Material Safety Data Sheet
Chromerge Cleaning Solution

ACC# 04919

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Chromerge Cleaning Solution
**Catalog Numbers:** C577 12, C57712, S779641, S79964-1, S799641
**Synonyms:** None
**Company Identification:**
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
**For information, call:** 201-796-7100
**Emergency Number:** 201-796-7100
**For CHEMTREC assistance, call:** 800-424-9300
**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1333-82-0</td>
<td>Chromium Trioxide</td>
<td>50.0</td>
<td>215-607-8</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>50.0</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

**Hazard Symbols:** O C
**Risk Phrases:** 35 43 8

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: dark red-brown liquid. **Danger!** Corrosive. Causes severe eye burns. Eye contact may result in permanent eye damage. May cause severe respiratory and digestive tract irritation with possible burns. May cause pulmonary edema. May cause liver and kidney damage. May cause cancer based on animal studies. May cause allergic skin reaction. May cause severe allergic respiratory reaction. May cause blood abnormalities.

**Target Organs:** Blood, kidneys, liver, respiratory system, gastrointestinal system, blood forming organs.

**Potential Health Effects**

**Eye:** May cause irreversible eye injury. Contact with eyes may cause severe irritation, and possible eye burns.

**Skin:** Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause irritation with burning pain, itching and redness. May cause deep, penetrating ulcers of the skin. May be absorbed through damaged or abraded skin in harmful amounts. Chronic exposure to water insoluble hexavalent chromium compounds has been shown to be associated with lung cancer and gastrointestinal tract tumors.
Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause liver and kidney damage.

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.

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. Chronic exposure to water insoluble hexavalent chromium compounds has been shown to be associated with lung cancer and gastrointestinal tract tumors.

**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 soap and 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 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: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. 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. Substance is nonflammable. Runoff from fire control or dilution water may cause pollution.

Extinguishing Media: Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

**Section 6 - Accidental Release Measures**

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

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Provide ventilation.

**Section 7 - Handling and Storage**
**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with skin and eyes. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Avoid ingestion and inhalation. Use with adequate ventilation.

**Storage:** Store in a tightly closed container. Store in a cool, dry area away from incompatible substances.

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### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium Trioxide</td>
<td>none listed</td>
<td>as CrO₃: 0.001 mg/m³ TWA; NIOSH Potential Occupational Carcinogen</td>
<td>none listed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- see Appendix A; see Appendix C for supplementary exposure limits</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Chromium Trioxide: No OSHA Vacated PELs are listed for this chemical. Water: 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 minimize contact with skin.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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### Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** dark red-brown

**Odor:** odorless

**pH:** Acidic

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** >1 (ether=1)

**Viscosity:** Not available.

**Boiling Point:** > 212 deg F

**Freezing/Melting Point:** 196 deg C

**Decomposition Temperature:** 250 deg C

**Solubility:** Soluble in water.

**Specific Gravity/Density:** 1.5
Molecular Formula: CrO₃
Molecular Weight: 99.9942

Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Excess heat, combustible materials, organic materials.

**Incompatibilities with Other Materials:** Acetic Acid, acetic anhydride, acetone, alcohols, alkali metals, ammonia, arsenic, anthracene, benzene, bromine pentafluorine, butyric acid, camphor, chlorine trifluoride, chromous sulfide, diethyl ether, dimethyl formamide, glycerol, hydrogen sulfide, methyl alcohol, naphthalene, peroxyformic acid, phosphorus, potassium hexacyanoferrate, pyridine, selenium, sodium, sulfur, turpentine, ethyl alcohol and many hydrocarbons.

**Hazardous Decomposition Products:** None.

**Hazardous Polymerization:** Has not been reported.

Section 11 - Toxicological Information

**RTECS#:**

- **CAS# 1333-82-0:** GB6650000
- **CAS# 7732-18-5:** ZC0110000

**LD₅₀/LC₅₀:**
- **CAS# 1333-82-0:**
  - Oral, mouse: LD₅₀ = 127 mg/kg;
  - Oral, rat: LD₅₀ = 80 mg/kg;
- **CAS# 7732-18-5:**
  - Oral, rat: LD₅₀ = >90 mL/kg;

**Carcinogenicity:**
- **CAS# 1333-82-0:**
  - **ACGIH:** A1 - Confirmed Human Carcinogen (listed as Chromium (VI) compounds-water soluble)
  - **California:** carcinogen; initial date 2/27/87 (listed as Chromium (VI) compounds).
  - **NIOSH:** occupational carcinogen
  - **NTP:** Known carcinogen
  - **OSHA:** Select carcinogen
  - **IARC:** Group 3 carcinogen (listed as Chromium). CAS# 7732-18-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion.

**Teratogenicity:** Developmental abnormalities of the fetus have been reported in animals by the subcutaneous and intravenous routes.

**Reproductive Effects:** Post-implantation mortality has been reported in hamsters by the intravenous route.

**Neurotoxicity:** No information available.

**Mutagenicity:** RTECs reports mutagenic data.

**Other Studies:** None available.

Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.
Environmental: Chromium Trioxide lowers the pH of water and becomes acidic.
Physical: No information available.
Other: No information available.

Section 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 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.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>IATA</th>
<th>RID/ADR</th>
<th>IMO</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>DOT regulated-small quantity provisions apply (see 49CFR173.4)</td>
<td></td>
<td></td>
<td>CHROMIC ACID SOLUTION</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td></td>
<td></td>
<td></td>
<td>8(9.2)</td>
</tr>
<tr>
<td>UN Number:</td>
<td></td>
<td></td>
<td></td>
<td>UN1755</td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
<td></td>
<td></td>
<td>II</td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 1333-82-0 is listed on the TSCA inventory.
CAS# 7732-18-5 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# 1333-82-0: 6/12b

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)
None of the chemicals in this material have an RQ.

Section 302 (TPQ)
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 1333-82-0: acute, chronic.

Section 313
This material contains Chromium Trioxide (listed as Chromium), 50 0%, (CAS# 1333-82-0) 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 depletors. This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances 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# 1333-82-0 can be found on the following state right to know lists: New Jersey, Florida, Pennsylvania, Massachusetts.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
O C

**Risk Phrases:**
R 35 Causes severe burns.
R 43 May cause sensitization by skin contact.
R 8 Contact with combustible material may cause fire.

**Safety Phrases:**
S 28A After contact with skin, wash immediately with plenty of water.

**WGK (Water Danger/Protection)**
CAS# 1333-82-0: 3
CAS# 7732-18-5: No information available.

**Canada - DSL/NDSL**
CAS# 1333-82-0 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.

**Canada - WHMIS**
This product has a WHMIS classification of C, D1B, D2A, E.

**Canadian Ingredient Disclosure List**
CAS# 1333-82-0 is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits**
CAS# 1333-82-0: OEL-FINLAND;Carcinogen OEL-FRANCE:TWA 0.05 mg/m3;ST EL 0.1 mg/m3;Carcinogen OEL-GERMANY;Carcinogen OEL-RUSSIA:STEL 0.01 mg/m3;Skin OEL-SWITZERLAND:TWA 0.05 mg/m3;STEL 0.1 mg/m3 OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

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**Section 16 - Additional Information**

**MSDS Creation Date:** 9/02/1997  
**Revision #2 Date:** 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the
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