

Chromic acid

SECTION 1: IDENTIFICATION

Product identifier used on a label:	Chromic acid
Product code:	2074DUS
Recommended use of the chemical and restrictions on use:	Industrial, manufacturing.
Chemical family:	Inorganic acid.
Name, address and phone # of supplier:	Aqua Bond Inc. 440 Passmore Ave. Toronto, ON, M1V 5J8 (416) 754-7211
24 Hr. Emergency phone #	CANUTEC (613) 996-6666

SECTION 2: HAZARDS IDENTIFICATION

Classification of the chemical: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

- Oxidizing liquids- Category 1
- Acute toxicity, oral- Category 2
- Acute toxicity, dermal- Category 2
- Acute toxicity, inhalation- Category 1
- Skin corrosion- Category 1
- Serious eye damage- Category 1
- Respiratory sensitization- Category 1
- Germ cell mutagenicity- Category 1B
- Carcinogenicity- Category 1A
- Reproductive toxicity- Category 2
- Specific target organ toxicity-repeated exposure, inhalation- Category 1
- Acute aquatic toxicity- Category 1

Label elements:



Signal word:	Danger
Hazard statements:	H271 May cause fire or explosion; strong oxidiser. H300 Fatal if swallowed. H310 Fatal in contact with skin. H330 Fatal if inhaled. H314 Causes severe skin burns and eye damage. H340 May cause genetic defects. H350 May cause cancer. H361 Suspected of damaging fertility or the unborn child. H372 Causes damage to respiratory system, blood, liver through prolonged or

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repeated exposure.

Precautionary statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat.
P220 Keep/store away from clothing and other combustible materials.
P221 Take any precaution to avoid mixing with combustibles, organic materials, phosphorus, powdered metals, alcohols, strong bases.
P280 Wear protective gloves/eye protection/face protection.
P283 Wear fire/flame resistant clothing.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P262 Do not get in eyes, on skin, or on clothing.
P260 Do not breathe fume/mist/spray.
P271 Use only outdoors or in a well-ventilated area.
P284 In case of inadequate ventilation wear respiratory protection.

P306+P360 IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P371+P380+P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P370+P378 In case of fire: Use water to extinguish.
P301+P310+P331 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician. Do NOT induce vomiting.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water for at least 15 minutes.
P310 Immediately call a POISON CENTER/doctor.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER/doctor.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P314 Get medical attention if you feel unwell.

P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards: Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death.

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Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/ mixture: Mixture

Ingredient name	CAS Number	Concentration (%)
Chromium trioxide	1333-82-0	100

SECTION 4: FIRST-AID MEASURES

Description of first aid measures:

Ingestion	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway.
Inhalation	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
Skin contact	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention immediately.
Eye contact	Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Chemical burns must be treated promptly by a physician.

Most important symptoms and effects, both acute and delayed:

Causes serious eye damage. Adverse symptoms may include burns, pain, watering, redness. Causes severe skin burns. Symptoms may include pain or itching, redness. Adverse symptoms of ingestion may include nausea, vomiting, severe diarrhea. Respiratory symptoms include coughing, shortness of breath, burning, choking, wheezing.

Indication of any immediate medical attention and special treatment needed:

No specific treatment. Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable Use appropriate fire extinguishing media suitable for surrounding fires. Cool containers with water and do not let water get into the sewer. This product is

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	not flammable.
Unsuitable	None known.
Special hazards arising from the substance:	Emits toxic chromium oxide fumes under fire conditions.
Hazardous thermal decomposition products:	Chromium oxide.
Special protective actions for fire-fighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA).

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Environmental precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Any release to the environment may be subject to reporting requirements under federal/provincial or local regulations.
Methods and materials for containment and cleaning up:	Neutralize the spill with sodium bicarbonate or lime. Absorb the spill with non-combustible absorbent material, then place in a container to dispose. Clean the surface with water to remove any residual contamination. Dispose of waste and cleanup in accordance with all local regulations.
Special spill response procedures:	In case of transportation accident, contact CHEMTREC at 1-800-424-9300.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	Put on appropriate personal protective equipment (see Section 8 for details). Avoid exposure to any dusts and aerosols. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Conditions for safe	Store in a segregated and approved area. Store in original container

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storage: protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Incompatible materials: Organic materials, phosphorus, powdered metals.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Exposure limits

Ingredient

Exposure limits

Chromium trioxide

ACGIH

TLV: 0.05mg/m³ (Cr); TWA: 0.05 mg/m³

OSHA

STEL: 0.1 mg/m³ (CrO₃); PEL (TWA): 0.005 mg/m³

NIOSH

REL: 0.001 mg/m³ (Cr(VI))

Engineering controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Provide eyewash stations and quick drench showers accessible to areas of use and handling.

Individual protection measures:

Eyes/face: Chemical splash goggles and face shield.

Skin: Chemical-resistant, impervious gloves (nitrile or rubber) complying with an approved standard should be worn at all times. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark red flakes.

Odor: Odourless.

Odor threshold: Not available.

pH: Not applicable.

Melting point: Not available.

Freezing point: Not available.

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Initial boiling point and boiling range:

Flash point:	Not flammable.
Evaporation rate:	Not available.
Flammability:	Not available.
Upper and lower flammability limits:	Not applicable.
Vapour pressure:	Not available.
Vapour density:	Not available.
Relative density:	Not applicable.
Solubility:	Soluble in hot or cold water.
Partition coefficient n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Oxidizer. Contact with organic material may cause fire.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	When exposed to high temperatures will produce hazardous fumes.
Incompatible materials:	Organic materials, phosphorus, powdered metals, alcohols, strong bases.
Hazardous decomposition products:	Chromium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure:	SKIN AND EYES: yes INHALATION: yes INGESTION: yes
Potential health effects (acute):	EYE: Causes serious eye damage. Adverse symptoms may include pain, burns, redness and itching. INHALATION: Causes shortness of breath, coughing, burning sensation, and headache. SKIN: Causes severe burns. Symptoms include redness, burns, itching. INGESTION: Causes burns to gastrointestinal tract, nausea, vomiting, pain, severe diarrhea.
Delayed and immediate effects, chronic effects from short and long term exposure:	Product is a corrosive material. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, light-headedness, chest pain,

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Potential chronic health effects: muscle pain.
Causes adverse reproductive effects. Affects genetic material.

Carcinogenicity: May cause cancer.

Classification:

Product	OSHA	IARC	NTP
Chromium trioxide	Regulated carcinogen	Group 1- carcinogenic to humans	Known carcinogen

Mutagenicity: Mutagenic effects have occurred in humans.

Teratogenicity: Effects have occurred in experimental animals.

Developmental effects: Effects have occurred in experimental animals.

Fertility effects: Suspected of damaging fertility.

Sensitization: May cause sensitization by inhalation and skin contact.

Toxicological effects:

Acute toxicity:

Product	Result	Species	Dose	Exposure
Chromium trioxide	LD50 dermal	Rabbit	55 mg/kg	-
	LD50 oral	Rat	50 mg/kg	-
	LC50 inhalation	Rat	0.217 mg/L	4 hours

Irritation/corrosion: Causes severe skin burns and eye damage.

Specific target organ toxicity single exposure: Causes respiratory irritation.

Specific target organ toxicity repeated exposure: Causes damage to organs through repeated exposure.

Target organs: Liver, blood, respiratory system.

Aspiration hazard: No data available.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Name	Result	Species	Exposure
Chromium trioxide	LC50 40mg/L	Freshwater fish	96 hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Mobility in soil: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of

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surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

	TDG
UN Number:	UN1463
UN proper shipping name:	Chromium trioxide, anhydrous
Transport hazard class:	5.1 (8)
Packing group:	II
Environmental hazard:	No.
Special precautions for user:	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: REGULATORY INFORMATION

Canada inventory (DSL): This substance is on the DSL.

SECTION 16: OTHER INFORMATION

Revision date: September 25, 2017

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.



SAFETY DATA SHEET

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IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Disclaimer

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