1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : Potassium dichromate
Product Number : 309176
Brand : Sigma-Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment
May cause cancer. May cause heritable genetic damage. May impair fertility. May cause harm to the unborn child. Contact with combustible material may cause fire. Also harmful in contact with skin. Also toxic if swallowed. Also very toxic by inhalation. Causes burns. May cause sensitization by inhalation and skin contact. Also toxic: danger of serious damage to health by prolonged exposure through inhalation. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION INFORMATION ON INGREDIENTS

Formula : K2Cr2O7
Molecular Weight : 294.19 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

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. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
### 5. FIRE-FIGHTING MEASURES

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

**Special protective equipment for fire-fighters**
Wear self-contained breathing apparatus for fire fighting if necessary.

**Further information**
Use water spray to cool unopened containers.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Wear respiratory protection. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

**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 for cleaning up**
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

**Handling**
Avoid exposure - obtain special instructions before use. 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 combustible material.

**Storage**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**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. Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (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**
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

**Eye protection**
Safety glasses

**Skin and body protection**
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**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

**Safety data**
- pH: 3.5 - 5.0 at 29.4 g/l at 25 °C
- Melting point: 390 °C
- Boiling point: no data available
- Flash point: not applicable
- Ignition temperature: no data available
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Density: 2.680 g/cm³
- Water solubility: ca. 29.4 g/l at 20 °C

10. STABILITY AND REACTIVITY

**Storage stability**
Stable under recommended storage conditions.

**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

11. TOXICOLOGICAL INFORMATION

**Acute toxicity**
- LD50 Oral - rat - 25 mg/kg
- LC50 Inhalation - rat - female - 4 h - 29 mg/m³
- 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.

**Irritation and corrosion**
no data available

**Sensitisation**
May cause allergic respiratory reaction.

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

**IARC:** Group 1 - Carcinogenic to humans (Potassium dichromate)
May alter genetic material.
Signs and Symptoms of Exposure
Ulceration, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Potential Health Effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.</td>
</tr>
<tr>
<td>Skin</td>
<td>Harmful if absorbed through skin. Causes skin burns.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Causes eye burns.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Toxic if swallowed. Causes burns.</td>
</tr>
<tr>
<td>Target Organs</td>
<td>Lungs, Kidney, Blood,</td>
</tr>
</tbody>
</table>

Additional Information
RTECS: HX7680000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

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

Ecotoxicity effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>LC50 - Lepomis macrochirus - 0.131 mg/l - 96 h mortality NOEC - Pimephales promelas (fathead minnow) - 6 mg/l - 7 d</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates.</td>
<td>mortality NOEC - Daphnia - 0.016 - 0.064 mg/l - 7 d</td>
</tr>
<tr>
<td></td>
<td>EC50 - Daphnia magna (Water flea) - 0.035 mg/l - 48 h</td>
</tr>
<tr>
<td>Toxicity to algae</td>
<td>EC50 - Pseudokirchneriella subcapitata - 0.31 mg/l - 72 h</td>
</tr>
</tbody>
</table>

Further information on ecology

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. 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

ADR/RID
- UN-Number: 3086 Class: 6.1 (5.1) Packing group: I
- Proper shipping name: TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)

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: No
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

Labelling according to EC Directives

EC Label
Hazard symbols
- O  Oxidising
- T+  Very toxic
- N  Dangerous for the environment

R-phrase(s)
- R45  May cause cancer.
- R46  May cause heritable genetic damage.
- R60  May impair fertility.
- R61  May cause harm to the unborn child.
- R8  Contact with combustible material may cause fire.
- R21  Also harmful in contact with skin.
- R25  Also toxic if swallowed.
- R26  Also very toxic by inhalation.
- R34  Causes burns.
- R42/43  May cause sensitization by inhalation and skin contact.
- R48/23  Also toxic: danger of serious damage to health by prolonged exposure through inhalation.
- R50/53  Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)
- S53  Avoid exposure - obtain special instructions before use.
- S45  In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S60  This material and its container must be disposed of as hazardous waste.
- S61  Avoid release to the environment. Refer to special instructions/ Safety data sheets.

Restricted to professional users.

16. OTHER INFORMATION

Further information
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