



## MATERIAL SAFETY DATA SHEET

### Potassium Chloride

#### 1. Product Identification

**Synonyms:** Potassium monochloride

**CAS No.:** 7447-40-7

**Molecular Weight:** 74.56

**Chemical Formula:** KCl

**Product Codes:** P162

#### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Potassium Chloride	7447-40-7	100%	Yes

#### 3. Hazards Identification

##### EMERGENCY OVERVIEW

**CAUTION!!** MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

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Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

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

Storage Color Code: Green (General Storage)

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##### Potential Acute Health Effects:

Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

##### **Inhalation:**

Inhalation of high concentrations of dust may cause nasal or lung irritation.

##### **Ingestion:**

Large quantities can produce gastrointestinal irritation and vomiting. May produce weakness and circulatory problems. May affect heart. In severe cases, ingestion may be fatal.

##### **Skin Contact:**

Contact may cause irritation or rash, particularly with moist skin.

**Eye Contact:**

Potassium chloride is moderate eye irritant. Redness, tearing, possible abrasion can occur.

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, cardiovascular system. Repeated or prolonged exposure to the substance can produce target organs damage.

**Aggravation of Pre-existing Conditions:**

Persons with impaired kidney function may be more susceptible to the effects of the substance.

**4. First Aid Measures****Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Serious Inhalation:**

Not available.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

**Skin Contact:**

Wash with soap and water. Cover the irritated skin with an emollient. Cold water may be used. Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Serious Skin Contact:**

Not available.

**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician if irritation persists.

**5. Fire Fighting Measures****Fire:**

Not considered to be a fire hazard.

**Explosion:**

Not considered to be an explosion hazard.

**Special Remarks on Explosion Hazards:**

May result in explosion with potassium permanganate and sulfuric acid.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of oxidizing materials

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**Products of Combustion:**

Not available.

**Fire Hazards in Presence of Various Substances:**

Not applicable.

**Special Information on Fire Hazards:**

Not available.

**Fire Fighting Media and Instructions:**

Not applicable.

**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.

**6. Accidental Release Measures**

**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

**7. Handling and Storage**

**Precautions:**

Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, moisture.

**Storage:**

Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, moisture.

**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.

**Engineering Controls:**

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.

**Personal Protection:**

Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Personal Respirators:**

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 protective gloves and clean body-covering clothing.

**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.

## 9. **Physical and Chemical Properties**

**Appearance:**

White crystals or powder.

**Odor:**

Odorless.

**Solubility:**

28.1 g/100g of water @ 0C.

**Density:**

1.987.

**pH:**

ca. 7 Saturated aq. sl. @ 15C.

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

0.

**Boiling Point:**

1500C (2732F) Sublimes.

**Melting Point:**

772C (1422F).

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

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Molecular Weight:**

74.56

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

No information found.

## 10. **Stability and Reactivity**

### **Stability:**

Stable under ordinary conditions of use and storage.

### **Conditions to Avoid:**

No information found.

### **Conditions of Instability:**

Incompatible materials.

### **Incompatibilities:**

Bromine trifluoride; potassium permanganate plus sulfuric acid.

### **Hazardous Decomposition**

Oxides of the contained metal and halogen, possibly also free, or ionic halogen.

### **Special Remarks on Reactivity:**

Hygroscopic. Incompatible with  $\text{KMnO}_4$ ,  $\text{H}_2\text{SO}_4$ ,  $\text{BrF}_3$ , and  $\text{BrCl}_3$ . May react violently with  $\text{BrF}_3$ .

### **Corrosivity:**

Not available.

### **Hazardous Polymerization:**

Will not occur.

## 11. **Toxicological Information**

### **Routes of Entry:**

Inhalation. Ingestion.

### **Toxicity to Animals:**

Acute oral toxicity (LD50): 1500 mg/kg [Mouse].

### **Chronic Effects on Humans:**

May cause damage to the following organs: blood, cardiovascular system.

### **Other Toxic Effects on Humans:**

Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

### **Special Remarks on Chronic Effects on Humans:**

May affect genetic material. Passes through the placental barrier in animal.

### **Special Remarks on other Toxic Effects on Humans:**

### **Acute Potential Health Effects:**

#### **Skin:**

May cause skin irritation.

#### **Eyes:**

Dust may cause eye irritation.

#### **Inhalation:**

Dust may cause respiratory tract irritation. Low hazard for usual industrial handling.

#### **Ingestion:**

May affect behavior (coma, change in motor activity, listlessness, vertigo, mental confusion, paresthesia, general weakness, flaccid paralysis), metabolism, blood (change in clotting factor, electrolytic imbalance), cardiovascular (hypotension, circulatory disturbances, cardiac arrhythmias, heart block), and respiratory, gastrointestinal (irritation of GI tract, nausea, vomiting, diarrhea, abdominal discomfort, purging), and urinary (impairment of renal function) systems. Acute potassium intoxication by mouth is rare because large single doses usually induce vomiting, and because in the absence of pre-existing kidney damage potassium is rapidly excreted. Maximal nontoxic oral dose of KCl in man varies from 0.2g to 1 g of potassium/kg/day depending upon efficiency of

individual excretory mechanism; lower doses sometimes cause impairment of renal function as shown by reduced inulin, and urea clearance.

**Chronic Potential Health Effects:**

May affect blood and cardiovascular system.

**12. Ecological Information**

**Ecotoxicity:**

Not available

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:**

The product itself and its products of degradation are not toxic.

**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.

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**14. Transport Information**

**DOT Classification:**

Not a DOT controlled material.

**Identification:**

Not applicable.

**Special Provisions for Transport:**

Not available.

**Protective Equipment:**

Gloves (impervious). Synthetic apron. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**15. Other Information**

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

**Label Hazard Warning:**

CAUTION! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

**Label Precautions:**

Avoid breathing dust.

Keep container closed.

Use with adequate ventilation.

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. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If irritation develops call a physician. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.*



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