1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Sodium dichromate dihydrate
Product Number : 398063
Brand : Sigma-Aldrich
Index-No. : 024-004-00-7
CAS-No. : 7789-12-0

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
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Oxidizing solids (Category 2), H272
Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Respiratory sensitisation (Category 1), H334
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), H372
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.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger
Hazard statement(s)
H272 : May intensify fire; oxidiser.
H300 : Fatal if swallowed.
H312 + H332 Harmful in contact with skin or if inhaled
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
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.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Sodium bichromate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>Cr₂Na₂O₇ · 2H₂O</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>298.00 g/mol</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7789-12-0</td>
</tr>
<tr>
<td>EC-No.</td>
<td>234-190-3</td>
</tr>
<tr>
<td>Index-No.</td>
<td>024-004-00-7</td>
</tr>
</tbody>
</table>

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Sodium dichromate dihydrate** Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

| Ox. Sol. 2; Acute Tox. 2; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H300, H312 + H332, H314, H334, H340, H350, H360, H372, H410 | <= 100 % |

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

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. 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.

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

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**
Sodium oxides, Chromium oxides

5.3 **Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

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

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.

---

### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

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. For precautions see section 2.2.

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

Storage class (TRGS 510): Oxidizing hazardous materials

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

---

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dichromate dihydrate</td>
<td>7789-12-0</td>
<td>TWA</td>
<td>0.050000 mg/m³</td>
<td>USA, ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

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

**Remarks:**
- Upper Respiratory Tract irritation
- Cancer
- Substances for which there is a Biological Exposure Index or Indices (see BEI® section)
- Confirmed human carcinogen varies

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
<td>0.005000 mg/m³</td>
<td>OSHA Specifically Regulated Chemicals/Carcinogens</td>
</tr>
</tbody>
</table>

**Remarks:**
- 1910.1026 This standard applies to occupational exposures to chromium (VI) in all forms and compounds in general industry, except: (a) Exposures that occur in the application of pesticides regulated by the Environmental Protection Agency or another Federal government agency (e.g., the treatment of wood with preservatives); (b) Exposures to portland cement; or (c) Where the employer has objective data demonstrating that a material containing chromium or a specific process, operation, or activity involving chromium cannot release dusts, fumes, or mists of chromium (VI) in concentrations at or above 0.5 μg/m³ as an 8-hour time-weighted average (TWA) under any expected conditions of use.
- Chromium (VI) [hexavalent chromium or Cr(VI)] means chromium with a valence of positive six, in any form and in any compound OSHA specifically regulated carcinogen

**Remarks:**
- See Table Z-2 for the exposure limit for any operations or sectors
where the exposure limit in § 1910.1026 is stayed or is otherwise not in effect
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Upper Respiratory Tract irritation
Cancer
Substances for which there is a Biological Exposure Index or Indices (see BEI® section)
Confirmed human carcinogen varies

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</table>

OSHA specifically regulated carcinogen

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.

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:Dermatril® (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.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
a) Appearance Form: solid
b) Odour No data available
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: 91 °C (196 °F) - lit.
f) Initial boiling point and boiling range No data available
g) Flash point Not applicable
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits No data available
k) Vapour pressure No data available
l) Vapour density No data available
m) Relative density 2.350 g/cm3
n) Water solubility No data available

o) Partition coefficient: n-octanol/water No data available

p) Auto-ignition temperature No data available

q) Decomposition temperature No data available

r) Viscosity No data available

s) Explosive properties No data available

t) Oxidizing properties The substance or mixture is classified as oxidizing with the category 2.

9.2 Other safety information
No data available

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
Strong reducing agents, Alcohols

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 50 mg/kg
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
May cause sensitisation by skin contact.

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

Rat
Liver
DNA damage
Hamster
Lungs
Sister chromatid exchange

Rat
DNA damage

**Carcinogenicity**
Carcinogenicity - Rat - Intratracheal
Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration: Tumors.
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 (Sodium dichromate dihydrate)
NTP: Known to be human carcinogen (Sodium dichromate dihydrate)
OSHA: OSHA specifically regulated carcinogen (Sodium dichromate dihydrate)

**Reproductive toxicity**
May cause congenital malformation in the fetus.
Presumed human reproductive toxicant
May cause reproductive disorders.

**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: HX7750000
Ulceration, Liver injury may occur., Kidney injury may occur.
Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

---

12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**
No data available

12.2 **Persistence and degradability**
No data available

12.3 **Bioaccumulative potential**
No data available

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**
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.
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. 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. (Sodium dichromate dihydrate)
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

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

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

15. REGULATORY INFORMATION

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

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
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<tbody>
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<td>Sodium dichromate dihydrate</td>
<td>7789-12-0</td>
<td>1993-04-24</td>
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**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 California to cause cancer.

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<td>2014-06-06</td>
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</table>

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

<table>
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<td>2014-06-06</td>
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</tbody>
</table>
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
Eye Dam.  Serious eye damage
H272  May intensify fire; oxidiser.
H300  Fatal if swallowed.
H312  Harmful in contact with skin.
H312 + H332  Harmful in contact with skin or if inhaled
H314  Causes severe skin burns and eye damage.
H318  Causes serious eye damage.
H332  Harmful 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.

HMIS Rating
Health hazard:  4
Chronic Health Hazard:  *
Flammability:  0
Physical Hazard  3

NFPA Rating
Health hazard:  3
Fire Hazard:  0
Reactivity Hazard:  3
Special hazard.I:  OX

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4  Revision Date: 05/27/2015  Print Date: 08/20/2015