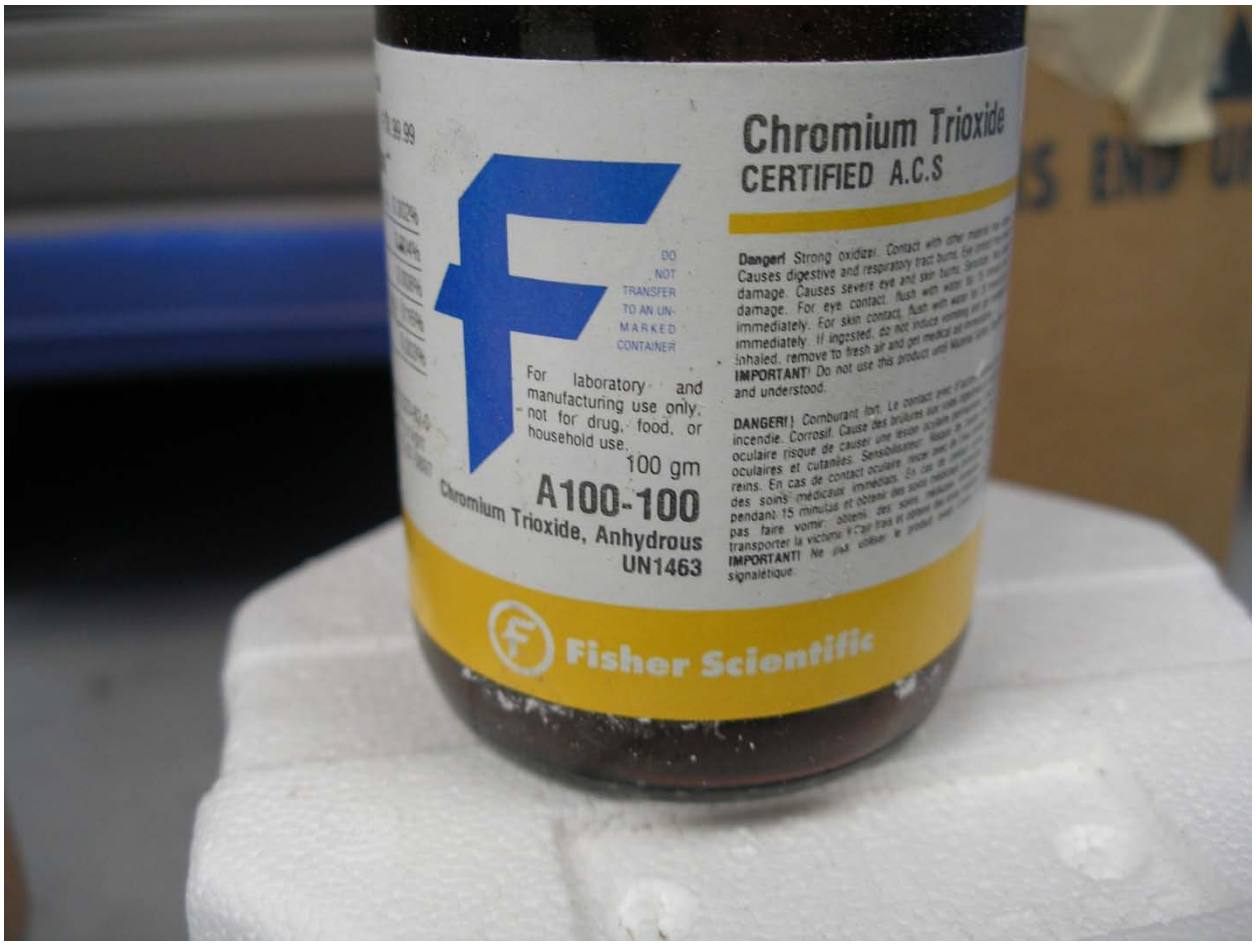

Chemical Name: Chromium trioxide

Manufacturer: Fisher Scientific

Container size: 500ml

Location: VLA

Disposal: Place empty container in the trash. Give partial or full container to the safety officer.

Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

Creation Date 24-Nov-2010 **Revision Date** 08-Sep-2011 **Revision Number** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Chromium trioxide**

Cat No. **A98-212; A98-500; A100-100; A100-212; A100-500**

Synonyms Chromium trioxide; Chromic acid; Chromic anhydride

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

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

Appearance Reddish-violet **Physical State** Solid **odor** odorless

Target Organs Eyes, Skin, Respiratory system, Gastrointestinal tract (GI), Reproductive System

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes	Causes severe burns.
Skin	Causes severe burns. Toxic in contact with skin. May cause sensitization by skin contact.
Inhalation	May be fatal if inhaled. Causes severe burns. May cause allergic respiratory reaction.
Ingestion	Toxic if swallowed. Causes severe burns.

Chronic Effects May cause cancer. May cause heritable genetic damage. Possible risk of impaired fertility. Danger of serious damage to health by prolonged exposure. Repeated contact may cause allergic reactions in very susceptible persons.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Chromium trioxide (CrO3)	1333-82-0	99

4. FIRST AID MEASURES

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Immediate medical attention is required. Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point No information available.
Method No information available.

Autoignition Temperature No information available.

Explosion Limits
Upper No data available
Lower No data available

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

Unsuitable Extinguishing Media No information available.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.

Specific Hazards Arising from the Chemical
Oxidizer: Contact with combustible/organic material may cause fire. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Containers may explode when heated.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA **Health** 3 **Flammability** 0 **Instability** 1 **Physical hazards** OX

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get in eyes, on skin, or on clothing.

Environmental Precautions Should not be released into the environment

Methods for Containment and Clean Up Keep combustibles (wood, paper, oil, etc) away from spilled material. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. HANDLING AND STORAGE

Handling Wear personal protective equipment. Use only under a chemical fume hood. Avoid dust formation. Keep away from clothing and other combustible materials. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium trioxide (CrO3)	TWA: 0.05 mg/m^3	(Vacated) Ceiling: 0.1 mg/m^3	IDLH: 15 mg/m^3 TWA: 0.001 mg/m^3

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Chromium trioxide (CrO3)	TWA: 0.05 mg/m^3	TWA: 0.5 mg/m^3 TWA: 0.05 mg/m^3	TWA: 0.05 mg/m^3

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection 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 and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Reddish-violet
odor	odorless
Odor Threshold	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

pH	1 50g/l aq.sol.
Vapor Pressure	No information available.
Vapor Density	3.4
Viscosity	No information available.
Boiling Point/Range	No information available.
Melting Point/Range	196°C / 384.8°F
Decomposition temperature	198 °C
Flash Point	No information available.
Evaporation Rate	No information available.
Specific Gravity	2.700
Solubility	No information available.
log Pow	No data available
Molecular Weight	99.99
Molecular Formula	Cr O3

10. STABILITY AND REACTIVITY

Stability Oxidizer: Contact with combustible/organic material may cause fire. Hygroscopic.

Conditions to Avoid Excess heat. Incompatible products. Exposure to moist air or water. Combustible material.

Incompatible Materials Bases, Alcohols, Amines, Ammonia, Hydrocarbons, Ketones, Acetone, Acid anhydrides, Metals, Reducing agents, Powdered metals

Hazardous Decomposition Products Carbon dioxide (CO_2), Highly toxic fumes

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions . None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Chromium trioxide (CrO3)	50 mg/kg (Rat)	20 mg/kg (Rabbit) 55 mg/kg (Rat)	0.217 mg/L (Rat) 4 h

Irritation Causes severe burns by all exposure routes

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Chromium trioxide (CrO3)	A1	Group 1	Known	X	A1

Sensitization May cause sensitization by inhalation and skin contact

Mutagenic Effects Mutagenic Ames test: positive.

Reproductive Effects Possible risk of impaired fertility.

Developmental Effects No information available.

Teratogenicity Teratogenic effects have occurred in experimental animals..

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium trioxide (CrO3)	Not listed	40 mg/L LC50 96 h	Not listed	Not listed

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

14. TRANSPORT INFORMATION

DOT

UN-No UN1463
Proper Shipping Name CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class 5.1
Subsidiary Hazard Class 8; 6.1
Packing Group II

14. TRANSPORT INFORMATION

TDG

UN-No	UN1463
Proper Shipping Name	CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class	5.1
Subsidiary Hazard Class	8; 6.1
Packing Group	II

IATA

UN-No	1463
Proper Shipping Name	CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class	5.1
Subsidiary Hazard Class	6.1, 8
Packing Group	II

IMDG/IMO

UN-No	1463
Proper Shipping Name	CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class	5.1
Subsidiary Hazard Class	6.1, 8
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Chromium trioxide (CrO3)	R	X	-	215-607-8	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

Component	TSCA 12(b)
Chromium trioxide (CrO3)	Section 6

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium trioxide (CrO3)	1333-82-0	99	0.1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium trioxide (CrO3)	-	-	X	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium trioxide (CrO3)	X		-

OSHA

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Chromium trioxide (CrO3)	5 µg/m^3 TWA 2.5 µg/m^3 Action Level	-

CERCLA
Not Applicable

California Proposition 65
This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Chromium trioxide (CrO3)	1333-82-0	Carcinogen Developmental Female Reproductive Male Reproductive	-

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium trioxide (CrO3)	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
C Oxidizing materials
D1A Very toxic materials
D2A Very toxic materials
D2B Toxic materials
E Corrosive material

16. OTHER INFORMATION

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date 24-Nov-2010

Print Date 08-Sep-2011

Revision Summary "***", and red text indicates revision

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS