LAB ALLEY
POWERING SCIENCE
www.laballey.com

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
	Health Hazard 3 Fire Hazard 0 Reactivity 0	 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Chromic Acid, 35%**
Manufacturer	Lab Alley, LLC 22111 Highway 71 West, Suite 601 Spicewood, Texas 78669
Commercial Name(s)	Not available.
Synonym	Not available.
Chemical Name	Not applicable.
Chemical Family	Not available.
Chemical Formula	Not applicable.
Supplier	

Catalog Number(s).	C2985
CAS#	Mixture.
RTECS	Not applicable.
TSCA	TSCA 8(b) inventory: Water; Chromium Trioxide
CI#	Not available.

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m^3)**	**STEL (mg/m^3)**	**CEIL (mg/m^3)**	**% by Weight**
1) Water	7732-18-5				65
2) Chromium Trioxide	1333-82-0	0.1			35

Toxicological Data on Ingredients

Chromium Trioxide:
ORAL (LD50): Acute: 80 mg/kg [Rat]. 127 mg/kg [Mouse].

Section 3. Hazards Identification

Potential Acute Health Effects

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, . Hazardous in case of skin contact (corrosive), of eye contact (corrosive). Slightly hazardous in case of inhalation (lung sensitizer). Non-corrosive for lungs. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Continued on Next Page

Potential Chronic Health Effects	**CARCINOGENIC EFFECTS**: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC [Chromium Trioxide]. **MUTAGENIC EFFECTS**: Mutagenic for mammalian somatic cells. [Chromium Trioxide]. Mutagenic for bacteria and/or yeast. [Chromium Trioxide]. **TERATOGENIC EFFECTS**: Not available. **DEVELOPMENTAL TOXICITY**: Not available. The substance may be toxic to kidneys, liver, gastrointestinal tract, upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not available.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	Slightly explosive in presence of open flames and sparks, of organic materials. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	Not applicable.
Special Remarks on Fire Hazards	Arsenic reacts with Chromium trioxide with incandescence. A violent reaction or flaming is likely in the reaction of chromium oxide and aluminum powder. Benzene ignites on contact with chromium trioxide. Reacts with Sodium or Potassium with incandescence. A mixture of chromium trioxide, and sulfur ignites on warming. Ignites on contact with alcohols, acetic anhydride + tetrahydronaphthalene, acetone, butanol, chromium (II) sulfide, cyclohexanol, dimethyl formamide, ethanol, ethylene glycol, methanol, 2-propanol, pyridine. Contact with combustible or organic materials may cause fire.

Continued on Next Page

Special Remarks on Explosion Hazards	An explosion can occur when Chromium trioxide is mixed with potassium ferricyanide when dust is ignited by a spark. Chromium trioxide + potassium permanganate will explode. Can react explosively with acetic anhydride + heat, acetic acid + heat,, ethyl acetate, isoamyl alcohol, benzaldehyde, benzene, benzylthylaniline, butraldehyde, 1,3-dimethylhexahydropyrimidone, diethyl ether, ethyl acetate, isopropyl acetate, methyl dioxane, pelargonic acid, pentyl acetate, phosphorus + heat, propionaldehyde, and other organic materials or solvents. (Chromium Trioxide)

Section 6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: **Neutralize the residue with a dilute solution of sodium carbonate.**
Large Spill	Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. **Neutralize the residue with a dilute solution of sodium carbonate.** Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.
Personal Protection	Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	**Chromium Trioxide** TWA: 0.05 (mg(Cr)/m^3) from ACGIH (TLV) [United States] Inhalation CEIL: 0.1 (mg(Cr)/m^3) from OSHA (PEL) [United States] Inhalation TWA: 0.001 (mg(Cr)/m^3) from NIOSH [United States] Inhalation Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	**Odor**	Not available.
Molecular Weight	Not applicable.	**Taste**	Not available.
pH (1% soln/water)	Acidic.	**Color**	Clear Red.

Boiling Point	The lowest known value is 100°C (212°F) (Water).
Melting Point	Not available.
Critical Temperature	Not available.
Specific Gravity	Weighted average: 1.07 (Water = 1)
Vapor Pressure	The highest known value is 2.3 kPa (@ 20°C) (Water).
Vapor Density	The highest known value is 0.62 (Air = 1) (Water).
Volatility	Not available.

Continued on Next Page

Odor Threshold	Not available.
Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, diethyl ether.
Solubility	Easily soluble in cold water, hot water. Soluble in diethyl ether.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials
Incompatibility with various substances	Slightly reactive to reactive with combustible materials, organic materials, metals, acids, alkalis.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Hygroscopic. Incompatible with alcohol, spirit nitrous ether, almost every organic substance, bromides, chlorides, iodides, hypophosphites, sulfites, sulfides, methanol, furfuryl, ethylene glycol, glycerol, bromine pentafluoride, hydrogen sulfide, butanol, isobutanol, acetaldehyde, propionaldehyde, butylaldehyde, benzaldehyde, benzene, perlargonic acid, isopropyl acetate, pentyl acetate, methyldioxane, dimethyldioxane, acetone, benzylethlyaniline, oils, greases or any easily oxidizable material. Acetylene is oxidized violently. Reacts violently with diethyl ether. It will reactly violently with naphthalene, camphor, glycerol, or turpentine. It will ignite ethy alcohol. Selenium reacts violently with Chromium Trioxide. Can react violently with most metal powders, ammonia, ammonium salts, phosphorus, sulfur, acids, finely divided organic compounds, flammable liquids. (Chromium Trioxide)
Special Remarks on Corrosivity	Corrosive because of oxidizing potency. Corrosive to some metals (Chromium Trioxide)
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 800 mg/kg (Rat) (Calculated value for the mixture).
Chronic Effects on Humans	**CARCINOGENIC EFFECTS**: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC [Chromium Trioxide]. **MUTAGENIC EFFECTS**: Mutagenic for mammalian somatic cells. [Chromium Trioxide]. Mutagenic for bacteria and/or yeast. [Chromium Trioxide]. Contains material which may cause damage to the following organs: kidneys, liver, gastrointestinal tract, upper respiratory tract, skin, eyes.
Other Toxic Effects on Humans	Very hazardous in case of skin contact (irritant), of ingestion, . Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive).
Special Remarks on Toxicity to Animals	Lowest Published Lethal Dose LDL [Rat] - Route: Skin; Dose: 55 mg/kg (Chromium Trioxide)

Continued on Next Page

Special Remarks on Chronic Effects on Humans	May cause adverse reproductive effects (effects on fertility: fetotoxicity or post-implantation mortality) and birth defects. May affect genetic material (mutagenic). May cause cancer (tumorigenic). Epidemiological studies indicate long term exposure to dusts and mists at levels above the current PEL in chrome processing is associated with increases in respiratory tract cancer in man. (Chromium Trioxide)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation and possible burns. Contact with broken skin may lead to formation of firmly marginated and deep perforating sores known as "chrome sores." Dermal absorption of large amounts may affect behavior and may result in kidney failure Eyes: Causes eye irritation. May cause severe damage including burns and blindness. Inhalation: Causes irritation of the respiratory tract. May cause severe burns of the nasal septum and respiratory tract, perforation of the nasal septum, congestion, and pulmonary edema. Ingestion: Causes digestive/gastrointestinal tract (mouth, throat, and stomach) irritation or burns with violent epigrastic pain, nausea, vomiting and severe diarrhea. May cause tissue destruction resulting in hemorrhaging, circulatory collapse, unconciousness and possible death. May affect respiration (cyanosis), blood (anemia, thrombocytopenia) May cause kidney failure and liver damage. Chronic Potential Health Effects: Skin: Repeated or prolonged skin contact may cause allergic contact dermatitis. May also cause slow-healing skin ulcers ("chrome sores"), particularly if skin is broken. Eyes: Repeated or prolonged eye contact may cause conjunctivitis. Inhalation: Repeated or prolonged inhalation may cause chronic respiratory tract irritation with chronic rhinitis, hyperemia, chronic catarrh, congestion of the larynx, inflammation of the larynx, polyps of the upper respiratory tract, chronic inflammation of the lungs, emphysema, tracheitis, chronic bronchitis, bronchospasm (asthma), chronic pharyngitis, bronchopneumonia, ulceration and perforation of the nasal septum. Ingestion: Repeated or prolonged ingestion may cause nausea, vomiting, loss of appetite, kidney damage, inflammation of the liver or even hepatitis with jaundice, leukocytosis, leukopenia, monocytosis, and eosinophilia. Medical Conditions Aggravated by Exposure: Persons with cuts or scratches on their hands or other skin surfaces risk developing ulcers on skin contact. (Chromium Trioxide)

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification	Class 8: Corrosive material
Identification	: Chromic acid, solution UNNA: UN1755 PG: II
Special Provisions for Transport	Not available.

Continued on Next Page

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Chromium Trioxide
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Chromium Trioxide
Connecticut hazardous material survey.: Chromium Trioxide
Rhode Island RTK hazardous substances: Chromium Trioxide
Pennsylvania RTK: Chromium Trioxide
Massachusetts RTK: Chromium Trioxide
Massachusetts spill list: Chromium Trioxide
New Jersey: Chromium Trioxide
New Jersey spill list: Chromium Trioxide
TSCA 8(b) inventory: Water; Chromium Trioxide
TSCA 6 final risk management: Chromium Trioxide
TSCA 8(a) IUR: Chromium Trioxide
TSCA 12(b) annual export notification: Chromium Trioxide

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Chromium Trioxide

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

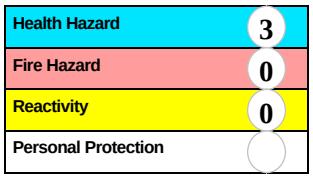
Other Classifications

WHMIS (Canada) CLASS E: Corrosive liquid.

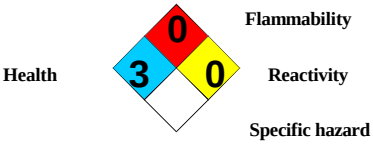
DSCL (EEC) R34- Causes burns.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28- After contact with skin, wash immediately with plenty of water.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.)

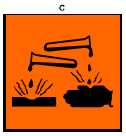


National Fire Protection Association (U.S.A.)



WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)



Continued on Next Page

TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

Gloves.

Full suit.

Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Face shield.

Section 16. Other Information

MSDS Code C2985

References Not available.

Other Special Considerations Not available.

Validated by Gordon Post on 8/11/2019.

Verified by Gordon Post.

Printed 12/26/2019.

CALL 1-888-728-0818

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Lab Alley LLC assumes no responsibility for the completeness or accuracy of the information contained herein.