

## 1. IDENTIFICATION

### Product identifier

**Product Name** Digestion Solution for COD 3-150 mg/L Range

### Other means of identification

**Product Code(s)** CABDH0400-150

**Safety data sheet number** M00486

**UN/ID no** UN1830

### Recommended use of the chemical and restrictions on use

**Recommended Use** Determination of Chemical Oxygen Demand Laboratory Use

**Uses advised against** Consumer use

### Details of the supplier of the safety data sheet

#### Initial Supplier Identifier

VWR International  
2360 Argentia Road Mississauga, Ontario Canada, L5N 5Z7  
Tel: 1-800-932-5000

#### Manufacturer Address

VWR International LLC  
100 Matsonford Rd, Building One, Suite 200  
Radnor, PA 19087 USA  
Tel: +1 610-386-1700

### Emergency telephone number

**Emergency Telephone** CANUTEC 613-992-4624  
Chemtrec 1-800-424-9300

## 2. HAZARD IDENTIFICATION

### Classification

Corrosive to metals	Category 1
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

### Label elements

**Signal word - Danger**

**Hazard statements**

H290 - May be corrosive to metals  
H302 - Harmful if swallowed  
H311 - Toxic in contact with skin  
H314 - Causes severe skin burns and eye damage  
H410 - Very toxic to aquatic life with long lasting effects



**Precautionary Statements**

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]  
P363 - Wash contaminated clothing before reuse  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P405 - Store locked up  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
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 or doctor  
P273 - Avoid release to the environment  
P391 - Collect spillage  
P234 - Keep only in original packaging  
P390 - Absorb spillage to prevent material damage  
P270 - Do not eat, drink or smoke when using this product  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Unknown Acute Toxicity**

0 % of the mixture consists of ingredient(s) of unknown toxicity.  
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)  
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

**Other Hazards Known**

Not applicable.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance**

Not applicable

**Mixture**

**Chemical Family**

Mixture.

**Chemical nature**

Aqueous solution of inorganic acids and salts.

Chemical name	Synonyms	CAS No.	Percent Range	Units	HMIRA #
Sulfuric acid	Oil of vitriol	7664-93-9	80 - 90%	g	-
Sulfuric acid, mercury(2+) salt (1:1)	Mercuric Sulfate Mercury(II) Sulfate	7783-35-9	<1%	g	-
Sulfuric acid, disilver(1+) salt	Silver Sulfate	10294-26-5	<1%	g	-
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )	No information available	7738-94-5	<0.1%	g	-

## 4. FIRST AID MEASURES

**Description of first aid measures**

**General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

**Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.

**Skin contact**

Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.

**Self-protection of the first aider**

Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**

Burning sensation.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

## 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable Extinguishing Media</b>	Caution: Use of water spray when fighting fire may be inefficient.
<b>Specific hazards arising from the chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
<b>Hazardous combustion products</b>	This material will not burn.
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<b>WHMIS Notice</b>	Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Attention! Corrosive material. Keep people away from and upwind of spill/leak.
<b>Other Information</b>	Refer to protective measures listed in Sections 7 and 8.

### Environmental precautions

<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.
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### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labeled containers.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Advice on safe handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.
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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

### Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	New Foundland & Labrador OEL
Sulfuric acid 80 - 90%	TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Sulfuric acid, mercury(2+) salt (1:1) <1%	TWA: 0.025 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> SKN* R	TWA: 0.025 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> SKN*
Sulfuric acid, disilver(1+) salt <1%	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.03 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) <0.1%	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	NDF	NDF	TWA: 0.05 mg/m <sup>3</sup>	NDF

Chemical name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Sulfuric acid 80 - 90%	TWA: 0.2 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Sulfuric acid, mercury(2+) salt (1:1) <1%	TWA: 0.025 mg/m <sup>3</sup> STEL: 0.075 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> STEL: 0.075 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup>
Sulfuric acid, disilver(1+) salt <1%	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.03 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.03 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>

Chemical name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Sulfuric acid 80 - 90%	TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup>	STEL: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>
Sulfuric acid, mercury(2+) salt (1:1) <1%	TWA: 0.025 mg/m <sup>3</sup> SKN*	TWA: 0.025 mg/m <sup>3</sup> STEL: 0.075 mg/m <sup>3</sup> SKN*	NDF
Sulfuric acid, disilver(1+) salt <1%	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.03 mg/m <sup>3</sup>	STEL: 0.03 mg/m <sup>3</sup> TWA: 0.01 mg/m <sup>3</sup>
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) <0.1%	NDF	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	STEL: 0.1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid 80 - 90%	TWA: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>
Sulfuric acid, mercury(2+) salt (1:1) <1%	TWA: 0.025 mg/m <sup>3</sup> S*	(vacated) Ceiling: 0.1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Hg Ceiling: 0.1 mg/m <sup>3</sup> Hg TWA: 0.05 mg/m <sup>3</sup> except Organo alkyls Hg vapor
Sulfuric acid, disilver(1+) salt <1%	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> (vacated) TWA: 0.01 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ag TWA: 0.01 mg/m <sup>3</sup> Ag
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) <0.1%	NDF	TWA: 5 µg/m <sup>3</sup> (vacated) Ceiling: 0.1 mg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup>	TWA: 0.0002 mg/m <sup>3</sup> Cr

### Legend

See section 16 for terms and abbreviations

**Appropriate engineering controls**

**Engineering Controls**  
Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hand Protection** Wear suitable gloves. Impervious gloves.

**Eye/face protection** Face protection shield.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**General Hygiene Considerations** Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace.

**Environmental exposure controls** Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

**Thermal hazards** None under normal processing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid
<b>Appearance</b>	Turbid solution
<b>Odor</b>	Odorless
<b>Color</b>	light orange
<b>Odor threshold</b>	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	Not applicable	
<b>pH</b>	< 0.5	
<b>Melting point/freezing point</b>	~ 4 °C / 39.2 °F	Estimation based on theoretical calculation
<b>Boiling point / boiling range</b>	~ 232 °C / 449.6 °F	Estimation based on theoretical calculation
<b>Evaporation rate</b>	1.04 (water = 1)	Estimation based on theoretical calculation
<b>Vapor pressure</b>	1.8 mm Hg / 0.24 kPa at 25 °C / 77 °F	Estimation based on theoretical calculation
<b>Vapor density (air = 1)</b>	0.03 (air = 1)	
<b>Specific gravity (water = 1 / air = 1)</b>	1.78	Estimation based on theoretical calculation
<b>Partition Coefficient (n-octanol/water)</b>	Not applicable	

<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable
<b>Autoignition temperature</b>	No data available
<b>Decomposition temperature</b>	300 °C / 572 °F
<b>Dynamic viscosity</b>	~ 25 cP (mPa s) at 20 °C / 68 °F
<b>Kinematic viscosity</b>	~ 14.045 cSt (mm²/s) at 20 °C / 68 °F

**Solubility(ies)**

**Water solubility**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 mg/L	25 °C / 77 °F

**Solubility in other solvents**

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
None reported	No information available	No data available	No information available

**Other Information**

**Metal Corrosivity**

Classified as corrosive to metal according to GHS criteria

<b>Steel Corrosion Rate</b>	4.88 mm/yr / 0.19 in/yr
<b>Aluminum Corrosion Rate</b>	55.4 mm/yr / 2.18 in/yr

**Volatile Organic Compounds (VOC) Content**

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sulfuric acid	7664-93-9	No data available	-
Sulfuric acid, mercury(2+) salt (1:1)	7783-35-9	Not applicable	-
Sulfuric acid, disilver(1+) salt	10294-26-5	No data available	-
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )	7738-94-5	No data available	-

**Explosive properties**

<b>Upper explosion limit</b>	No data available
<b>Lower explosion limit</b>	No data available

**Flammable properties**

<b>Flash point</b>	No data available
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**Flammability Limit in Air**

<b>Upper flammability limit:</b>	No data available
<b>Lower flammability limit:</b>	No data available

**Oxidizing properties** No data available.

**Bulk density** Not applicable

**Particle Size** No information available

**Particle Size Distribution** No information available

## 10. STABILITY AND REACTIVITY

### Reactivity

Not applicable.

### Chemical stability

**Stability** Stable under normal conditions.

### Explosion data

**Sensitivity to Mechanical Impact** None

**Sensitivity to Static Discharge** None.

### Possibility of Hazardous Reactions

**Possibility of Hazardous Reactions** None under normal processing.

### Hazardous polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

**Conditions to avoid** Exposure to air or moisture over prolonged periods.

### Incompatible materials

**Incompatible materials** Oxidizing agent. Acids. Bases.

### Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

## 11. TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

#### **Product Information**

**Inhalation** Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

**Eye contact** Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

**Skin contact** May cause irritation. Toxic in contact with skin.

**Ingestion** Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

**Aggravated Medical Conditions** Eye disorders. Skin disorders. Respiratory disorders. Preexisting eye disorders. Teeth.

**Toxicologically synergistic products** None known.

**Toxicokinetics, metabolism and distribution** See ingredients information below.

Chemical name	Toxicokinetics, metabolism and distribution
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Chemical name	Toxicokinetics, metabolism and distribution
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	The corrosivity of sulfuric acid makes it difficult to assess its effects on metabolism. Its corrosivity is also the main contributor to acute deaths, therefore it is not classified for acute toxicity.
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	Central nervous system is the most sensitive target for mercury exposure.
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (<0.1%) CAS#: 7738-94-5	Chromium is human carcinogen mostly by inhalation exposure.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms**

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

**Product Acute Toxicity Data**

Test data reported below

**Oral Exposure Route**

Endpoint type	Reported dose	Toxicological effects	Key literature references and sources for data
Rat LD <sub>50</sub>	360 mg/kg	<b>Behavioral</b> Salivation Sedation Vocalization <b>Chronic</b> Death <b>Eye</b> Ptosis <b>Gastrointestinal</b> Corrosion of the stomach Enteritis of the intestines <b>Liver</b> Adhesion of the liver to the stomach <b>Lungs, Thorax, or Respiration</b> Congestion of the lungs Respiratory depression Nasal discharge <b>Skin and Appendages</b> Piloerection	Outside testing

**Dermal Exposure Route**

No data available

**Inhalation (Dust/Mist) Exposure Route**

No data available

**Inhalation (Vapor) Exposure Route**

No data available

**Inhalation (Gas) Exposure Route**

No data available

**Unknown Acute Toxicity**

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

**Acute Toxicity Estimations (ATE)**

The following values are calculated based on chapter 3.1 of the GHS document

<b>ATEmix (oral)</b>	No information available
<b>ATEmix (dermal)</b>	610.00 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	6.11 mg/L
<b>ATEmix (inhalation-vapor)</b>	No information available
<b>ATEmix (inhalation-gas)</b>	No information available

**Ingredient Acute Toxicity Data****Oral Exposure Route**

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	Rat LD <sub>50</sub>	> 5000 mg/kg	None reported	None reported	Vendor SDS
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (<0.1%) CAS#: 7738-94-5	Rat LD <sub>50</sub>	80 mg/kg	None reported	<b>Lungs, Thorax, or Respiration</b> Cyanosis <b>Gastrointestinal</b> Hypermotility Diarrhea <b>Skin and Appendages</b> Other changes	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Rat LD <sub>50</sub>	2140 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	Mouse LD <sub>50</sub>	25 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**Dermal Exposure Route**

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	Rat LD <sub>50</sub>	625 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**Inhalation (Dust/Mist) Exposure Route**

If available, see data below

**Inhalation (Vapor) Exposure Route**

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Rat LC <sub>50</sub>	0.510 mg/L	None reported	None reported	LOLI

**Inhalation (Gas) Exposure Route**

If available, see data below

**Product Specific Target Organ Toxicity Single Exposure Data****Oral Exposure Route****Dermal Exposure Route**

No data available

**Inhalation (Dust/Mist) Exposure Route**

No data available

**Inhalation (Vapor) Exposure Route**

No data available

**Inhalation (Gas) Exposure Route**

No data available

**Ingredient Specific Target Organ Toxicity Single Exposure Data**

**Oral Exposure Route** If available, see data below

**Dermal Exposure Route** If available, see data below

**Inhalation (Dust/Mist) Exposure Route** If available, see data below

**Inhalation (Vapor) Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Human TD <sub>Lo</sub>	0.144 mg/L	5 minutes	Lungs, Thorax, or Respiration Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)

**Inhalation (Gas) Exposure Route** If available, see data below

**Aspiration toxicity**

If available, see data below

**Kinematic viscosity** ~ 14.045 cSt (mm<sup>2</sup>/s)

**Product Skin Corrosion/Irritation Data**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB (Hazardous Substances Data Bank)
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	Existing human experience	Human	None reported	None reported	Skin irritant	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)

**Product Serious Eye Damage/Eye Irritation Data**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB (Hazardous Substances Data Bank)
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	Existing human experience	Human	None reported	None reported	Eye irritant	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	Standard Draize Test	Rabbit	180 mg	None reported	Corrosive to eyes	ECHA (The European Chemicals Agency)

**Sensitization Information**

**Product Sensitization Data**

Skin Sensitization Exposure Route  
Respiratory Sensitization Exposure Route

No data available.  
No data available.

**Ingredient Sensitization Data**

Skin Sensitization Exposure Route  
Respiratory Sensitization Exposure Route

If available, see data below.  
If available, see data below.

**Chronic Toxicity Information**

**Product Specific Target Organ Toxicity Repeat Dose Data**

Oral Exposure Route  
Dermal Exposure Route  
Inhalation (Dust/Mist) Exposure Route  
Inhalation (Vapor) Exposure Route  
Inhalation (Gas) Exposure Route

No data available.  
No data available.  
No data available.  
No data available.  
No data available.

**Ingredient Specific Target Organ Toxicity Repeat Exposure Data**

Oral Exposure Route  
Dermal Exposure Route  
Inhalation (Dust/Mist) Exposure Route  
Inhalation (Vapor) Exposure Route

If available, see data below  
If available, see data below  
If available, see data below  
If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Human TC <sub>Lo</sub>	.003 mg/L	168 days	<b>Musculoskeletal</b> Changes in teeth and supporting structures	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route

If available, see data below

**Product Carcinogenicity Data**

Oral Exposure Route  
Dermal Exposure Route  
Inhalation (Dust/Mist) Exposure Route  
Inhalation (Vapor) Exposure Route  
Inhalation (Gas) Exposure Route

No data available  
No data available  
No data available  
No data available  
No data available

**Ingredient Carcinogenicity Data**

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
Sulfuric acid	7664-93-9	A2	Group 1	Known	X
Sulfuric acid, mercury(2+) salt (1:1)	7783-35-9	-	Group 3	-	-
Sulfuric acid, disilver(1+) salt	10294-26-5	-	-	-	-
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )	7738-94-5	-	Group 1	Known	X

**Legend**

ACGIH (American Conference of Governmental Industrial Hygienists)	A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)	Group 1 - Carcinogenic to Humans Group 3 - Not classifiable as a human carcinogen
NTP (National Toxicology Program)	Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present

Oral Exposure Route  
Dermal Exposure Route  
Inhalation (Dust/Mist) Exposure Route  
Inhalation (Vapor) Exposure Route  
Inhalation (Gas) Exposure Route

If available, see data below  
If available, see data below  
If available, see data below  
If available, see data below  
If available, see data below

**Product Germ Cell Mutagenicity *invitro* Data**

No data available.

**Ingredient Germ Cell Mutagenicity *invitro* Data**

If available, see data below

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available

**Product Germ Cell Mutagenicity *in vivo* Data**

Oral Exposure Route

No data available

Dermal Exposure Route

No data available

Inhalation (Dust/Mist) Exposure Route

No data available

Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

**Ingredient Germ Cell Mutagenicity *in vivo* Data**

Oral Exposure Route

If available, see data below

Dermal Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

If available, see data below

**Product Reproductive Toxicity Data**

Oral Exposure Route

No data available

Dermal Exposure Route

No data available

Inhalation (Dust/Mist) Exposure Route

No data available

Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

**Ingredient Reproductive Toxicity Data**

Oral Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (80 - 90%) CAS#: 7664-93-9	Rabbit TC <sub>Lo</sub>	.02 mg/L	7 hours	<b>Specific Developmental Abnormalities</b> Musculoskeletal system	No information available

Inhalation (Gas) Exposure Route

If available, see data below

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects

**Product Ecological Data**

Aquatic toxicity

Fish

No data available

Crustacea

No data available

Algae

No data available

**Ingredient Ecological Data**

Aquatic toxicity

Fish

If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
---------------	---------------	---------	---------------	---------------	--

Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	96 hours	<i>Pimephales promelas</i>	LC <sub>50</sub>	0.0012 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (<0.1%) CAS#: 7738-94-5	96 hours	None reported	LC <sub>50</sub>	0.0031 mg/L	CEPA (Canadian Environmental Protection Agency)

**Crustacea**

If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	48 Hours	<i>Daphnia magna</i>	LC <sub>50</sub>	0.00022 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

**Algae**

If available, see ingredient data below

**Other Information**

Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL): Environmentally Hazardous Substances Categorizations				
Chemical name	Category	Persistent	Bioaccumulation	Inherently Toxic to Aquatic Organisms
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	Inorganics	Yes	No	Yes
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (<0.1%) CAS#: 7738-94-5	Inorganics	Yes	No	Yes

**Persistence and degradability**

**Product Biodegradability Data**

No data available.

**Ingredient Biodegradability Data**

Chemical name	Test method	Biodegradation	Exposure time	Results
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	Inorganic Salt	None reported	None reported	Not readily biodegradable
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	Inorganic Salt	None reported	None reported	Not readily biodegradable

**Bioaccumulation**

**Product Bioaccumulation Data**

No data available.

**Partition Coefficient (n-octanol/water)**

Not applicable

**Ingredient Bioaccumulation Data**

Chemical name	Test method	Exposure time	Species	Bioconcentration factor (BCF)	Results
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	None reported	None reported	None reported	BCF > 1000	Has the potential to bioaccumulate
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	None reported	8 days	<i>Oncorhynchus mykiss</i>	BCF = 2.5	Does not have the potential to bioaccumulate

#### Mobility

Soil Organic Carbon-Water Partition Coefficient Not applicable

#### Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 mg/L	25 °C / 77 °F

#### Other adverse effects

Contains a substance with an endocrine-disrupting potential.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

### 14. TRANSPORT INFORMATION

#### Transport Canada

UN/ID no UN1830  
 Proper shipping name Sulfuric acid  
 Hazard Class 8  
 Packing Group II  
 Description UN1830, Sulfuric acid, 8, II  
 Emergency Response Guide Number 137

#### TDG

UN/ID no UN1830  
 Proper shipping name Sulfuric acid  
 Hazard Class 8  
 Packing Group II  
 Description UN1830, Sulfuric acid, 8, II

#### IATA

UN/ID no UN1830  
 Proper shipping name Sulphuric acid  
 Hazard Class 8  
 Packing Group II  
 ERG Code 8L

**Description** UN1830, Sulphuric acid, 8, II

**IMDG**

**UN/ID no** UN1830  
**Proper shipping name** Sulphuric acid  
**Hazard Class** 8  
**Packing Group** II  
**EmS-No** F-A, S-B  
**Description** UN1830, Sulphuric acid (Sulfuric acid, disilver(1+) salt), 8, II, Marine Pollutant

**Note:** No special precautions necessary.

**Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

## 15. REGULATORY INFORMATION

**Regulatory information**

**National Inventories**

**DSL/NDSL** Complies

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**International Inventories**

**TSCA** Complies  
**EINECS/ELINCS** Complies  
**ENCS** Complies  
**IECSC** Complies  
**KECL** Complies  
**PICCS** Complies  
**TCSI** Complies  
**AICS** Complies  
**NZIoC** Complies

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**TCSI** - Taiwan Chemical Substances Inventory

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**Canada - CEPA - Mercury Containing Products**

Chemical name	Canada - CEPA - Mercury Containing Products
Sulfuric acid, mercury(2+) salt (1:1) CAS#: 7783-35-9	Applies

**International Regulations**

**Ozone-depleting substances (ODS)** Not applicable

**Persistent Organic Pollutants** Not applicable



**Export Notification requirements**

Chemical name	Export Notification requirements
Sulfuric acid, mercury(2+) salt (1:1) - 7783-35-9	Rotterdam

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

**Special Comments**

This product contains mercury and may be subject to reporting and recordkeeping requirements

**NFPA and HMIS Classifications**

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and Chemical Properties -
HMIS	Health hazards - 3	Flammability - 0	Physical Hazards - 0	Personal protection - X - See section 8 for more information

**Key or legend to abbreviations and acronyms used in the safety data sheet**

NIOSH IDLH	Immediately Dangerous to Life or Health
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	no data

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

**Issue Date** 28-Jun-2017

**Revision Date** 05-Apr-2018

**Revision Note**

SDS sections updated  
16

**Disclaimer**

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

**End of Safety Data Sheet**