Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: POTASSIUM DICHROMATE, 99%
Product Number: 206244
Brand: Aldrich Chemical
Company: Sigma-Aldrich
Street Address: 3350 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 314 935 5052
Emergency Phone: 414 273 3850 Ext. 5966

Section 2 - Composition/Information on ingredient

Substance Name: POTASSIUM DICHROMATE
CAS #: 7778-50-9
SARA 313: No

Formula: Cr2O7·2K2O
Synonyms: Bichromate of potash, Dipotassium dichromate, Iopazite, Kaelum dichromat (German), Potassium bichromate, Potassium dichromate, Potassium dichromate(VII)

Section 3 - Hazards Identification

Emergency Overview
Oxidizing. Highly Toxic (USA) Very Toxic (EU). Contact with combustible material may cause fire. Very toxic by inhalation. In contact with skin, and if swallowed. Causes burns. May cause cancer. May cause heritable genetic damage. May cause sensitization by inhalation and skin contact. Target organ(s): Lungs, Kidneys.

HMIS Rating
Health: 4
Flammability: 1
Reactivity: 3
Special Hazard(s): Oxidizer

NFPA Rating
Health: 4
Flammability: 1
Reactivity: 3
Special Hazard(s): Oxidizer

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

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

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media
Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of the normal products of combustion or oxygen deficiency.
Specific Hazard(s)
Contact with other material may cause fire. Emit toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe dust. Do not get in eyes, on skin, or clothing. Avoid prolonged or repeated exposure.

Storage
Suitable: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment
Respiratory: NIOSH/MSHA-approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

General Hygiene Measures
Wash contaminated clothing before reuse. Wash thoroughly after handling.

Exposure Limits, RTECS

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Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
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<th>Value</th>
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<tr>
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<td>MSHA Standard-air</td>
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**Molecular Weight:** 294.19 AMU

**pH:** 3.5 - 5.0

**BP/Boiling Range:** 360 °C

**Freezing Point:** N/A

**Vapor Pressure:** N/A

**Vapor Density:** N/A

**Saturated Vapor Concentration:** N/A

**SG/Density:** 2.67 g/ml

**Bulk Density:** N/A

**Odor Threshold:** N/A

**Volatile:** N/A

**VOC Content:** N/A

**Water Content:** N/A

**Solvent Content:** N/A

**Evaporation Rate:** N/A

**Viscosity:** N/A

**Partition Coefficient:** N/A

**Decomposition Temp.:** N/A

**Flash Point:** N/A

**Flash Point °C:** N/A

**Explosion Limita:** N/A

**Flammability:** N/A

**Autoignition Temp.:** N/A

**Solubility:** N/A

**Solubility in Water:** 0.1 M in H2O, 20°C. Complete, orange

Section 10 - Stability and Reactivity

**Stability:**

**Materials to Avoid:** Organic materials, Avoid contact with acid, Finely powered metals.

**Hazardous Decomposition Products:**

**Hazardous Decomposition Products:** Potassium oxide, Chromium(VI) oxide.

**Hazardous Polymerization:** Will not occur.

Section 11 - Toxicological Information

**Route of Exposure:**

**Skin Contact:** Causes burns.

**Skin Absorption:** May be fatal if absorbed through skin.

**Eye Contact:** Causes burns.

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

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

**Sensitization:**

**Sensitization:** May cause allergic respiratory and skin reactions.

**Target Organ(s) or System(s):** Lungs, Kidneys, Blood.

**Signs and Symptoms of Exposure:**

Inhalation of dichromate dust can cause ulceration and perforation of the nasal septum. Contact with the skin can cause ulceration (chronic sores). Other symptoms of exposure include erosion and decolouration of the teeth, nephritis, epigastric pain (inflammation and ulceration of the gastrointestinal tract). Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasms, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Ingestion can cause: Vomiting, Cynosis. Coma.

**RTCS Number:** H476B0000

**Toxicity Data:**

**Oral - Child:** 26 mg/kg (LD50)
- Remarks: Behavioral, Somnolence (general depressed activity).
- Lungs, Thorax, or Respiration/Respiratory stimulation.
- Gastrointestinal/Nausea or vomiting.

**Oral - Male:** 143 mg/kg (LD50)
- Remarks: Vascular BP lowering not characterized in autonomic section.
- Lungs, Thorax, or Respiration/Dyspnea.
- Kidney, Ureter, Bladder/Unne volume decreased.

**Oral - Child:** 50 mg/kg (LD50)
- Remarks: Sensitivity Organs and Special Senses (Nose, Eye, Ear, and Taste)/Eye/Other.
- Behavioral/Somnolence (general depressed activity).
- Behavioral/Axemia.

**Intraperitoneal - Rat:** 28 mg/kg (LD50)

**Oral - Mouse:** 190 mg/kg (LD50)

**Intraperitoneal - Mouse:** 37 mg/kg (LD50)

**Skin - Rabbit:** 14 mg/kg (LD50)
- Remarks: Lungs, Thorax, or Respiration/Acute pulmonary edema.
- Gastrointestinal/Hypomotility, diarrhoea.
- Skin and Appendages/Skin: After systemic exposure: Dermatitis, others.

**Chronic Exposure Carcinogen:**

**Result:** This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
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</tbody>
</table>
Hamster: 7 UMC/L
Ovary: Mutation in mammalian somatic cells.

Chronic Exposure - Reproductive Hazard

Species: Rat
Route: Oral
Exposure Time: 2100 PRES
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat
Route: Oral
Exposure Time: 0-15D PRES
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., if fetuses per litter: measured before birth). Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).

Species: Rat
Route: Oral
Exposure Time: 900 PRE
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rat
Route: Oral
Exposure Time: 720 LUG/KG
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Route: Oral
Exposure Time: 1700 MG/KG
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Route: Oral
Exposure Time: 900 PRE
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Route: Oral
Exposure Time: 1490 MG/KG
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Route: Oral
Exposure Time: 900 PRE
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Route: Oral
Exposure Time: 900 PRE
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female: total number of implants per corpus luteum). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Section 12 - Ecological Information

Acute Ecotoxicity Tests

Test Type: LC50 Fish
Species: Pimephales promelas (Fathead minnow)
Time: Value
96.0 h: 25 - 150 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: Value
48.0 h: 0.035 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
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 aftercooler and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT: Herm. US 3320
Proper Shipping Name: Toxic solid, corrosive, inorganic, n.o.s.
UN# : 3320
Class: 6.1

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Section 15 - Regulatory Information

EU Directives Classification
Symbol of Danger: T + N
Indication of Danger: Very toxic. Dangerous for the environment.
Risk Statements: R: 45 46 21 25 26 37/38 41 43 50/53
May cause cancer by inhalation. May cause heritable genetic damage. Also harmful in contact with skin. Also toxic if swallowed. Also very toxic by inhalation. Irritating to respiratory system and skin. Risk of serious damage to eyes. May cause sensitization by skin contact. Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Safety Statements: S: 53 45 60 61
Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text
Indication of Danger: Oxidizing: Highly Toxic (USA) Very Toxic (EU)
Risk Statements: Contact with combustible material may cause fire. Very toxic by inhalation, in contact with skin, and if swallowed. Causes burns. May cause cancer. May cause heritable genetic damage. May cause sensitization by inhalation and skin contact.
Safety Statements: Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements
Target organ(s): Lungs. Kidneys.

United States Regulatory Information
SARA Listed: No

TSCA Inventory Item: Yes

United States - State Regulatory Information
California Prop - 65
This product is or contains chemical(s) known to the state of California to cause cancer.

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2002 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.