صنعت پتاس آسیا
ASIA POTASH INDUSTRY

Safety Data Sheet (SDS)- Potassium Chloride

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Report Document

Report Topic
Safety Data Sheet (SDS)- Potassium Chloride
Purpose of Report
Awareness and clarification of safety issues related to potassium chloride product
Target Audience
Organization stakeholders (including colleagues, customers, consumers, etc.)
Other required details

Revision number	Writing start date	Date of completion of writing	Prepared by	Approved by	Description
00	2025-2-24	2025-2-24	Amir Hossein Haratian	Amir Rafie	Initial writing
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Section 1: Product and Company Information

- **Product Name:** Potassium Chloride
- **Chemical Name:** Potassium Chloride
- **Chemical Formula:** KCl

Company Information

- **Company:** Asia Potash Industry
- **Address:** Unit 1, No.8, 17thAlley, South Gandhi St., Tehran, Iran.
- **Phone:** +98 21-88886036 / +98 21-88661968
- **Fax:** +98 21-88660379
- **Email:** info@apic.ir

Section 2: Composition and Information on Ingredients

Name	CAS Number	Weight Percentage
Potassium Chloride	7447-40-7	95%

Toxicological Data:

- **Oral LD50 (Lethal Dose 50%):**
  - Guinea pig: 2500 mg/kg
  - Rat: 2600 mg/kg
  - Mouse: 1500 mg/kg

Section 3: Potential Health Effects

Acute Health Effects

- **Skin Contact:** Slightly hazardous (irritant)
- **Eye Contact:** Slightly hazardous (irritant)
- **Ingestion:** Slightly hazardous
- **Inhalation:** Slightly hazardous

Chronic Health Effects

- **Carcinogenic Effects:** No data available
- **Mutagenic Effects:**
  - Mutagenic for mammalian somatic cells
  - Mutagenic for bacteria and/or yeast
- **Teratogenic Effects:** No data available
- **Developmental Toxicity:** No data available
- **Potential Toxicity:** May affect blood and cardiovascular system
- **Repeated or prolonged exposure:** May cause organ damage

Section 4: First Aid Measures

- **Eye Contact:** Remove contact lenses if present. Rinse eyes with plenty of water for at least 15 minutes. Use cold water if needed. Seek medical attention if irritation persists.
- **Skin Contact:** Wash affected area with soap and water. Apply a skin softener if irritation occurs. Seek medical attention if irritation persists.
- **Inhalation:** Move to fresh air. If breathing is difficult, provide oxygen. If the person is not breathing, perform artificial respiration. Seek medical attention if necessary.
- **Ingestion:** Do not induce vomiting unless instructed by a doctor. Do not give anything by mouth to an unconscious person. Loosen tight clothing and seek medical attention if symptoms occur.

Section 5: Fire and Explosion Data

- **Flammability:** Non-flammable
- **Auto-Ignition Temperature:** Not applicable
- **Flash Points:** Not applicable
- **Flammable Limits:** Not applicable
- **Fire Hazards:** Not applicable
- **Explosion Hazards:**
    - No data available for mechanical impact or electrostatic discharge
    - Slight explosion risk in the presence of oxidizing materials

Firefighting Measures:

- Potassium chloride is not flammable and can be used as a fire retardant.
- It is commonly used in dry chemical fire extinguishers.
- **Special Explosion Hazard:** May explode in contact with potassium permanganate and sulfuric acid.

Section 6: Accidental Release Measures

- **Small Spills:** Collect solid material using appropriate tools and place in a designated waste container. Wash the contaminated area with water.
- **Large Spills:** Use a shovel to collect material and place it in an appropriate container. Wash the contaminated surface and dispose of waste as per local regulations.

Section 7: Handling and Storage

- **Precautions:**
    - Avoid ingestion and inhalation of dust.
    - If swallowed, seek immediate medical attention.
    - Keep away from incompatible materials such as oxidizing agents, acids, and moisture.

- **Storage Conditions:**
  - Keep container tightly closed.
  - Store in a cool, well-ventilated place.
  - Hygroscopic (absorbs moisture).

Section 8: Personal Protection

- **Ventilation:** Use appropriate ventilation to maintain airborne dust below permissible limits.
- **Personal Protective Equipment (PPE):**
  - **Eye Protection:** Safety glasses
  - **Skin Protection:** Laboratory coat
  - **Respiratory Protection:** Dust mask
  - **Hand Protection:** Protective gloves
- **PPE for Large Spills:**
  - Splash-resistant safety goggles
  - Full protective clothing
  - Dust mask
  - Safety boots
  - Protective gloves

Section 9: Physical and Chemical Properties

- **Physical State:** Solid
- **Odor:** Odorless
- **Taste:** Strong salty taste
- **Molecular Weight:** 74.55 g/mol
- **Color:** White
- **pH (1% solution in water):** 5.5 - 8
- **Boiling Point:** 1420°C (2588°F)
- **Melting Point:** 770°C (1418°F)
- **Critical Temperature:** 660°C
- **Specific Gravity:** 1.987 (Water = 1)
- **Vapor Pressure:** Not applicable
- **Solubility:** Soluble in cold and hot water; slightly soluble in methanol-octanol

Section 10: Stability and Reactivity

- **Stability:** Stable
- **Incompatibilities:** Reacts with oxidizing agents and acids
- **Special Considerations:**
  - Hygroscopic
  - Incompatible with potassium permanganate ($KMnO_4$), sulfuric acid (H_2SO_4), bromine trifluoride (BrF_3), and bromine chloride ($BrCl_3$)
  - May react violently with BrF_3
- **Polymerization:** Will not occur

Section 11: Toxicological Information

- **Routes of Entry:** Inhalation, ingestion
- **Acute Toxicity (LD50 - Oral):** 1500 mg/kg (mouse)
- **Chronic Toxicity:** May affect blood and cardiovascular system
- **Other Toxic Effects:**
  - **Skin Contact:** May cause irritation
  - **Eye Contact:** Dust may cause eye irritation
  - **Inhalation:** Dust may cause respiratory tract irritation
  - **Ingestion Effects:**
    - May cause behavioral changes (coma, altered motor activity, dizziness, confusion)
    - Electrolyte imbalance
    - Blood clotting factor changes
    - Cardiovascular effects (hypotension, circulatory disturbances, arrhythmia)
    - Gastrointestinal distress (nausea, vomiting, diarrhea)
- **Potassium poisoning is rare in healthy individuals due to rapid renal excretion.**

Section 12: Ecological Information

- **Environmental Toxicity:** No data available
- **Biodegradation Products:** Not expected to be hazardous in the short term but may produce harmful degradation products over time

Section 13: Disposal Considerations

- Waste must be disposed of according to national environmental regulations.

Section 14: Transport Information

- **Regulatory Considerations:** Must be transported according to local regulations for chemical substances.

Section 15: Regulatory Information

- Potassium chloride is regulated under various national safety standards, including:
  - **USA:** Environmental Protection Agency (EPA)
  - **EU:** European Food Safety Authority (EFSA)
  - **Canada:** Canadian Environmental Protection Act (CEPA)
  - **Australia:** Australian Pesticides and Veterinary Medicines Authority (APVMA)
  - **India:** Food Safety and Standards Authority of India (FSSAI)

Section 16: Other Information

- **Preparation Date:** 2025-2-24
- **Prepared By:** Amir Hossein Haratian
- **Approved By:** Amir Rafie