

## SODIUM DICHROMATE

## Material Safety Data Sheet

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Mallinckrodt Chemical Inc.

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Emergency Telephone Number

314-539-1600

Effective Date: 04-06-89 Supersedes 07-29-85

## PRODUCT IDENTIFICATION:

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Synonyms: Sodium bichromate; sodium bichromate dihydrate; chromic acid,  
disodium salt, dihydrate

Formula CAS No.: 7789-12-0 (Hydrated)

Molecular Weight: 298.0

TSCA CAS No.: 10588-01-9 (Anhydrous)

Hazardous Ingredients: Sodium dichromate

Chemical Formula: Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> 2H<sub>2</sub>O

## PRECAUTIONARY MEASURES

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DANGER! POWERFUL OXIDIZER. CAUSES SEVERE BURNS. MAY CAUSE DELAYED BURNS OR  
EXTERNAL ULCERS. CONTACT WITH OTHER MATERIAL MAY CAUSE A FIRE. CONTAINS  
HEXAVALENT CHROMIUM. EXPOSURE MAY CREATE A CANCER RISK. MAY BE FATAL IF  
SWALLOWED. HARMFUL IF INHALED.

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Store in a tightly closed container.

Remove and wash contaminated clothing promptly.

Wash thoroughly after handling.

Use only with adequate ventilation. Do not breathe dust.

Do not get in eyes, on skin, or on clothing.

## EMERGENCY FIRST AID

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If swallowed, induce vomiting immediately by giving two glasses of water and  
sticking finger down throat. Never give anything by mouth to an unconscious  
person. If inhaled, remove to fresh air. If not breathing, give artificial  
respiration. If breathing is difficult, give oxygen. In case of contact,  
immediately flush eyes or skin with plenty of water for at least 15 minutes.  
In all cases call a physician.

SEE SECTION 5.

## Physical Data

## SECTION 1

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Appearance: Orange-red crystals or granules.

Odor: Odorless.

Solubility: Soluble in water (73%)

Boiling Point: Decomposes @ 400 C (752  
F)Vapor Density (Air=1): No information  
found.

Melting Point: 357 C (675 F)

Vapor Pressure (mm Hg): 0 @ 20 C (68 F)

Specific Gravity: 2.35 @ 25 C (77 F)

Evaporation Rate: No information  
found.

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 1

Other: Oxidizer

## Fire and Explosion

## SECTION 2

## Information

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Fire:

Not combustible, but substance is a strong

oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Explosion: Strong oxidants may explode when shocked, or if exposed to heat, flame, or friction. Also may act as initiation source for dust or vapor explosions.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

#### Reactivity Data

#### SECTION 3

##### ----- Stability:

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Stable under ordinary conditions of use and storage.

##### Hazardous Decomposition Products:

Oxides of chromium.

Hazardous Polymerization: Will not occur.

Incompatibilities: Hydrazine, acetic anhydride, ethanol, trinitrotoluene, hydroxylamine, strong acids, oxidizable materials especially in the presence of strong acid solutions.

#### Leak/Spill Disposal Information

#### SECTION 4

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Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from corrosives. Spills: Carefully sweep up and place in a metal container for disposal. Avoid dust dispersal. Flush area of spill with dilute ferrous sulfate or sodium sulfite solution and discard to sewer. Containerized solids may be sent to a RCRA approved hazardous waste disposal facility. Neutralize any remaining traces with soda ash. Disposal: Hexavalent chromium in solution may be reduced to trivalent chromium by a variety of reducing agents such as sodium bisulfite, sodium sulfite, sulfur dioxide or ferrous sulfate or chloride. The reduced chromium may then be precipitated as a hydrous chromic oxide by neutralizing to pH 7.5 with soda ash, caustic soda, or soda lime. Dispose of solids as hazardous waste in a RCRA approved facility. Reportable Quantity (RQ) (CWA/CERCLA): 10 lbs (Anhydrous)

Ensure compliance with local, state and federal regulations.

#### Health Hazard Information

#### SECTION 5

##### ----- A. Exposure/Health Effects

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Inhalation: Severe irritant. Corrosive action on mucous membranes and respiratory tract may produce nasal irritation and burning sensation in the throat.

Ingestion: Toxic. Corrosive to the mouth and gastrointestinal tract. Symptoms may include abdominal pain, dizziness, vomiting, intense thirst, shock, and kidney failure. A fatal dose may be as low as 5 grams.

Skin Contact: Corrosive. May produce skin rashes and ulcers. Bichromates are skin sensitizers.

Eye Contact: Corrosive. May cause conjunctivitis if in contact with eyes.

Chronic Exposure: Repeated skin contact may lead to an incapacitating dermatitis and slow healing ulcers. Repeated inhalation may cause perforation of the nasal septum. Bichromates are primarily toxic to the kidneys, liver, and gastrointestinal tract.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin or eyes problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

## B. FIRST AID

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

Skin Exposure: Remove any contaminated clothing. Wipe off excess from skin. Wash skin with plenty of water for at least 15 minutes. Get medical attention promptly.

Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

## TOXICITY

(RTECS, 1986)

Oral rat LD50: 50 mg/kg Aquatic toxicity rating TLM 96: 1000 - 100 ppm  
 Microorganism and InVitro mammalian cell mutation references cited Hexavalent Chromium compounds are listed as carcinogens by the National Toxicology Program (NTP) and by the International agency for Research on Cancer (IARC).  
 Carcinogenic Determination - Animal / Inadequate Data (IARC 23,302 80)  
 Hexavalent Chromium Compounds: Sufficient evidence for carcinogenicity in short term testing (IARC Suppl.4, 1982).

## Occupational Control Measures

### SECTION 6

Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 0.1 mg/m3  
 Ceiling for chromates -ACGIH Threshold Limit Value (TLV): 0.05 mg/m3 for CrVI compounds NIOSH Criteria Document Recommendation: Occupational Exposure to Cr(VI) : 25 ug/m3 (TWA) Ceiling limit :50 ug/m3/15M.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators  
 (NIOSH Approved)

If the TLV is exceeded, a dust/mist respirator with chemical goggles may be worn, in general, up to ten times the TLV. Consult respirator supplier for limitations. Alternatively, a supplied air full facepiece respirator or airlined hood may be

worn.

## Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

## Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

## Storage and Special Information SECTION 7

Protect against physical damage. Store in a dry location separate from combustible, organic or other readily oxidizable materials. Avoid storage on wood floors. Remove and dispose of any spilled dichromates; do not return to original containers. Wear special protective equipment (Sec. 6) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace.

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## Addendum to Material Safety Data Sheet

## REGULATORY STATUS

This Addendum Must Not Be  
Detached from the MSDS  
Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS  
must include a copy of this addendum

Hazard Categories for SARA  
Section 311/312 Reporting

| Acute | Chronic | Fire | Pressure | Reactive |
|-------|---------|------|----------|----------|
| ----  | -----   | ---- | -----    | -----    |
| X     | X       |      |          | X        |

| Product or Components<br>of Product: | SARA EHS<br>Sec. 302 |     | SARA Sec. 313<br>Chemicals |                      | CERCLA<br>Sec. 103 | RCRA<br>Sec. |
|--------------------------------------|----------------------|-----|----------------------------|----------------------|--------------------|--------------|
|                                      | RQ                   | TPQ | Name<br>List               | Chemical<br>Category | RQ lbs             | 261.33       |
| -----                                | ---                  | --- | ----                       | -----                | -----              | -----        |

SODIUM DICHROMATE  
(10588-01-9)

|    |    |    |                 |    |    |
|----|----|----|-----------------|----|----|
| No | No | No | Chromium compou | No | No |
|----|----|----|-----------------|----|----|

SARA Section 302 EHS RQ:  
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:

Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (\*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:

Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

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