SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: Potassium dichromate

Product Number: 207802
Brand: Sigma-Aldrich
Index-No.: 024-002-00-6
REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS-No.: 7778-50-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Chemie GmbH
Riedstrasse 2
D-89555 STEINHEIM

Telephone: +49 89-6513-1444
Fax: +49 7329-97-2319
E-mail address: eurtechserv@sial.com

1.4 Emergency telephone number

Emergency Phone #: +49 7329-97-2323

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Oxidizing solids (Category 2), H272
Carcinogenicity (Category 1B), H350
Germ cell mutagenicity (Category 1B), H340
Reproductive toxicity (Category 1B), H360
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Oral (Category 3), H301
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute toxicity, Dermal (Category 4), H312
Skin corrosion (Category 1B), H314
Respiratory sensitisation (Category 1), H334
Skin sensitisation (Category 1), H317
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC
C Corrosive R34
R45
R46
N Dangerous for the R50/53
environment
O Oxidising R 8
     R42/43
     R60, R61
T+ Very toxic R26
T Toxic R25, R48/23
Xn Harmful R21

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word Danger

Hazard statement(s)
H272 May intensify fire; oxidiser.
H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
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.
H410 Very toxic to aquatic life with long lasting effects.

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.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Supplemental Hazard Statements

Restricted to professional users.

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms: Potassium bichromate

Formula: Cr₂K₂O₇
Molecular Weight: 294.18 g/mol
CAS-No.: 7778-50-9
EC-No.: 231-906-6
Index-No.: 024-002-00-6

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium dichromate</td>
<td>Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)</td>
<td>Ox. Sol. 2; Acute Tox. 3; Acute Tox. 2; Acute Tox. 4; Skin</td>
</tr>
</tbody>
</table>
### SECTION 4: First aid measures

#### 4.1 Description of 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. 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.

**If swallowed**

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

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media**

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

#### 5.2 Special hazards arising from the substance or mixture

Potassium oxides, Chromium oxides

#### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### 5.4 Further information

Use water spray to cool unopened containers.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 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.

6.3 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.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.
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. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)
A part from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face 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 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatri® (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.

**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.

**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).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into
the environment must be avoided.

---

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>A) Appearance</th>
<th>Form: crystalline</th>
</tr>
</thead>
<tbody>
<tr>
<td>B) Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>C) Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>D) pH</td>
<td>3.5 - 5.0 at 29.4 g/l at 25 °C</td>
</tr>
<tr>
<td>E) Melting point/freezing point</td>
<td>Melting point/range: 398 °C - lit.</td>
</tr>
<tr>
<td>F) Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>G) Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>H) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>I) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>J) Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>K) Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>L) Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>M) Relative density</td>
<td>2,680 g/cm³</td>
</tr>
<tr>
<td>N) Water solubility</td>
<td>Ca. 29.4 g/l at 20 °C</td>
</tr>
<tr>
<td>O) Partition coefficient: n-octanol/water</td>
<td>Log Pow: 5</td>
</tr>
<tr>
<td>P) Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Q) Decomposition temperature</td>
<td>No data available</td>
</tr>
</tbody>
</table>
9.2 **Other safety information**

no data available

---

**SECTION 10: Stability and reactivity**

10.1 **Reactivity**

no data available

10.2 **Chemical stability**

Stable under recommended storage conditions.

10.3 **Possibility of hazardous reactions**

no data available

10.4 **Conditions to avoid**

no data available

10.5 **Incompatible materials**

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

10.6 **Hazardous decomposition products**

Other decomposition products - no data available

In the event of fire: see section 5

---

**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**

LD50 Oral - rat - male - 168 mg/kg

LD50 Oral - rat - female - 90,5 mg/kg

LC50 Inhalation - rat - female - 4 h - 0,088 mg/l

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.

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitisation**

**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)

**Reproductive toxicity**

Presumed human reproductive toxicant

**Specific target organ toxicity - single exposure**

no data available
Specific target organ toxicity - repeated exposure
Inhalation - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Additional Information
RTECS: HX7680000
Ulceration, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

SECTION 12: Ecological information

12.1 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

12.2 Persistence and degradability

12.3 Bioaccumulative potential
Bioaccumulation  Oncorhynchus mykiss (rainbow trout) - 180 d
- 200 µg/l

Bioconcentration factor (BCF): 17,4

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
Very toxic to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
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.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 3086  IMDG: 3086  IATA: 3086

14.2 UN proper shipping name
ADR/RID:  TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)
IMDG:  TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)
IATA:  Toxic solid, oxidizing, n.o.s. (Potassium dichromate)
Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)
ADR/RID: 6.1 (5.1)  IMDG: 6.1 (5.1)  IATA: 6.1 (5.1)
14.4 Packaging group
ADR/RID: I  
IMDG: I  
IATA: I

14.5 Environmental hazards
ADR/RID: yes  
IMDG Marine pollutant: yes  
IATA: no

14.6 Special precautions for user
no data available

SECTION 15: Regulatory information
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Authorisations and/or restrictions on use
Candidate List of Substances of Very High Concern for Authorisation
Carcinogenic (article 57a)
ED/30/2010

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.  Acute toxicity
Aquatic Acute  Acute aquatic toxicity
Aquatic Chronic  Chronic aquatic toxicity
Carc.  Carcinogenicity
H272  May intensify fire; oxidiser.
H301  Toxic if swallowed.
H312  Harmful in contact with skin.
H314  Causes severe skin burns and eye damage.
H317  May cause an allergic skin reaction.
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.
H360FD  May damage fertility. May damage the unborn child.
H372  Causes damage to organs through prolonged or repeated exposure.
H400  Very toxic to aquatic life.
H410  Very toxic to aquatic life with long lasting effects.
Muta.  Germ cell mutagenicity

Full text of R-phrases referred to under sections 2 and 3

N  Dangerous for the environment
O  Oxidising
T+  Very toxic
R 8  Contact with combustible material may cause fire.
R21  Harmful in contact with skin.
R25  Toxic if swallowed.
R26  Very toxic by inhalation.
R34  Causes burns.
R42/43  May cause sensitisation by inhalation and skin contact.
R45  May cause cancer.
R46  May cause heritable genetic damage.
R48/23  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.
R60  May impair fertility.
R61  May cause harm to the unborn child.
Repr.Cat.2       Toxic to Reproduction Category 2

Further information
Copyright 2013 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.