Material Safety Data Sheet

Sodium dichromate dihydrate
MSDS# 21195

Section 1 - Chemical Product and Company Identification

MSDS Name:
Sodium dichromate dihydrate
Catalog Numbers:
S/3560/71
S/3561/53
Synonyms:
Sodium bichromate
Company Identification:Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call:(01509) 231166
Emergency Number, Europe:
01509 231166

Section 2 - Composition, Information on Ingredients

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CAS#:          7789-12-0
Chemical Name: Sodium dichromate dihydrate
%:             99-100
EINECS#:      unlisted
Hazard Symbols:
Risk Phrases:
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Text for R-phrases: see Section 16
Hazard Symbols:
T+ O N
Risk Phrases:
45 46 49 60 61 21 25 26 34 37/38 41 42/43 43 48/23
50/53 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Harmful in contact with skin. Toxic if swallowed. Very toxic by inhalation. Causes burns. Irritating to respiratory system and skin.
Risk of serious damage to eyes. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact. May cause cancer. May cause heritable genetic damage. Contact with combustible material may cause fire. May cause cancer by inhalation. Toxic: danger of serious damage to health by prolonged exposure through inhalation. May impair fertility. May cause harm to the unborn child. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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.
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.

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.

Section 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.

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

Section 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.

Section 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.

Section 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
CAS# 7789-12-0:
United Kingdom, WEL - TWA: (chromium (vi) compounds): 0.05 mg/m³ TWA (as Cr)
United Kingdom, WEL - STEL: (chromium (vi) compounds): 0.15 mg/m³ STEL (as Cr)
United States OSHA: 5 µg/m³ TWA (Chromium (VI) compounds): 0.1 mg/m³ Ceiling (as CrO₃, applies to any operations or sectors for which the hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect) (Chromates): 2.5 µg/m³ Action Level (as Cr): 5
Belgium - TWA: (chromium (vi) compounds- water soluble): 0.05 mg/m³ TWA (as Cr)
France - VME: (chromium (vi) compounds): 0.05 mg/m³ VME (as Cr)
Germany: (chromium (vi) compounds): 0.05 mg/m³ VME (as Cr)
Japan: (chromium (vi) compounds): 0.05 mg/m³ OEL (as Cr); 0.01 mg/m³ OEL (certain compounds, as Cr)
Malaysia: (chromium (vi) compounds- water soluble): 0.05 mg/m³ TWA (as Cr)
Netherlands: (chromium (vi) compounds- water soluble): 0.05 mg/m³ STEL
Netherlands: (chromium (vi) compounds- water soluble): 0.025 mg/m³ MAC
Spain: 0.05 mg/m³ VLA-ED (as Cr)
CAS# 10588-01-9:
United Kingdom, WEL - TWA: (chromium (vi) compounds): 0.05 mg/m³ TWA (as Cr)
United Kingdom, WEL - STEL: (chromium (vi) compounds): 0.15 mg/m³ STEL (as Cr)
United States OSHA: 5 µg/m³ TWA (Chromium (VI) compounds): 0.1 mg/m³ Ceiling (as CrO₃, applies to any operations or sectors for which the hexavalent Chromium standard [29 CFR 1910.1026] is stayed or is otherwise not in effect) (Chromates): 2.5 µg/m³ Action Level (as Cr): 5
Belgium - TWA: (chromium (vi) compounds- water soluble): 0.05 mg/m³ TWA (as Cr)
France - VME: (chromium (vi) compounds): 0.05 mg/m³ VME (as Cr)
Germany: (chromium (vi) compounds): 0.05 mg/m³ VME (as Cr)
Japan: (chromium (vi) compounds): 0.05 mg/m³ OEL (as Cr); 0.01 mg/m³ OEL (certain compounds, as Cr)
Malaysia: (chromium (vi) compounds - water soluble): 0.05 mg/m³ TWA (as Cr)
Netherlands: (chromium (vi) compounds - water soluble): 0.05 mg/m³ STEL
Netherlands: (chromium (vi) compounds - water soluble): 0.025 mg/m³ MAC
Spain: 0.05 mg/m³ VLA-ED (as Cr)

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.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Color: orange to red - orange
Odor: odorless
pH: 3.5-3.9 (5% aq.sol.)
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: 400 deg C @760mmHg (752.00 F)
Freezing/Melting Point: 357 deg C (674.60 F)
Autoignition Temperature: Not available
Flash Point: Not available
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: 1800 g/l water (20 C)
Specific Gravity/Density: Not available
Molecular Formula: Cr₂Na₂O₇·2H₂O
Molecular Weight: 298

Section 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.

Section 11 - Toxicological Information

RTECS#:
CAS# 7789-12-0: HX7750000
CAS# 10588-01-9: HX7700000 HX7720000
LD50/LC50:
RTECS: Not available.
RTECS: CAS# 10588-01-9: Oral, rat: LD50 = 50 mg/kg;
Other: LC50 (inhalation, rat): 0.124 mg/l/4H, LD50 (dermal, rabbit):
1000 mg/kg.

Carcinogenicity:
Sodium dichromate dihydrate -
California: carcinogen, initial date 2/27/87 (Chromium (VI) compounds).
NTP: Known carcinogen (Chromium (VI) compounds).
IARC: Group 1 carcinogen (Chromium (VI) compounds).
Sodium dichromate, anhydrous -
California: carcinogen, initial date 2/27/87 (Chromium (VI) compounds).
NTP: Known carcinogen (Chromium (VI) compounds).
IARC: Group 1 carcinogen

Other: See actual entry in RTECS for complete information. Mutagen.
Teratogen.

Section 12 - Ecological Information

Ecotoxicity:
Fish: Fathead Minnow: EC50 = 425-488 mg/L; 96 H; LC50
Bluegill/Sunfish: EC50 = 425-488 mg/L; 96H; LC50

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

IATA
Shipping Name: OXIDIZING SOLID, TOXIC, N.O.S.*
Hazard Class: 5.1 (6.1)
UN Number: 3087
Packing Group: II

IMO
Shipping Name: OXIDIZING SOLID, TOXIC, N.O.S.
Hazard Class: 5.1 (6.1)
UN Number: 3087
Packing Group: II

RID/ADR
Shipping Name: OXIDIZING SOLID, TOXIC, N.O.S.
Hazard Class: 5.1 (6.1)
UN Number: 3087
Packing Group: II

USA RQ: CAS# 10588-01-9: 10 lb final RQ; 4.54 kg final RQ
Severe Marine Pollutant

Section 15 - Regulatory Information
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: T+ O N
Risk Phrases:

R 45  May cause cancer.
R 46  May cause heritable genetic damage.
R 49  May cause cancer by inhalation.
R 61  May cause harm to the unborn child.
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 48/23  Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R 50/53  Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 60  May impair fertility.
R 8  Contact with combustible material may cause fire.

Safety Phrases:

S 53  Avoid exposure—obtain special instructions before use.
S 45  In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
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: Not available
CAS# 10588-01-9: 3

Canada

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

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

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

Section 16 - Other Information

Text for R-phrases from Section 2

MSDS Creation Date:
10/29/1998
Revision #10 Date
6/06/2007

Revisions were made in Sections:
3, 4, 5, 6, 7, 8, 9, 10, 11, 1

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