

MSDS – Chromium Trioxide

MATERIAL SAFETY DATA SHEET (MSDS) / SAFETY DATA SHEET (SDS)

1. Identification

Product Name: Chromium Trioxide

Synonyms: Chromium(VI) oxide, Chromic anhydride

Chemical Formula: CrO₃

CAS Number: 1333-82-0

Recommended Use: Industrial chemical; laboratory reagent; surface treatment processes

Restrictions on Use: Not for consumer use

2. Hazard Identification

GHS Classification:

Oxidizing Solids – Category 1

Acute Toxicity (Oral) – Category 3

Acute Toxicity (Inhalation) – Category 2

Skin Corrosion – Category 1B

Serious Eye Damage – Category 1

Carcinogenicity – Category 1A

Reproductive Toxicity – Category 1B

Specific Target Organ Toxicity (Repeated Exposure) – Category 1

Hazardous to the Aquatic Environment – Acute & Chronic Category 1

Signal Word: DANGER

Hazard Statements:

May intensify fire; oxidizer

Fatal if inhaled

Toxic if swallowed

Causes severe skin burns and eye damage

May cause cancer

May damage fertility or the unborn child

Causes damage to organs through prolonged or repeated exposure

Very toxic to aquatic life with long lasting effects

Precautionary Statements:

Avoid breathing dust or mist. Use only outdoors or in a well-ventilated area. Wear protective gloves, clothing, eye and face protection. Avoid release to the environment.

3. Composition / Information on Ingredients

Substance: Chromium Trioxide

Purity: ≥99%

CAS Number: 1333-82-0

4. First-Aid Measures

Inhalation: Move person to fresh air immediately. Administer oxygen if breathing is difficult. Seek immediate medical attention.

Skin Contact: Immediately remove contaminated clothing. Rinse skin with water for at least 15 minutes. Seek medical attention.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present. Seek immediate medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth with water. Seek immediate medical attention.

5. Fire-Fighting Measures

Suitable Extinguishing Media: Water spray (for cooling), dry chemical, foam

Specific Hazards: Strong oxidizer; may intensify fire. Emits toxic chromium fumes when heated.

Protective Equipment: Self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Personal Precautions: Evacuate area. Wear full PPE including respirator.

Environmental Precautions: Prevent entry into waterways or soil.

Clean up Methods: Carefully collect using non-combustible tools. Neutralize with reducing agents if appropriate. Dispose according to regulations.

7. Handling and Storage

Handling: Avoid dust generation. Do not breathe dust or mist. Handle under strict industrial hygiene controls.

Storage: Store in tightly closed containers in a cool, dry, well-ventilated area away from organic materials, combustibles, and reducing agents.

8. Exposure Controls / Personal Protection

Exposure Limits:

OSHA PEL (Cr VI): 5 µg/m³ (8-hr TWA)

ACGIH TLV: 0.0002 mg/m³

Engineering Controls: Local exhaust ventilation required.

Personal Protective Equipment:

Respiratory Protection: Approved respirator for Cr(VI)

Skin Protection: Chemical-resistant gloves and clothing

Eye Protection: Safety goggles and face shield

9. Physical and Chemical Properties

Appearance: Dark red crystalline solid

Odour: Odourless

Melting Point: 196 °C

Boiling Point: Decomposes

Solubility: Soluble in water

pH: Strongly acidic (aqueous solution)

10. Stability and Reactivity

Stability: Stable under recommended conditions

Reactivity: Strong oxidizer

Incompatible Materials: Organic materials, reducing agents, alcohols, metals

Hazardous Decomposition Products: Chromium fumes, oxygen

11. Toxicological Information

Routes of Exposure: Inhalation, ingestion, skin contact

Acute Effects: Severe burns, respiratory distress

Chronic Effects: Cancer, kidney and liver damage, respiratory sensitization

Carcinogenicity: Known human carcinogen (Cr VI compounds)

12. Ecological Information

Eco toxicity: Extremely toxic to aquatic organisms

Persistence: Persistent and bio accumulative

Mobility: High mobility in water

13. Disposal Considerations

Dispose of contents and container as hazardous waste in accordance with local, regional, and national regulations.

14. Transport Information

UN Number: UN 1463

Proper Shipping Name: Chromium Trioxide, Anhydrous

Hazard Class: 5.1 (Oxidizer), 6.1 (Toxic)

Packing Group: II

15. Regulatory Information

Subject to OSHA, EPA, REACH, and other international chemical safety regulations. Classified as a carcinogenic substance.

16. Other Information

This MSDS is provided for informational purposes only and does not constitute a guarantee of product specifications. Users must ensure compliance with all applicable laws and regulations.

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