

COOK COMPOSITES AND POLYMERS

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September 30, 1997

FLD-980-559-728

Ms. Jennifer H. Hobbs
Environmental Specialist
Hazardous Waste Program
Central District
Florida DEP
3319 Maguire Boulevard
Suite 232
Orlando, FL 32803-3767

RE: Gas Release at the Chemical Conservation Corporation
on September 22, 1997

Dear Ms. Hobbs:

Per your request, Cook Composites and Polymers Co. (CCP), is sending to you the MSDS that was given to me upon questioning Chemical Conservation Corporation on the nature of the gas release.

Also, please find a copy of the letter dated September 29, 1997, from Chemical Conservation Corporation, indentifying what they felt was the primary component of the gas release.

If you should have additional questions or concerns, please feel free to contact me at (407) 851-3030.

Sincerely,
Cook Composites and Polymers Co. - Orlando



Ron Lauters
Quality Assurance Manager

cc: Craig Bostwick - Corporate Director, ERS
Art Hansen - Plant Manager, CCP Orlando



10124 Rocket Blvd. Orlando, FL 32824
(407) 851-3030 Fax: (407) 855-0674

Chemical Conservation Corporation

10100 ROCKET BOULEVARD • ORLANDO, FLORIDA 32824

(407) 859-4441 • FAX (407) 855-2812



September 29, 1997

Mr. Arthur L. Hansen, Jr.
Plant Manager
Cook Composites and Polymers
10124 Rocket Boulevard
Orlando, FL 32824

Dear Mr. Hansen:

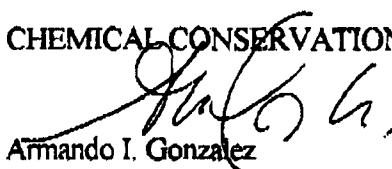
This letter pertains to a gas release that occurred at the Chemical Conservation Corporation (CCC) facility on September 22, 1997.

A sample of the material that was the source of the release was collected and analyzed for relevant parameters. The analysis report is attached to this letter. This analytical information does not conclusively establish the chemical nature of the vapor release. However, given the proportionately large amount of hydrochloric acid loaded into the tanker and my observations regarding the odor of the release, we believe that a primary component of the vapor released was chlorine gas. We have estimated that the amount of the release was around one pound.

If you have any questions, please call me at 859-4441.

Sincerely,

CHEMICAL CONSERVATION CORPORATION


Armando I. Gonzalez
Compliance Officer

cc: William F. Labadie

Chemical Conservation of Georgia, Inc.
Laboratory Services

1612 James P. Rodgers Circle, Valdosta, Georgia 31601

(912) 244-0474 • FAX: (912) 333-0328

Clients: Chemical Conservation Corporation
10100 Rocket Blvd.
Orlando, FL 32824
Pat Sullivan

Customer's Sample Log Number:	Tanker #405
CCGI's Sample Log Number:	97171
Date Sample Received:	09/25/97
Date Analysis Completed:	09/26/97
Generator's Name:	Chem-Con Orlando
Sample Identification:	Water

Lab Manager: _____


Sherry McInnon

Page 1 of 2

CCGI's Sample Log Number: 97171
Page 2 of 2

Chemical Conservation of Georgia, Inc. Laboratory Services

Miscellaneous Analysis

Results

PH	0.24
Water	93.97%
Percent Solid	<0.5%

TCLP Metals Analysis

Results

Units

Regulatory Level (mg/L)

Arsenic	(As)	39.6	mg/L	5.0
Barium	(Ba)	N/A	mg/L	
Cadmium	(Cd)	10000	mg/L	1.0
Chromium	(Cr)	60000	mg/L	5.0
Lead	(Pb)	400	mg/L	5.0
Mercury	(Hg)	N/A	mg/L	
Selenium	(Se)	5.4	mg/L	1.0
Silver	(Ag)	100.00	mg/L	5.0



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Material Safety Data Sheets Collection:

Sheet No. 5

Chromic Acid and Chromates

Issued: 10/77

Revision: C, 7/91

34

Section 1. Material Identification

Chromic Acid (CrO_3) Description: Produced by roasting chromite ore with alkali or lime, leaching with calcium oxide, crystallizing the chromate or dichromate, and then treating it with an excess of sulfuric acid. Used in ceramic glazes, colored glass, dyes, batteries, explosives, water treatment, wood treatment and preservatives, refractories, copper stripping, aluminum anodizing, photomechanical processing, chromium metal plating, purifying oil and acetylene, hardening microscopic preparations, and manufacturing chromated copper arsenate; and as a corrosion inhibitor, a catalyst, an oxidizing agent in organic chemistry, and an etchant for plastics.

Other Designations: CAS No. 1333-82-0; chromic acid; chromic acid, solid (DOT); chromium anhydride; chromium (VI) oxide; chromium trioxide; chromium (6+) trioxide; monochromium trioxide; puratronic chromium trioxide. Chromic acid is the commonly used name, although true chromic acid (CrH_2O_4 , CAS No. 7738-94-5) cannot be isolated from solution. Chromic acid and chromates (as CrO_3 , CAS No. 7440-47-3).

Manufacturer: Contact your supplier or distributor. Consult latest *Chemical Week Buyers' Guide*TM for a suppliers list.

Caution: A powerful oxidizer, chromic acid may explode on contact with reducing agents and cause ignition on contact with organic materials. This poison and human carcinogen is corrosive to skin and irritating to mucous membranes. Eye contact may cause permanent blindness.

R 1	NFPA
I 1	0
S 3+	3
K 0	1
	oxy
	* (broken skin)
	HMTS
	H 3
	F 0
	R 1
	PPG†
	† Sec. 8

Section 2. Ingredients and Occupational Exposure Limits

Chromic acid, 99% CrO_3 ,
1990 OSHA PEL
Ceiling: 0.1 mg(CrO_3)/m³

1990-91 ACGIH TLVs
TWA: 0.05 mg(Cr)/m³
Ceiling: 0.1 mg/m³

1987 IDLH Level
30 mg/m³

1990 NIOSH REL
TWA: 0.025 mg(Cr(VI))/m³
Ceiling: 0.05 mg/m³/15 min (Cr(VI))

1985-86 Toxicity Data*

Rat, oral, LD₅₀: 80 mg/kg

Mouse, oral, LD₅₀: 127 mg/kg

Human, inhalation, TC₀₁: exposed continuously to 110 µg over 3 years. Toxic effects include tumorigenic (carcinogenic by RTECS criteria); sense organs and special senses (olfaction tumors); lungs, thorax, or respiration (tumors).

Dog, subcutaneous, LD₅₀: 330 mg/kg

* See NIOSH, RTECS (GB6650000), for additional mutative, reproductive, toxicity and tumorigenic data.

Section 3. Physical Data*

Boiling Point: Decomposes at 482°F (250°C) to Cr_2O_3 + O_2
Melting Point: 385°F (196°C)
Molecular Weight: 99.98

Specific Gravity: 2.7
Water Solubility: Soluble
Heat of Fusion: 37.7 cal/g

Appearance and Odor: Dark, purplish-red, prismatic, deliquescent (absorbs all moisture from air) crystals, or a granular powder with no detectable odor.

* These physical data apply only to chromic acid (CAS No. 1333-82-0).

Section 4. Fire and Explosion Data

Flash Point: None reported

Autoignition Temperature: None reported

LEL: None reported

UEL: None reported

Extinguishing Media: Chromic acid is noncombustible, but accelerates burning of combustibles (wood, paper, oil). For small fires, use only water, not dry chemical, carbon dioxide (CO_2), or halon.

Unusual Fire or Explosion Hazards: A powerful oxidizer, chromic acid ignites on contact with acetic acid and alcohol. It may react rapidly enough with organic materials to cause ignition. Containers may explode if involved in fire.

Special Fire-fighting Procedures: Isolate hazard area and deny entry. Since fire may produce toxic fumes, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode. Cool fire-exposed containers with flooding amounts of water since the decomposing material may form a hot, viscous foam that can cause containers to rupture and explode. Use caution! For large fires, flood area from a safe distance, and cool containers from the side with a water spray until after fire is well out. If possible without risk, move containers. Stay away from ends of tanks. For massive fire in cargo area, use monitor nozzles or unmanned hose holder. Be aware of runoff from fire control methods. Do not release to sewers or waterways.

Section 5. Reactivity Data

Stability/Polymerization: Chromic acid is generally stable at room temperature in closed containers under normal storage and handling conditions. Hazardous polymerization cannot occur.

Chemical Incompatibilities: This material is incompatible with acetic acid, acetic anhydride, acetone, alcohols, alkali metals, ammonia, arsenic, anthracene, benzene, bromine penta fluoride, butyric acid, camphor, chromous sulfide, diethyl ether, glycerol, hydrogen sulfide, methyl alcohol, naphthalene, peroxyformic acid, phosphorus, potassium hexacyanoferrate, pyridine, selenium, sodium, and turpentine. Chromic acid ignites ethyl alcohol and many hydrocarbons.

Conditions to Avoid: Avoid excess heat and contact with combustible or organic materials.

Hazardous Products of Decomposition: Thermal oxidative decomposition of chromic acid can produce carbon dioxide, smoke, and irritating toxic fumes.

Section 6. Health Hazard Data

Carcinogenicity: The IARC and NTP list chromic acid and other forms of hexavalent (VI) chromium as human carcinogens.

Summary of Risks: Chromic acid is a poison and a powerful irritant to skin, eyes, and respiratory tract. Skin or lung sensitization (allergic reactions) may occur. Exposure can cause dermatitis (skin rash), asthma, pulmonary edema (fluid in lungs), kidney damage, a "chrome hole," or a perforation of the nasal septum (tissue between nostrils).

Medical Conditions Aggravated by Long-Term Exposure: Any chronic lung or skin condition.

Target Organs: Skin, respiratory tract (including nose, throat, airways, and lungs), and kidney.

Primary Entry Routes: Eyes, skin contact, inhalation, and ingestion.

Acute Effects: Inhalation may cause irritation or burning of nose, throat, and air passages, cough, wheezing, and shortness of breath. Higher exposures may cause pulmonary edema (fluid in lungs). Skin exposure may cause dermatitis (skin rash), irritation, burning, itching, redness, and ulceration (skin destruction) which may penetrate. Eye contact can cause irritation, burning, lacrimation (watering), loss of sight and permanent blindness if not removed quickly.

Chronic Effects: Chronic inhalation of excessive levels may cause epistaxis (nosebleed), "chrome holes," nasal congestion, tooth enamel erosion, chest pain, asthma (via allergic sensitization), bronchitis, or respiratory tract cancer. Chronic eye exposure may cause conjunctivitis. Skin contact

Continue on next page

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Section 6. Health Hazard Data, continued

can cause irritant or allergic contact dermatitis, or skin ulceration. Chronic systemic absorption could cause liver or kidney damage.

FIRST AID

Eyes: Gently lift the eyelids and flush immediately and continuously with flooding amounts of water until transported to an emergency medical facility. Do not let victim rub eyes or keep them tightly shut. Consult a physician immediately.

Skin: Rinse with flooding amounts of water for at least 15 min, and wash with a gentle soap. Promptly remove contaminated clothing. For redness, blistering, or persistent irritation, consult a physician.

Inhalation: Remove exposed person to fresh air and support breathing as needed.

Ingestion: Never give anything by mouth to an unconscious or convulsing person. If ingested, have that conscious person drink 1 to 2 glasses of water. Do not induce vomiting since this worsens the victim's condition. Do not neutralize this acid.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: After decontamination and neutralization, treatment of acid burns is similar to that of thermal burns, although bullae and loose necrotic tissue should be debrided. Update tetanus status. For severe acid burns, fluid resuscitation is critical to prevent mortality from hypovolemia and renal failure. Monitor serial vital signs, urine output, electrolytes, blood count, and urinalysis as clinically indicated. Neurovascular compromise distal to a circumferential extremity burn may require escharotomy or fasciotomy. For inhalation exposures to acids, a CXR, EKG, ABGs, PFTs, SMA, and CBC may aid in treatment. Evaluate and treat as indicated for reactive airways, upper airway obstruction and noncardiogenic pulmonary edema (possibly delayed onset). Although literature documentation is inadequate, a burst of steroids may help prevent development of sequelae such as reactive airways dysfunction syndrome or bronchitis obliterans. For ocular exposures to acids, ensure adequate decontamination. Determination of pH may be helpful. A Morgan Lens® and topical anesthesia may aid in irrigation. Perform fluorescein staining and slit lamp evaluation and consult an ophthalmologist. Antibiotic ointments, mydriatic/cycloplegics, topical corticosteroids (after epithelial recovery), patching, and possibly anterior chamber paracentesis may be indicated depending on clinical presentation. Acutely and in follow-up, evaluate as indicated for intraocular pressure, lacrimal and lid function, corneal integrity and infection. Urinary chromium is of questionable value.

Section 7. Spill, Leak, and Disposal Procedures

Spill/Leak: Notify safety personnel and evacuate all unnecessary personnel. Cleanup personnel should protect against dust inhalation and eye contact. Do not handle broken packages unless wearing appropriate personal protective equipment. Keep combustibles (wood, paper, etc.) away from spilled material. Whenever possible, use wet cleanup methods; if not, use vacuum cleanup. Remove spills immediately to prevent dust dispersion. For a water spill, neutralize with agricultural lime, crushed limestone, or sodium bicarbonate. For a land spill, dig a pit, pond, or lagoon to contain material. If time permits, seal these with an impermeable, flexible membrane liner. Dike surface flow with soil, sand or foamed concrete. Follow applicable OSHA regulations (29 CFR 1910.120).

Environmental Transport: If allowed contact with soil, chromic acid, solid, lowers pH and may leach into water sources, causing an effect similar to acid rain's on water sources. This material's carcinogenicity makes it hazardous to the environment in its hexavalent state.

Environmental Degradation: The recommended disposal means are reduction, precipitation, or ion exchange. Landfill disposal is not recommended since it raises soil acidity.

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

EPA Designations

Listed as a RCRA Hazardous Waste (40 CFR 261.22): Corrosive waste

RCRA Hazardous Waste (40 CFR 261.33): Not listed

Listed as a CERCLA Hazardous Substance* (40 CFR 302.4), Reportable Quantity (RQ): 10 lb (4.54 kg) [*per Clean Water Act, Sec. 311(b)(4)]†

SARA Extremely Hazardous Substance (40 CFR 355): Not listed

SARA Toxic Chemical (40 CFR 372.65): Not listed

OSHA Designations

Listed as an Air Contaminant (29 CFR 1910.1000, Tables Z-1-A and Z-2)

† Chromic acid (CAS No. 7738-94-3) is listed.

Section 8. Special Protection Data

Goggles: Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133).

Respirator: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. For 0.5-g/m³ concentrations (if not fumes), use any dust and mist respirator except single-use and quarter-mask respirators. For 1.25-g/m³ concentrations, use any powered air-purifying respirator with a high-efficiency particulate filter. For 2.5-mg/m³ concentrations, use any air-purifying full facepiece respirator with a high-efficiency particulate filter. For 30-g/m³ concentrations, use any supplied air respirator with a full facepiece and operated in a pressure-demand or other positive-pressure mode. All concentrations may require eye protection. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. **Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.**

Others: Wear impervious gloves, boots, aprons, and gauntlets to prevent skin contact.

Ventilation: Provide general and local ventilation systems to maintain airborne concentrations below occupational exposure levels. Local exhaust ventilation is preferred since it prevents contaminant dispersion into work area by controlling it at its source.⁽¹⁰⁾

Safety Stations: Make available in the work area emergency eyewash stations, safety/quick-drench showers, and washing facilities.

Contaminated Equipment: Contact lenses may minimize or worsen eye injuries. In some cases, soft lenses can actually protect eyes, not worsen corneal damage, due to strong chemicals. In other cases, chemical entrapment is presumed a possible hazard. Since contact lens use in industry is controversial, establish your own policy. Remove this material from your shoes and equipment. Launder contaminated clothing before wearing.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9. Special Precautions and Comments

Storage Requirements: Store in glass bottles, cans, or drums. Protect against physical damage. Separate from combustible, organic, or other easily oxidizable materials. Protect from excess moisture which could cause containers to rust. Do not store on wooden floors. Store away from foodstuffs and flammable liquids and solids.

Engineering Controls: Avoid dust inhalation and skin or eye contact. Institute a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Practice good housekeeping procedures.

Other Precautions: Institute preplacement and periodic medical exams of exposed workers with attention to the skin and respiratory tract. Consider preplacement and periodic chest radiographs.

Transportation Data (49 CFR 172.101, .102)

DOT Shipping Name: Chromic acid, solid

DOT Hazard Class: Oxidizer

ID No.: NA1463

DOT Label: Oxidizer

DOT Packaging Exceptions: 173.153

DOT Packaging Requirements: 173.164

IMO Shipping Name: Chromium trioxide, anhydrous

IMO Hazard Class: 5.1

ID No.: UN1463

IMO Label: Oxidizer, Corrosive

IMDG Packaging Group: II

MSDS Collection References: 26, 38, 73, 85, 100, 101, 103, 124, 126, 127, 132, 133, 136, 138, 139, 140, 143, 142, 145, 148, 159

Prepared by: M Gannon, BA; Industrial Hygiene Review: DJ Wilson, CHH; Medical Review: MJ Upfal, MD, MPH; Edited by: JR Stuart, MS

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