

### 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

Oxidizer, Carcinogen, Target Organ Effect, Highly toxic by inhalation, 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 sensitisation (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.

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 : Cr<sub>2</sub>K<sub>2</sub>O<sub>7</sub>  
 Molecular Weight : 294.18 g/mol

Component	Concentration
<b>Potassium dichromate</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)	
CAS-No.	7778-50-9
EC-No.	231-906-6
Index-No.	024-002-00-6
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**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 vapours, 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**

Components	CAS-No.	Value	Control parameters	Basis
Potassium dichromate	7778-50-9	CEIL	0.1 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	0.0050 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		CEIL	0.0010 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z2
		TWA	0.05 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Confirmed human carcinogen			

	Substance listed; for more information see OSHA document 1910.1026
	See 1910.1026. See Table Z-2 for the exposure limit for any operations or sectors where the exposure limit in 1910.1026 is stayed or are otherwise not in effect.

## 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.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### 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

Auto-ignition 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/cm <sup>3</sup>
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
Odour Threshold	no data available
Evaporation rate	no data available

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## 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

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - male - 168 mg/kg

LD50 Oral - rat - female - 90.5 mg/kg

#### Inhalation LC50

LC50 Inhalation - rat - female - 4 h - 0.088 mg/l

#### 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 sensitisation

May cause allergic respiratory reaction.

### Germ cell mutagenicity

May alter genetic material.  
In vivo tests showed mutagenic effects

### **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: Known to be human carcinogen (Potassium dichromate)

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**

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

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## 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.

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## 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: No  
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

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## 15. REGULATORY INFORMATION

#### OSHA Hazards

Oxidizer, Carcinogen, Target Organ Effect, Highly toxic by inhalation, 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

	CAS-No.	Revision Date
Potassium dichromate	7778-50-9	1993-04-24

#### SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

Potassium dichromate

CAS-No.  
7778-50-9

Revision Date  
1993-04-24

### Pennsylvania Right To Know Components

Potassium dichromate

CAS-No.  
7778-50-9

Revision Date  
1993-04-24

### New Jersey Right To Know Components

Potassium dichromate

CAS-No.  
7778-50-9

Revision Date  
1993-04-24

### California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

Potassium dichromate

CAS-No.  
7778-50-9

Revision Date  
1987-02-27

### California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Potassium dichromate

CAS-No.  
7778-50-9

Revision Date  
1987-02-27

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## 16. OTHER INFORMATION

### Further information

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