1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Potassium dichromate

Product Number : 207802
Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen, Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Respiratory sensitiser, Corrosive, Teratogen, Mutagen

Target Organs
Lungs, Kidney, Blood

GHS Classification
Oxidizing solids (Category 2)
Acute toxicity, Oral (Category 2)
Acute toxicity, Dermal (Category 1)
Acute toxicity, Inhalation (Category 1)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Respiratory sensitization (Category 1)
Germ cell mutagenicity (Category 1B)
Carcinogenicity (Category 1B)
Reproductive toxicity (Category 1B)
Specific target organ toxicity - repeated exposure, Inhalation (Category 1)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 4)

GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger
Hazard statement(s)
H272 May intensify fire; oxidiser.
H300 + H310 Fatal if swallowed or in contact with skin
H314 Causes severe skin burns and eye damage.
Hazard statements:

- **H330** Fatal if inhaled.
- **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- **H340** May cause genetic defects.
- **H350** May cause cancer.
- **H360** May damage fertility or the unborn child.
- **H372** Causes damage to organs through prolonged or repeated exposure if inhaled.
- **H400** Very toxic to aquatic life.
- **H413** May cause long lasting harmful effects to aquatic life.

Precautionary statement(s):

- **P201** Obtain special instructions before use.
- **P220** Keep/Store away from clothing/ combustible materials.
- **P260** Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- **P264** Wash hands thoroughly after handling.
- **P273** Avoid release to the environment.
- **P280** Wear protective gloves/ protective clothing/ eye protection/ face protection.
- **P284** Wear respiratory protection.
- **P302 + P350** IF ON SKIN: Gently wash with plenty of soap and water.
- **P305 + P351 + P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P310** Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification:

- Health hazard: 4
- Chronic Health Hazard: *
- Flammability: 0
- Physical hazards: 0
- Reactivity: 3

NFPA Rating:

- Health hazard: 4
- Fire: 0
- Reactivity Hazard: 3
- Special hazard.: OX

Potential Health Effects:

- **Inhalation** May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- **Skin** May be fatal if absorbed through skin. Causes skin burns.
- **Eyes** Causes eye burns.
- **Ingestion** May be fatal if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms**: Potassium bichromate

**Formula**: $\text{Cr}_2\text{K}_2\text{O}_7$

**Molecular Weight**: 294.18 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potassium dichromate</strong></td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7778-50-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-906-6</td>
</tr>
<tr>
<td>Index-No.</td>
<td>024-002-00-6</td>
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</table>

### 4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Potassium oxides, Chromium oxides

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium dichromate</td>
<td>7778-50-9</td>
<td>CEIL</td>
<td>0.1 mg/m³</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.0050 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
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<tr>
<td></td>
<td></td>
<td>CEIL</td>
<td>0.0010 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks
Confirmed human carcinogen
Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form crystalline
Colour no data available

Safety data
pH 3.5 - 5.0 at 29.4 g/l at 25 °C (77 °F)
Melting point/freezing point Melting point/range: 398 °C (748 °F) - lit.
Boiling point no data available
Flash point not applicable
Ignition temperature no data available
Autoignition temperature no data available
Lower explosion limit no data available
Upper explosion limit no data available
Vapour pressure no data available
Density 2.680 g/cm³
Water solubility ca.29.4 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water log Pow: 5
Relative vapour density no data available
Odour no data available
10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Organic materials, Do not store near acids., Powdered metals, Hydrazine

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Potassium oxides, Chromium oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 25 mg/kg

Inhalation LC50
LC50 Inhalation - rat - female - 4 h - 29 mg/m3

Dermal LD50
LD50 Dermal - rabbit - 14 mg/kg
Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema. Diarrhoea Prolonged skin contact may cause skin irritation and/or dermatitis.

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
May cause allergic respiratory reaction.

Germ cell mutagenicity
May alter genetic material.
In vivo tests showed mutagenic efects

Carcinogenicity
This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Potassium dichromate)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: 1910.1026 (Potassium dichromate)

**Reproductive toxicity**

no data available

**Teratogenicity**

Presumed human reproductive toxicant

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

Inhalation - Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

no data available

**Potential health effects**

- **Inhalation**
  May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

- **Ingestion**
  May be fatal if swallowed.

- **Skin**
  May be fatal if absorbed through skin. Causes skin burns.

- **Eyes**
  Causes eye burns.

**Signs and Symptoms of Exposure**

Ulceration, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

**Synergistic effects**

no data available

**Additional Information**

RTECS: HX7680000

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### 12. ECOLOGICAL INFORMATION

**Toxicity**

- **Toxicity to fish**
  LC50 - Lepomis macrochirus - 0.131 mg/l - 96.0 h
  mortality NOEC - Pimephales promelas (fathead minnow) - 6 mg/l - 7.0 d

- **Toxicity to daphnia and other aquatic invertebrates**
  mortality NOEC - Daphnia - 0.016 - 0.064 mg/l - 7 d
  EC50 - Daphnia magna (Water flea) - 0.035 mg/l - 48 h

- **Toxicity to algae**
  EC50 - Pseudokirchneriella subcapitata - 0.31 mg/l - 72 h

**Persistence and degradability**

**Bioaccumulative potential**

- **Bioaccumulation**
  Oncorhynchus mykiss (rainbow trout) - 180 d
  Bioconcentration factor (BCF): 17.4

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available
Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3086  Class: 6.1 (5.1)  Packing group: I
Proper shipping name: Toxic solids, oxidizing, n.o.s. (Potassium dichromate)
Reportable Quantity (RQ): 10 lbs
Marine pollutant:
Poison Inhalation Hazard: No

IMDG
UN number: 3086  Class: 6.1 (5.1)  Packing group: I  EMS-No: F-A, S-Q
Proper shipping name: TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)
Marine pollutant: Marine pollutant

IATA
UN number: 3086  Class: 6.1 (5.1)  Packing group: I
Proper shipping name: Toxic solid, oxidizing, n.o.s. (Potassium dichromate)
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards
Carcinogen, Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Respiratory sensitiser, Corrosive, Teratogen, Mutagen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

<table>
<thead>
<tr>
<th>Chemical</th>
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SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components

WARNING! This product contains a chemical known to the State of
16. OTHER INFORMATION

Further information
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