1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Sodium dichromate dihydrate
Product Number : 398063
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
Carcinogen, Target Organ Effect, Toxic by inhalation., Highly toxic by ingestion, Harmful by skin absorption.,
Respiratory sensitiser, Corrosive, Teratogen, Reproductive hazard, Mutagen

Target Organs
Liver, Kidney

GHS Classification
Oxidizing solids (Category 2)
Acute toxicity, Oral (Category 2)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Respiratory sensitization (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)

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.
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.

Precautionary statement(s)
P201 Obtain special instructions before use.
P220 Keep/Store away from clothing/combustible materials.
P261 Avoid breathing 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.
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: 3
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

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

Potential Health Effects
Inhalation Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin Causes skin burns.
Eyes Causes eye burns.
Ingestion May be fatal if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Sodium bichromate

Formula: Cr₂Na₂O₇·2H₂O
Molecular Weight: 298.00 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>Sodium dichromate dihydrate</td>
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<tr>
<td>CAS-No.</td>
<td>7789-12-0</td>
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<tr>
<td>EC-No.</td>
<td>234-190-3</td>
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<tr>
<td>Index-No.</td>
<td>024-004-00-7</td>
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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

Conditions of flammability
Not flammable or combustible.

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. - Sodium 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 vapors, 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.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

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.
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: > 480 min  
Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: > 30 min  
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 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: solid
- Colour: no data available

**Safety data**

- pH: no data available
- Melting point/freezing point: Melting point/range: 91 °C (196 °F) - lit.
- Boiling point: no data available
- Flash point: not applicable
- Ignition temperature: no data available
- Autoignition temperature: no data available
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Vapour pressure: no data available
- Density: 2.350 g/cm³
- Water solubility: no data available
- Partition coefficient: n-octanol/water: no data available
- Relative vapour density: no data available
- Odour: no data available
- Odour Threshold: no data available
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
Strong reducing agents, Alcohols

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Sodium oxides, Chromium oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 50 mg/kg

Inhalation LC50
Dermal LD50

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 sensitization
May cause allergic respiratory reaction.

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

Genotoxicity in vitro - rat - Liver
DNA damage
Genotoxicity in vitro - Hamster - Lungs
Sister chromatid exchange
Genotoxicity in vivo - rat - Intratracheal
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)
1 - Group 1: Carcinogenic to humans (Sodium dichromate dihydrate)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Known to be human carcinogen (Sodium dichromate dihydrate)
OSHA:
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
May cause reproductive disorders.

Teratogenicity
May cause congenital malformation in the fetus.

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

Inhalation  Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion  May be fatal if swallowed.

Skin  Causes skin burns.

Eyes  Causes eye burns.

Signs and Symptoms of Exposure
Ulceration, Liver injury may occur., Kidney injury may occur.

Synergistic effects
no data available

Additional Information
RTECS: HX7750000

12. ECOLOGICAL INFORMATION

Toxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

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.

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.
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  
- 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. (Sodium dichromate dihydrate)  
- Marine pollutant: No

**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

**OSHA Hazards**
- Carcinogen, Target Organ Effect, Toxic by inhalation, Highly toxic by ingestion, Harmful by skin absorption, Respiratory sensitiser, Corrosive, Teratogen, Reproductive hazard, 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**
- The following components are subject to reporting levels established by SARA Title III, Section 313:
  - **Sodium dichromate dihydrate**
    - CAS-No: 7789-12-0  
    - Revision Date: 1993-04-24

**SARA 311/312 Hazards**
- Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**
- **Sodium dichromate dihydrate**
  - CAS-No: 7789-12-0  
  - Revision Date: 1993-04-24

**Pennsylvania Right To Know Components**
- **Sodium dichromate dihydrate**
  - CAS-No: 7789-12-0  
  - Revision Date: 1993-04-24

**New Jersey Right To Know Components**
- **Sodium dichromate dihydrate**
  - CAS-No: 7789-12-0  
  - Revision Date: 1993-04-24

**California Prop. 65 Components**
- **WARNING! This product contains a chemical known to the State of California to cause cancer.**
  - **Sodium dichromate dihydrate**
    - CAS-No: 7789-12-0  
    - Revision Date: 2008-12-19

**California Prop. 65 Components**
- **WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.**
  - **Sodium dichromate dihydrate**
    - CAS-No: 7789-12-0  
    - Revision Date: 2008-12-19

16. OTHER INFORMATION
Further information
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