

Chromium(VI) oxide
MSDS# 95984

Section 1 - Chemical Product and Company Identification

MSDS Name:

Chromium(VI) oxide

Catalog Numbers:

19661-0000, 19661-0010, 19661-0250, 19661-2500, 21410-0000, 21410-0010,
21410-0050, 21410-1000, 40523-0000, 40523-0025, 40523-5000, C/5840/53,
C/5840/62, C/5880/50, C/5880/53, C/5880/65, C/5920/50, C/5920/53,

C/5920NC

Synonyms:

Chromic acid; Chromic anhydride; Chromium(VI) oxide; Chromium trioxide.

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

CAS#: 1333-82-0
Chemical Name: Chromium trioxide
%: >98
EINECS#: 215-607-8

Hazard Symbols:

T+ O N

Risk Phrases:

45 46 22 24/25 26 35 42/43 48/23 50/53 62 9

Section 3 - Hazards Identification
EMERGENCY OVERVIEW

Harmful if swallowed. Very toxic by inhalation. Causes severe burns. May cause sensitization by inhalation and skin contact. May cause cancer. May cause heritable genetic damage. Explosive when mixed with combustible material. Toxic in contact with skin and if swallowed. Toxic : danger of serious damage to health by prolonged exposure through inhalation. Possible risk of impaired fertility. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Eye:

Causes severe eye burns. May cause irreversible eye injury. Causes redness and pain. May cause permanent corneal

opacification.

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 deep, penetrating ulcers of the skin. Causes redness and pain. Chronic exposure to water insoluble hexavalent chromium compounds has been shown to be associated with lung cancer and gastrointestinal tract tumors. Substance is readily absorbed through the skin.

Ingestion:

Harmful if swallowed. May cause severe and permanent damage to the

digestive tract. Causes gastrointestinal tract burns. May cause liver and kidney damage. Exposure may cause anemia and other blood abnormalities. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). May cause systemic effects.

Inhalation:

May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. May cause asthmatic attacks due to allergic sensitization of the respiratory tract. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Prolonged exposure to dusts, vapors, or mists may result in the perforation of the nasal septum. May cause systemic effects.

Chronic:

Prolonged or repeated inhalation may cause nosebleeds, nasal congestion, erosion of the teeth, perforation of the nasal septum, chest pain and bronchitis. Prolonged or repeated eye contact may cause conjunctivitis. Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration.

Chronic ingestion may cause effects similar to those of acute ingestion. May cause liver and kidney damage. Chronic exposure to water insoluble hexavalent chromium compounds has been shown to be associated with lung cancer and gastrointestinal tract tumors. Adverse reproductive effects have been reported in animals.

Possible

risk of harm to the unborn child. Confirmed Human Carcinogen. May impair fertility.

Section 4 - First Aid Measures

Eyes:

Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin:

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

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray

to

keep fire-exposed containers cool. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Containers may explode in the heat

of

a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media:

Use extinguishing media most appropriate for the surrounding fire. Contact professional fire-fighters immediately. Cool containers

with

flooding quantities of water until well after fire is out. May require flooding with water in order to eliminate hazardous

reactions

since the materials generate their own oxygen.

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Clean up spills immediately, observing precautions in the

Protective

Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid

generating

dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not

breathe

dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid contact with clothing and

other

combustible materials. Do not ingest or inhale. Use with adequate ventilation. Discard contaminated shoes.

Storage:

Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated location.

Separate

from combustible materials, halogens, sulfides, metals. See also

NFPA

430, Code for the Storage of Liquid and Solid Oxidizers.

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 adequate general

or

local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

CAS# 1333-82-0:

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).2.5 µg/m3 Action Level (as Cr.); 5 µg/m3 TWA (as Cr. Cancer hazard - See 29 CFR 1910.1026) (Chromium (VI) compounds).

Belgium - TWA: (chromium (vi) compounds- water soluble): 0.05 mg/m3 TWA (as Cr)

France - VME: 0.05 mg/m3 VME (as Cr)

France - VLE: 0.1 mg/m3 VLCT (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

Russia: 0.01 mg/m3 TWA (aerosol)

Russia: 0.03 mg/m3 STEL (aerosol)

Spain: 0.05 mg/m3 VLA-ED

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 a chemical apron. Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear a chemical apron. Wear appropriate protective gloves 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:

Solid

Color:

dark red to purple

Odor:

odorless

pH:

Vapor Pressure:

Not available

Viscosity:

No information

Boiling Point:

482 deg F (250.00°C)

Freezing/Melting Point:

385 deg F (196.11°C)

Autoignition Temperature:

None available.

Flash Point:

250 deg C (482.00 deg F)

Explosion Limits: Lower:Not available

Explosion Limits: Upper:Not available

Decomposition Temperature:

Solubility in water:

Soluble

Specific Gravity/Density:

2.7 (Water=1)

Molecular Formula: CrO3
Molecular Weight: 99.99

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures. Hygroscopic:
absorbs moisture or water from the air.

Conditions to Avoid:

Incompatible materials, dust generation, moisture, excess heat.

Incompatibilities with Other Materials

Metals, reducing agents, bases, acetic acid, acetic anhydride, alcohols, alkali metals, ammonia, chlorine trifluoride, finely powdered metals, halogens, phosphorus, diethyl ether, dimethyl formamide, acetone, diethyl formamide, methanol, glycerol, organics, ethanol, camphor, pyridine, hydrocarbons, ketones, turpentine, combustible materials, attacks metals in the presence of moisture, Aqueous solution is strongly acidic., Can ignite organic matter on contact., sulfides.

Hazardous Decomposition Products

Chromium fumes, possible trivalent chromium formation with liberated oxygen..

Hazardous Polymerization

Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 1333-82-0: GB6650000

LD50/LC50:

RTECS: CAS# 1333-82-0: Oral, mouse: LD50 = 127 mg/kg;

Oral, rat: LD50 = 80 mg/kg;.

Other: TDLO/TCLO-LOWEST PUBLISHED TOXIC DOSE/CONC. Human TCLO:

ROUTE: Inhalation: DOSE: 110ug/m3.

Carcinogenicity:

Chromium trioxide -

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

NTP: Known carcinogen

IARC: Group 1 carcinogen

Other:

See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:

Fish: Pseudomonas putida:

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

IATA

Shipping Name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1 (8)
UN Number: 1463
Packing Group: II

IMO

Shipping Name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1 (8)
UN Number: 1463
Packing Group: II

RID/ADR

Shipping Name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1
UN Number: 1463
Packing Group: II

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 22 Harmful if swallowed.
R 24/25 Toxic in contact with skin and if swallowed.
R 26 Very toxic by inhalation.
R 35 Causes severe burns.
R 42/43 May cause sensitization by inhalation and 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 62 Possible risk of impaired fertility.
R 9 Explosive when mixed with combustible material.

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.

WGK (Water Danger/Protection)

CAS# 1333-82-0: 3

Canada

CAS# 1333-82-0 is listed on Canada's DSL List

US Federal

TSCA

CAS# 1333-82-0 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:

6/02/1998

Revision #9 Date

5/16/2007

Revisions were made in Sections:

2, 3, 15

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