

MATERIAL SAFETY DATA SHEET



Date Issued: 03/12/2007
MSDS No: HCC
Date Revised: 06/18/2007
Revision No: 2

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT CODE: HARD CHROME CRYSTALS

MANUFACTURER

CASWELL INC.
7696 ROUTE 31
LYONS NY 14489

Emergency Contact: 8004249300
Product Stewardship: 3159461213
Transportation: 8004249300
Service Number: 3159461213

CASWELL INC.
7696 ROUTE 31
LYONS NY 14489
USA

Emergency Contact: CHEMTREC
Emergency Phone: +1 703 527 3887
Service Number: +1 315 946 1213
Transportation Number: +1 703 527 3887

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC: 1 800 424 9300
CHEMTREC INTERNATIONAL: 703 527 3887

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: SOLID DARK RED FLAKES OR POWDER; NO ODOR

IMMEDIATE CONCERNS: STRONG OXIDIZER. CORROSIVE TO RESPIRATORY TRACT, EYES, SKIN AND DIGESTIVE TRACT. CONTACT WITH BROKEN SKIN MAY RESULT IN ULCERS. CONTACT CAN CAUSE SEVERE DAMAGE INCLUDING BURNS AND BLINDNESS. MAY CAUSE KIDNEY AND LIVER DAMAGE. PROLONGED OR REPEATED INHALATION MAY CAUSE ULCERATION OR PERFORATION OF NASAL SEPTUM. MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. POTENTIAL CANCER HAZARD. CONTAINS MATERIAL WHICH MAY CAUSE CANCER. RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.

POTENTIAL HEALTH EFFECTS

EYES: CONTACT CAN CAUSE SEVERE DAMAGE INCLUDING BURNS AND BLINDNESS.

SKIN: CONTACT CAN CAUSE SEVERE BURNS. CONTACT WITH BROKEN SKIN MAY LEAD TO FORMATION OF FIRMLY MARGINATED "CHROME SORES". MAY CAUSE ALLERGIC CONTACT DERMATITIS. DERMAL ABSORPTION OF LARGE AMOUNTS MAY RESULT IN KIDNEY FAILURE AND DEATH.

INGESTION: CAN CAUSE SEVERE TISSUE DESTRUCTION. KIDNEY FAILURE MAY FOLLOW AND RESULT IN DEATH. MAY CAUSE LIVER DAMAGE.

INHALATION: INHALATION OF VAPOR, MIST OR LIQUID MAY CAUSE SEVERE BURNS OF THE NASAL SEPTUM AND RESPIRATORY TRACT. MAY CAUSE KIDNEY AND LIVER DAMAGE.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

CHRONIC EFFECTS: PROLONGED OR REPEATED CONTACT MAY CAUSE CONJUNCTIVITIS, "CHROME SORES" ON SKIN (ESPECIALLY BROKEN SKIN), OR ULCERATION AND PERFORATION OF THE NASAL

SEPTUM. EPIDEMIOLOGICAL STUDIES INDICATE LONG TERM EXPOSURE TO DUSTS AND MISTS IN CHROME PROCESSING INDUSTRY IS ASSOCIATED WITH INCREASES IN RESPIRATORY TRACT CANCER IN MAN; THE CAUSATIVE AGENT IS NOT KNOWN. EPIDEMIOLOGICAL STUDIES HAVE NOT DEMONSTRATED ANY INCREASED RISK OF CANCER AT EXPOSURE LEVELS BELOW THE CURRENT PEL.

MEDICAL CONDITIONS AGGRAVATED: PRE-EXISTING DISORDERS AFFECTING TARGET ORGANS.

ROUTES OF ENTRY: Ingestion. Inhalation. Skin Contact. Eyes.

TARGET ORGAN STATEMENT: KIDNEYS, LIVER, NASAL SEPTUM, EYES, SKIN, RESPIRATORY TRACT, GASTROINTESTINAL TRACT.

CANCER STATEMENT: CONTAINS A LISTED CARCINOGEN. SEE SECTIONS 2 & 11.

SENSITIZATION: MAY CAUSE SKIN SENSITIZATION.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS
Chromic Trioxide (chromic Acid)	100	001333-82-0	215-607-8

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Thoroughly wash or discard clothing and shoes before reuse.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: MASSIVE OVEREXPOSURE TO SOLUTIONS OF THIS PRODUCT COULD LEAD TO KIDNEY FAILURE AND DEATH. IT HAS BEEN REPORTED THAT THERE IS LITTLE VALUE FROM CHELATING AGENTS, HOWEVER, ASCORBIC ACID ADMINISTERED INTRAVENOUSLY AND LOCALLY IS AN EFFECTIVE ANTIDOTE (CONVERTING CR6 TO CR3) IN PREVENTING RENAL TUBULAR FAILURE. SKIN ULCERS MAY BE TREATED BY REMOVAL FROM EXPOSURE, DAILY CLEANSING, DEBRIDEMENT, AND NECESSARY AS INDICATED. UP TO 10 GRAMS ASCORBIC ACID IN STOMACH. PLUS I.V. ASCORBIC ACID 1 GRAM IN DIVIDED DOSES. MONITOR BLOOD CHEMISTRIES, FORCE FLUIDS FOR DIURESIS (OF CHROME). DO NOT ATTEMPT CHELATION! PROTECT RENAL TUBULES.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Flammable

EXTINGUISHING MEDIA: Any available.

EXPLOSION HAZARDS: OXIDIZER. AVOID CONTACT WITH ORGANIC MATERIALS.

FIRE FIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: EVACUATE UNNECESSARY PERSONNEL. FOLLOW PROTECTIVE MEASURES PROVIDED UNDER PERSONAL PROTECTION IN SECTION 8. PEOPLE PERFORMING THE CLEANUP SHOULD HAVE FULL PROTECTIVE EQUIPMENT INCLUDING A NIOSH/MSHA APPROVED POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS.

ENVIRONMENTAL PRECAUTIONS

LAND SPILL: DO NOT ALLOW ENTRY INTO SEWERS AND WATERWAYS.

RELEASE NOTES: STOP LEAKS. REMOVE AS MUCH AS POSSIBLE (E.G. VACUUM TRUCK OR SHOVEL INTO STEEL CONTAINER). THEN TREAT THE SPILL AREA WITH A REDUCING AGENT TO CONVERT THE HEXAVALENT CHROMIUM TO THE TRIVALENT FORM (SODIUM BISULFITE, SODIUM SULFITE, FERROUS SULFATE OR FERROUS CHLORIDE). NEUTRALIZE WITH A WEAK BASE (SODIUM BICARBONATE, SODA ASH OR LIME). FOLLOWING NEUTRALIZATION, SOAK UP WITH INERT ABSORBENT MATERIAL (E.G. SAND) AND PLACE IN A CLOSED, LABELLED CONTAINER AND STORE IN A SAFE PLACE TO AWAIT DISPOSAL.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: WEAR PERSONAL PROTECTIVE EQUIPMENT AS DESCRIBED IN EXPOSURE CONTROLS/PERSONAL PROTECTION (SECTION 8) OF THE MSDS. DO NOT GET IN EYES, ON SKIN OR CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE. AVOID BREATHING AIRBORNE PARTICULATES; WEAR RESPIRATORY PROTECTION WHEN EXPOSURE IS POSSIBLE. WASH CONTAMINATED CLOTHING BEFORE REUSE. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.

HANDLING: DO NOT ALLOW CONTACT WITH MATERIALS AS NOTED IN SECTION 10.

STORAGE: STORE IN TIGHTLY CLOSED, LABELLED CONTAINERS AWAY FROM COMBUSTIBLE MATERIALS.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Chromic Trioxide (chromic Acid)	TWA	NL ppm ^[1]	NL mg/m ³ ^[1]	0.05 ppm	NL mg/m ³	NL ppm	NL mg/m ³
	STEL	NL ppm	0.1* mg/m ³	NL ppm	NL mg/m ³	NL ppm	NL mg/m ³
Footnotes:							
1. NL = Not Listed							

ENGINEERING CONTROLS: THE WORK AREA SHOULD BE ISOLATED AND CONTAINED AND PROVIDED WITH ADEQUATE LOCAL EXHAUST VENTILATION OR OTHER CONTROLS WHERE DUST OR FUMES MAY BE GENERATED. THE NUMBER OF PERSONS EXPOSED SHOULD BE MINIMIZED. CERTAIN PROCESSES LIKE CHROME PIGMENT PRODUCTION, HIGH TEMPERATURE WELDING OR CUTTING, ETC., MAY FORM MATERIALS MORE HAZARDOUS TO HUMANS THAN THIS PRODUCT. THE MATERIALS MAY BE THE FORMATION OF SLIGHTLY SOLUBLE SALTS (BARIUM, ZINC, CALCIUM OR OTHER CHROMATES) OR FUMES OF CHROMIUM/CHROMIC ACID, RESPECTIVELY WHICH ARE KNOWN TO BE HUMAN CARCINOGENS. ENGINEERING CONTROLS AND LOCAL EXHAUST VENTILATION IS REQUIRED TO ENSURE THAT WORKER EXPOSURE IS BELOW CURRENT PEL.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent).

Do not use contact lenses.

SKIN: Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

PROTECTIVE CLOTHING: Wear suitable protective clothing at all times.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid

ODOR: None

APPEARANCE: Solid dark red flakes or powder.

pH: 1.1 1% solution at 25C

MELTING POINT: 197°C (387°F)

FLASHPOINT AND METHOD: Not Flammable

SOLUBILITY IN WATER: 63 at 25°C

DENSITY: 85-90

SPECIFIC GRAVITY: 2.700 (water=1)

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

STABILITY: Stable.

HAZARDOUS DECOMPOSITION PRODUCTS: None

COMMENTS: THIS PRODUCT IS A STRONG OXIDIZING AGENT, EVEN IN SOLUTION. AVOID CONTACT WITH STRONG ACIDS, ALKALIS, ORGANIC MATERIALS, OILS, GREASES, OR ANY EASILY OXIDIZABLE MATERIAL. CORROSIVE TO SOME METALS. THIS PRODUCT IS HYGROSCOPIC. DO NOT STORE IN HUMID PLACES.

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD₅₀: 57 mg/kg (rabbit)

ORAL LD₅₀: 52 mg/kg (rat)

INHALATION LC₅₀: 217 mg/m³ (rat/4 hour)

CARCINOGENICITY

IARC: Group 1 carcinogen

NTP: Known carcinogen.

Notes: NTP AND IARC HAVE DETERMINED THAT THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF HEXAVALENT CHROMIUM COMPOUNDS BOTH IN HUMANS AND EXPERIMENTAL

ANIMALS. HOWEVER, THE HEXAVALENT CHROMIUM COMPOUNDS RESPONSIBLE (FOR HUMAN CARCINOGENICITY) CANNOT BE SPECIFIED.

IRRITATION:

PRIMARY SKIN IRRITATION:

	DRY SOLID	MOISTENED	DRY SOLID	MOISTENED
	4 HRS	4 HRS	24 HRS	24 HRS
ERYTHEMA	2/6	6/6		
EDEMA	0/6	5/6		
NECROSIS	0/6	1/6		
CORROSION			1/1	1/1

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY (ACUTE)

96-HOUR LC₅₀: 44 MG/L

48-HOUR EC₅₀: 5.9 MG/L

96-HOUR EC₅₀: 183 UG/L

GENERAL COMMENTS: THERE IS A SIGNIFICANT AMOUNT OF INFORMATION CONCERNING THE ENVIRONMENTAL FATE AND EFFECTS OF CHROMIUM OXIDE (CHROMIC ACID OR ANHYDRIDE). CHROMIUM OXIDE AND CHROMIUM HAVE BEEN FOUND TO EXHIBIT MODERATE TO HIGH TOXICITY TO AQUATIC AND TERRESTRIAL ORGANISMS. CHROMIUM OXIDE WILL PERSIST PRIMARILY AS CHROME (III) AND CHROME (VI) IN WATER AND SOIL SYSTEMS. MATERIAL RELEASED TO THE ATMOSPHERE IS SUBJECT TO DEPOSITION WITH PARTICULATES OR RAINFALL. UNDER CERTAIN ENVIRONMENTAL CONDITIONS CHROMIUM MAY BE SUBJECT TO LOW LEVELS OF BIOACCUMULATION IN BOTH AQUATIC AND TERRESTRIAL PLANTS AND ANIMALS. THERE IS NO INDICATION OF BIOMAGNIFICATION IN THE FOOD CHAIN. PRECAUTIONS SHOULD BE TAKEN TO PREVENT THE ACCIDENTAL RELEASE OF THIS MATERIAL TO THE ENVIRONMENT.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: TREAT WITH A REDUCING AGENT TO CONVERT HEXAVALENT CHROMIUM TO TRIVALENT CHROMIUM, THEN NEUTRALIZE WITH A WEAK BASE. THE SOLID MATERIAL MEETING TREATMENT STANDARDS MAY BE DISPOSED OF VIA AN APPROVED CHEMICAL WASTE LANDFILL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. (SEE SECTION 6 OF THE MSDS).

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Chromium Trioxide, Anhydrous

PRIMARY HAZARD CLASS/DIVISION: 5.1

SECONDARY HAZARD CLASS/DIVISION: 6.1+8

UN/NA NUMBER: UN1463

PACKING GROUP: II

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 10 Pounds

AIR (ICAO/IATA)

SHIPPING NAME: Chromium Trioxide, Anhydrous

UN/NA NUMBER: UN1463

PRIMARY HAZARD CLASS/DIVISION: 5.1
SECONDARY HAZARD CLASS/DIVISION: 6.1+8
PACKING GROUP: II

VESSEL (IMO/IMDG)

SHIPPING NAME: Chromium Trioxide, Anhydrous
UN/NA NUMBER: UN1463
PRIMARY HAZARD CLASS/DIVISION: 5.1
SECONDARY HAZARD CLASS/DIVISION: 6.1+8
PACKING GROUP: II

15. REGULATORY INFORMATION

UNITED STATES

DOT LABEL SYMBOL AND HAZARD CLASSIFICATION



Oxidizing



Corrosive



Toxic

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
Chromic Trioxide (chromic Acid)	001333-82-0

TSCA STATUS: All ingredients in this mixture are in compliance with TSCA.

CALIFORNIA PROPOSITION 65: WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

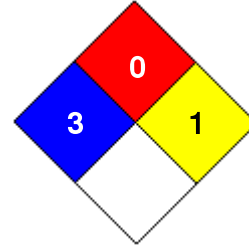
16. OTHER INFORMATION

APPROVED BY: L CASWELL **TITLE:** PRESIDENT

REVISION SUMMARY: Revision #: 2 This MSDS replaces the June 18, 2007 MSDS. Any changes in information are as follows: In Section 14 IMO Secondary Hazard Class/Division AIR Secondary Hazard Class/Division DOT Secondary Hazard Class/Division

HMIS RATING

HEALTH:	*	3
FLAMMABILITY:		0
PHYSICAL HAZARD:		1
PERSONAL PROTECTION:		

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