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MATERIAL SAFETY DATA SHEET (MSDS)

SODIUM DICHROMATE LR (DIHYDRATE)

1. Product Identification

Synonyms: Sodium bichromate
CAS No.: 7789-12-0

Product Coad: S0187705000

Molecular Weight: 298
Chemical Formula: Cr₂Na₂O₇·2H₂O

2. Composition/Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7789-12-0	Sodium dichromate dihydrate	99-100	unlisted

3. Hazards Identification

EMERGENCY OVERVIEW

Appearance: orange crystals.

Danger! Toxic if swallowed. Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. Causes burns by all exposure routes. Harmful if absorbed through the skin. May impair fertility. May cause harm to the unborn child. Cancer hazard. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Contact with other material may cause fire. May cause heritable genetic damage. May cause sensitization by inhalation and by skin contact.

Target Organs: Blood, kidneys, heart, lungs, respiratory system, eyes, skin, bladder, ureter.

Potential Health Effects

Eye: Causes eye burns. Contact with eyes may cause severe irritation, and possible eye burns. May cause redness, pain, blurred vision and possible eye damage.

Skin: Harmful if absorbed through the skin. Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause 'chrome ulcers' which causes ulceration of the skin, especially if the skin is

Ingestion: Poison by ingestion. Causes gastrointestinal tract burns. May cause kidney damage. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns.

Inhalation: May cause allergic respiratory reaction. May cause liver and kidney damage. Causes chemical burns to the respiratory tract. Excessive inhalation may cause minor respiratory irritation. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Toxic if inhaled. May cause burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

Chronic: Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. Prolonged or repeated exposure may lead to asthma and perforation of the nasal septum. May cause respiratory tract cancer. May cause liver and kidney damage. Chronic inhalation may cause nasal septum ulceration and perforation. May cause cancer in humans. May alter genetic material. May impair fertility.

4. First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

5. Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish

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surrounding fire. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 2; Special Hazard: OX

6. Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Avoid generating dusty conditions. Carefully scoop up and place into appropriate disposal container.

7. Handling and Storage

Handling: Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Avoid contact with clothing and other combustible materials. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from reducing agents.

8. Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium dichromate dihydrate	0.05 mg/m3 TWA (as Cr) (listed under Chromium (VI) compounds- water soluble).	0.001 mg/m3 TWA (as Cr) (listed under Chromates).15 mg/m3 IDLH (as Cr(VI)) (listed under Chromates).	5 æg/m3 TWA (listed under Chromium (VI) compounds).0.1 mg/m3 Ceiling (as CrO3, applies to any operations or sectors for which the H exavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect) (listed under Chromates).2.5 æg/m3 Action Level (as Cr.); 5 æg/m3 TWA (as Cr. Cancer hazard - See 29 CFR 1910.1026) (listed under Chromium (VI) compounds).
Sodium dichromate, anhydrous	0.05 mg/m3 TWA (as Cr) (listed under Chromium (VI) compounds- water soluble).	0.001 mg/m3 TWA (as Cr) (listed under Chromates).15 mg/m3 IDLH (as Cr(VI)) (listed under Chromates).	5 æg/m3 TWA (listed under Chromium (VI) compounds).0.1 mg/m3 Ceiling (as CrO3, applies to any operations or sectors for which the H exavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect) (listed under Chromates).2.5 æg/m3 Action Level (as Cr.); 5 æg/m3 TWA (as Cr. Cancer hazard - See 29 CFR 1910.1026) (listed under Chromium (VI) compounds).

OSHA Vacated PELs: Sodium dichromate dihydrate: No OSHA Vacated PELs are listed for this chemical. Sodium dichromate, anhydrous: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. Physical and Chemical Properties

Physical State: Crystals

Appearance: orange to red - orange

Odor: odorless

pH: 3.5-3.9 (5% aq.sol.)

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not applicable.

Viscosity: Not available.

Boiling Point: 400 deg C @760mmHg

Freezing/Melting Point: 357 deg C

Decomposition Temperature: 400 deg C

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Solubility: 1800 g/l water (20°C)

Specific Gravity/Density: Not available.

Molecular Formula: Cr₂Na₂O₇·2H₂O

Molecular Weight: 298

10. Stability and Reactivity

Chemical Stability: Not currently available.

Conditions to Avoid: Incompatible materials, dust generation, combustible materials, organic materials.

Incompatibilities with Other Materials: Water, oxidizing agents, reducing agents, acids, strong bases, acetic anhydride, hydrazine, hydroxylamine, iron, magnesium, nitric acid, oils, sulfuric acid, boron, hydrochloric acid, glycerol, metal powders, silicon, ethanol, 2-propanol.

Hazardous Decomposition Products: Oxygen, sodium oxide, toxic chromium oxide fumes.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

RTECS#:

CAS# 7789-12-0: HX7750000

CAS# 10588-01-9: HX7700000; HX7720000

LD50/LC50:

Not available.

CAS# 10588-01-9:

Oral, rat: LD50 = 50 mg/kg;

LC50 (inhalation, rat): 0.124 mg/l/4H, LD50 (dermal, rabbit): 1000 mg/kg.

Carcinogenicity:

CAS# 7789-12-0:

ACGIH: A1 - Confirmed Human Carcinogen (listed as 'Chromium (VI) compounds- water soluble').

California: carcinogen, initial date 2/27/87 (listed as Chromium (VI) compounds).

NTP: Known carcinogen (listed as Chromium (VI) compounds).

IARC: Group 1 carcinogen (listed as Chromium (VI) compounds).

CAS# 10588-01-9:

ACGIH: A1 - Confirmed Human Carcinogen (listed as 'Chromium (VI) compounds- water soluble').

California: carcinogen, initial date 2/27/87 (listed as Chromium (VI) compounds).

NTP: Known carcinogen (listed as Chromium (VI) compounds).

IARC: Group 1 carcinogen

Epidemiology: Increased incidences of respiratory cancer have been found in chromium (VI) workers.

Teratogenicity: No information found.

Reproductive Effects: No information found.

Mutagenicity: A mutagenic effect has been demonstrated in animal studies on mammals.

Neurotoxicity: No information found.

Other Studies:

12. Ecological Information

Ecotoxicity: Fish: Fathead Minnow: EC50 = 425-488 mg/L; 96 H; LC50 Fish: Bluegill/Sunfish: EC50 = 425-488 mg/L; 96H; LC50 No data available.

Environmental: No information available.

Physical: No information available.

Other: Do not empty into drains. This chemical is not likely to bioconcentrate.

13. Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are

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listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

14. Transport Information

	US DOT	Canada TDG
Shipping Name:	OXIDIZING SOLID, TOXIC, N.O.S.	OXIDIZING SOLID, TOXIC, N.O.S.*
Hazard Class:	5.1	5.1
UN Number:	UN3087	UN3087
Packing Group:	II	II

15. Regulatory Information

US FEDERAL

TSCA

CAS# 7789-12-0 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 10588-01-9 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

CAS# 10588-01-9: Section 6, 0.1 % de minimus concentration [see 40 CFR 749.68]

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 10588-01-9: 10 lb final RQ; 4.54 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7789-12-0: immediate, delayed, fire.

CAS # 10588-01-9: immediate, delayed, fire.

Section 313

This material contains Sodium dichromate dihydrate (listed as Chromium (VI) compounds), 99-100%, (CAS# 7789-12-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Sodium dichromate, anhydrous (listed as Chromium (VI) compounds), -, (CAS# 10588-01-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 10588-01-9 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7789-12-0 can be found on the following state right to know lists: Pennsylvania, (listed as Chromium (VI) compounds), Minnesota, (listed as Chromium (VI) compounds- water soluble), Minnesota, (listed as Chromium (VI) compounds).

CAS# 10588-01-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Chromium (VI) compounds- water soluble), Minnesota, (listed as Chromium (VI) compounds), Massachusetts.

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Sodium dichromate dihydrate, listed as 'Chromium (VI) compounds', a chemical known to the state of California to cause cancer. WARNING: This product contains Sodium dichromate, anhydrous, listed as 'Chromium (VI) compounds', a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

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European Labeling in Accordance with EC Directives

Hazard Symbols:

T+ O N

Risk Phrases:

R 21 Harmful in contact with skin.
 R 25 Toxic if swallowed.
 R 26 Very toxic by inhalation.
 R 34 Causes burns.
 R 37/38 Irritating to respiratory system and skin.
 R 41 Risk of serious damage to eyes.
 R 42/43 May cause sensitization by inhalation and skin contact.
 R 43 May cause sensitization by skin contact.
 R 45 May cause cancer.
 R 46 May cause heritable genetic damage.
 R 8 Contact with combustible material may cause fire.
 R 49 May cause cancer by inhalation.
 R 48/23 Toxic : danger of serious damage to health by prolonged exposure through inhalation.
 R 60 May impair fertility.
 R 61 May cause harm to the unborn child.
 R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S 53 Avoid exposure - obtain special instructions before use.
 S 60 This material and its container must be disposed of as hazardous waste.
 S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 7789-12-0: No information available.
 CAS# 10588-01-9: 3

Canada - DSL/NDSL

CAS# 10588-01-9 is listed on Canada's DSL List.

Canada – WHMIS

This product has a WHMIS classification of D2A, C, D1A.
 This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7789-12-0 (listed as Chromium (VI) compounds) is listed on the Canadian Ingredient Disclosure List.
 CAS# 10588-01-9 is listed on the Canadian Ingredient Disclosure List.

16. Other Information

Product Use:

Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

End of document