

# Mallinckrodt

## CHROMIUM TRIOXIDE

### Material Safety Data Sheet

Emergency Telephone Number  
314-982-5000

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Effective Date: 06-13-85

#### PRODUCT IDENTIFICATION:

Synonyms: Chromium (VI) oxide (1:3); chromic acid, solid; chromic anhydride  
Formula CAS No.: 1333-82-0 Molecular Weight: 99.99  
Hazardous Ingredients: Chemical Formula: CrO<sub>3</sub>  
Not Applicable.

#### PRECAUTIONARY MEASURES

DANGER! POWERFUL OXIDIZER. CAUSES SEVERE BURNS. MAY CAUSE DELAYED BURNS OR EXTERNAL ULCERS. CONTACT WITH OTHER MATERIAL MAY CAUSE A FIRE. MAY BE FATAL IF SWALLOWED. HEXAVALENT CHROMIUM COMPOUNDS POSE A POSSIBLE CANCER HAZARD BASED ON TEST WITH LABORATORY ANIMALS. EXPOSURE MAY CREATE A CANCER RISK.

Do not get in eyes, on skin, or on clothing.  
Do not breathe dust or mist from solutions.  
Store in a tightly closed container.  
Use with adequate ventilation.  
Remove and wash contaminated clothing promptly.  
Wash thoroughly after handling.  
Do not store near combustible materials.

#### EMERGENCY/FIRST AID

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. If swallowed, induce vomiting immediately by giving two glasses of water, or milk if available 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 all cases call a physician.  
SEE SECTION 5.

DOT Hazard Class: Oxidizer

#### Physical Data

#### SECTION 1

Appearance: Dark red deliquescent solid.  
Odor: Odorless.  
Solubility: 63g/100g water @ 20°C (68°F)  
Boiling Point: Decomposes on melting  
Melting Point: 197°C (387°F)  
Specific Gravity: 2.7  
Vapor Density (Air=1): No information found.  
Vapor Pressure (mm Hg): No information found.  
Evaporation Rate: No information found.

#### Fire and Explosion Information

#### SECTION 2

Fire:

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.  
Will ignite on contact with acetic acid and alcohol. Releases oxygen upon decomposition, increasing the fire hazard.

Explosion:

Contact with oxidizable substances may cause extremely violent combustion.  
Containers may explode if involved in a fire.

Fire Extinguishing Media:

Use water, however, the decomposing material will form a hot viscous foam and caution should be exercised against the possibility of a steam explosion.

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:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Decomposes at high temperatures to form oxygen and the less hazardous trivalent chromium oxide (Cr<sub>2</sub>O<sub>3</sub>).

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Any combustible, organic or other readily oxidizable material (paper, wood, sulfur, aluminum or plastics), arsenic, ammonia gas, hydrogen sulfide, phosphorus potassium, sodium and selenium will produce incandescence.

#### Leak/Spill Disposal Information

#### SECTION 4

Ventilate area of leak or spill. Clean-up personnel require protective clothing and respiratory protection from dust.

Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate dust.

Disposal: Whatever cannot be saved for reclamation may be disposed in a RCRA approved hazardous waste facility.  
Reportable Quantity (RQ) (CMA/CECMA): 1000 lbs.

Ensure compliance with local, state and federal regulations.

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## Health Hazard Information

## SECTION 5

## A. Exposure/Health Effects

## Inhalation:

Dust can cause severe irritation of the nose, throat, bronchial tubes and lungs. A single exposure to massive concentrations of sprays or mist from solutions can severely damage the lungs.

## Ingestion:

May cause violent gastrointestinal irritation with vomiting and diarrhea. Kidney and liver damage may occur. Estimated mean lethal dose is between 1 and 10 grams.

## Skin Contact:

Can cause ulceration of the skin. Skin may become sensitized. Absorption through broken or damaged skin can cause systemic poisoning, affecting kidney and liver functions, and may be fatal.

## Eye Contact:

Contact with dust or solutions may cause severe corneal injury or blindness.

## Chronic Exposure:

Repeated or prolonged exposure can cause ulceration and perforation of the nasal septum, respiratory irritation, liver damage and ulceration of the skin.

## Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the 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, or milk if available and sticking finger down throat. Call a physician immediately. Never give anything by mouth to an unconscious person.

## Skin Exposure:

Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists.

## Eye Exposure:

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

## C. TOXICITY DATA (RTECS, 1982)

Mutation references cited.  
Reproductive effects cited.  
Tumorigenic effects cited.  
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/M<sup>3</sup> (ceiling)  
ACGIH Threshold Limit Value (TLV):  
0.05 mg/M<sup>3</sup> (as water soluble Cr<sup>6+</sup>)

## Ventilation System:

A system of local exhaust is recommended to keep employee exposures below the Airborne Exposure Limit. Local exhaust ventilation is generally preferred because it can control the emissions of the dust or vapor at its source, preventing dispersion of it in 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 boot gloves, lab coat, apron or coveralls to prevent skin contact.

## Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing from 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

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Do not store on wooden floors.

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