.33 8(d)  
-----  
Potassium Chlorate (3811-04-9) No No No

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

**Australian Hazchem Code:** 1SE

**Poison Schedule:** S5

**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: **2** Flammability: **0** Reactivity: **3** Other: **Oxidizer**

**Label Hazard Warning:**

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED. EXPOSURE MAY CAUSE METHEMOGLOBINEMIA, LIVER OR KIDNEY DAMAGE. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

**Label Precautions:**

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Store in a tightly closed container.

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. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3, 12.

**Disclaimer:**

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