



**Be Right™**

# SAFETY DATA SHEET

Issue Date 27-04-2020

Revision Date 10-Feb-2025

Version 3.5

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## 1. IDENTIFICATION

### Product identifier

**Product Name** Digestion Solution for COD 20-1500 mg/l Range

### Other means of identification

**Product Code(s)** 2125925

**Safety data sheet number** M00485

**UN/ID no** UN1830

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

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

**Uses advised against** Consumer use.

**Restrictions on use** For Laboratory Use Only.

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

#### **Manufacturer Address**

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

#### **Emergency telephone number**

+1(303) 623-5716 - 24 Hour Service

## 2. HAZARDS IDENTIFICATION

### Classification

#### **Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|   |                           |
|---|---------------------------|
| Corrosive to metals                       | Category 1                |
| Acute toxicity - Oral                     | Category 4                |
| Acute toxicity - Dermal                   | Category 3                |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4                |
| Skin corrosion/irritation                 | Category 1 Sub-category A |
| Serious eye damage/eye irritation         | Category 1                |
| Skin sensitization                        | Category 1                |
| Mutagenicity                              | Category 1B               |
| Carcinogenicity                           | Category 1A               |
| Reproductive toxicity                     | Category 2                |
| Aquatic Acute Toxicity                    | Category 1                |
| Chronic aquatic toxicity                  | Category 1                |

### Hazards not otherwise classified (HNOC)

Data insufficient for GHS classification but significant enough for mention suggests:

CANCER HAZARD. STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID CAN CAUSE CANCER.

Inhalation of low concentrations of sulfuric acid may result in airway irritation such as cough and shortness of breath; high concentrations may result in acute effects such as cough.

### 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  
H317 - May cause an allergic skin reaction  
H332 - Harmful if inhaled  
H340 - May cause genetic defects  
H350 - May cause cancer  
H361 - Suspected of damaging fertility or the unborn child  
H410 - Very toxic to aquatic life with long lasting effects

#### **Precautionary statements**

P405 - Store locked up  
P501 - Dispose of contents/ container to an approved waste disposal plant  
P271 - Use only outdoors or in a well-ventilated area  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P280 - Wear protective gloves, protective clothing, eye protection, and face protection  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
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/physician  
P363 - Wash contaminated clothing before reuse  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P201 - Obtain special instructions before use  
P308 + P313 - IF exposed or concerned: Get medical advice/attention  
P273 - Avoid release to the environment  
P391 - Collect spillage  
P234 - Keep only in original container  
P390 - Absorb spillage to prevent material damage  
P270 - Do not eat, drink or smoke when using this product

#### **Other Hazards Known**

None

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Substance**

Not applicable

**Mixture**

**Chemical Family**

Mixture.

**Chemical nature**

Aqueous solution of inorganic acids and salts.

Percent ranges are used where confidential product information is applicable.

| Chemical name                                   | CAS No.    | Percent Range | HMRIC # |
|---|------------|---------------|---------|
| Sulfuric acid                                   | 7664-93-9  | 80 - 90%      | -       |
| Sulfuric acid, mercury(II) salt                 | 7783-35-9  | <1%           | -       |
| Sulfuric acid, disilver(1+) salt                | 10294-26-5 | <1%           | -       |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) | 7738-94-5  | <1%           | -       |

#### 4. FIRST AID MEASURES

**Description of first aid measures**

**General advice**

Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

**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. Get immediate medical advice/attention.

**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. May cause an allergic skin reaction.

**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. 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. Avoid breathing vapors or mists.

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

**Symptoms**

Burning sensation. Itching. Rashes. Hives. Coughing and/ or wheezing. Difficulty in breathing.

**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. May cause sensitization in susceptible persons. Treat symptomatically.

## 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. Product is or contains a sensitizer. May cause sensitization by skin contact. |
| <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

|                    |  |
|--------------------|--|
| <b>U.S. Notice</b> | Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals. |
|--------------------|--|

### Personal precautions, protective equipment and emergency procedures

|                             |  |
|-----------------------------|--|
| <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. Avoid breathing vapors or mists. |
| <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. |
|----------------------------------|---|

### 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>         | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal. |
| <b>Prevention of secondary hazards</b> | Clean contaminated objects and areas thoroughly observing environmental regulations.   |
| <b>Reference to other sections</b>     | See section 8 for more information. See section 13 for more information.   |

## 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 |
|--------------------------------|---|

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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. Remove contaminated clothing and shoes. Avoid breathing vapors or mists.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

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. Protect from light.

**Flammability class**

Not applicable

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

| Chemical name  | ACGIH TLV   | OSHA PEL   | NIOSH  |
|--|---|--|--|
| Sulfuric acid<br>CAS#: 7664-93-9                                   | TWA: 0.2 mg/m <sup>3</sup> thoracic<br>particulate matter | TWA: 1 mg/m <sup>3</sup><br>(vacated) TWA: 1 mg/m <sup>3</sup>   | IDLH: 15 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup>   |
| Sulfuric acid, mercury(II) salt<br>CAS#: 7783-35-9                 | TWA: 0.025 mg/m <sup>3</sup> Hg<br>Sk*                    | (vacated) Ceiling: 0.1 mg/m <sup>3</sup>   | IDLH: 10 mg/m <sup>3</sup> Hg<br>Ceiling: 0.1 mg/m <sup>3</sup> Hg<br>TWA: 0.05 mg/m <sup>3</sup> except<br>Organo alkyls Hg vapor |
| Sulfuric acid, disilver(1+) salt<br>CAS#: 10294-26-5               | TWA: 0.01 mg/m <sup>3</sup> Ag                            | TWA: 0.01 mg/m <sup>3</sup><br>(vacated) TWA: 0.01 mg/m <sup>3</sup>                                   | IDLH: 10 mg/m <sup>3</sup> Ag<br>TWA: 0.01 mg/m <sup>3</sup> Ag  |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )<br>CAS#: 7738-94-5 | -   | TWA: 5 µg/m <sup>3</sup><br>(vacated) Ceiling: 0.1 mg/m <sup>3</sup><br>Ceiling: 0.1 mg/m <sup>3</sup> | TWA: 0.0002 mg/m <sup>3</sup> Cr   |

**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.

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Thermal hazards None under normal processing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                |                 |
|----------------|-----------------|
| Physical state | Liquid          |
| Appearance     | Turbid solution |
| Color          | light orange    |
| Odor           | Odorless        |
| Odor threshold | Not applicable  |

| Property  | Values   | Remarks • Method |
|---|--|------------------|
| Molecular weight                                | Not applicable                                 |                  |
| pH  | < 0.5  |                  |
| Melting point / freezing point                  | ~ 0 °C / 32 °F                                 |                  |
| Initial boiling point and boiling range         | ~ 100 °C / 212 °F                              |                  |
| Evaporation rate                                | No data available                              |                  |
| Vapor pressure                                  | 0.975 mm Hg / 0.13 kPa at 145.8 °C / 294.44 °F |                  |
| Relative vapor density                          | 0.62   |                  |
| Specific gravity - VALUE 1                      | 1.776  |                  |
| Partition coefficient                           | No data available                              |                  |
| Soil Organic Carbon-Water Partition Coefficient | No data available                              |                  |
| Autoignition temperature                        | No data available                              |                  |
| Decomposition temperature                       | No data available                              |                  |
| Dynamic viscosity                               | No data available                              |                  |
| Kinematic viscosity                             | No data available                              |                  |

### Solubility(ies)

#### Water solubility

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

#### Solubility in other solvents

|               |                           |                   |                          |
|---------------|---------------------------|-------------------|--------------------------|
| Chemical Name | Solubility classification | Solubility        | Solubility Temperature   |
| None reported | No information available  | No data available | No information available |

### Other information

#### Corrosive to metals

Classified as corrosive to metal according to GHS criteria

Steel Corrosion Rate

> 6.25 mm/yr / > 0.25 in/yr

Aluminum Corrosion Rate

> 6.25 mm/yr / > 0.25 in/yr

#### Volatile Organic Compounds (VOC) Content

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| Chemical name                                   | CAS No.    | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|---|------------|--|---------------------|
| Sulfuric acid                                   | 7664-93-9  | No data available                        | -                   |
| Sulfuric acid, mercury(II) salt                 | 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

**Upper explosion limit**

No data available

**Lower explosion limit**

No data available

#### Flammable properties

**Flash point**

No data available

#### Flammability Limit in Air

**Upper flammability limit:**

No data available

**Lower flammability limit:**

No data available

#### Oxidizing properties

No data available.

#### Bulk density

## 10. STABILITY AND REACTIVITY

#### Reactivity

Corrosive on contact with water. Corrosive to metal.

#### Chemical stability

Stable under normal conditions.

#### Explosion data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

#### Possibility of hazardous reactions

None under normal processing.

#### Hazardous polymerization

Hazardous polymerization does not occur.

#### Conditions to avoid

Exposure to air or moisture over prolonged periods. Excessive heat.

#### 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. Harmful by inhalation.

**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 sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Toxic in contact with skin. Corrosive. Causes severe burns. Avoid contact with skin and clothing.

**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.

**Symptoms**

Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

**Acute toxicity**

Harmful if swallowed

Toxic in contact with skin

Harmful if inhaled

**Mixture**

Test data reported below.

**Oral Exposure Route**

| Endpoint type           | Reported dose | Key literature references and sources for data |
|-------------------------|---------------|--|
| Rat<br>LD <sub>50</sub> | 360 mg/kg     | Outside testing                                |

**Ingredient Acute Toxicity Data**

Test data reported below.

**Oral Exposure Route**

| Chemical name  | Endpoint type           | Reported dose | Exposure time | Toxicological effects  | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|--|--|
| Sulfuric acid, mercury(II) salt (<1%)<br>CAS#: 7783-35-9                 | None reported           | Estimated     | None reported | None reported  | No information available                       |
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5               | Rat<br>LD <sub>50</sub> | > 5000 mg/kg  | None reported | None reported  | No information available                       |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (<1%)<br>CAS#: 7738-94-5 | Rat<br>LD <sub>50</sub> | 80 mg/kg      | None reported | <b>Lungs, Thorax, or Respiration</b><br>Cyanosis<br><b>Gastrointestinal</b><br>Hypermotility<br>Diarrhea<br><b>Skin and Appendages</b> | RTECS  |



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|  |  |  |  |               |  |
|--|--|--|--|---------------|--|
|  |  |  |  | Other changes |  |
|--|--|--|--|---------------|--|

#### Dermal Exposure Route

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

| Chemical name  | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|---------------|---------------|---------------|-----------------------|--|
| Sulfuric acid, mercury(II) salt (<1%)<br>CAS#: 7783-35-9 | None reported | Estimated     | None reported | None reported         | No information available                       |

#### Inhalation (Vapor) Exposure Route

| Chemical name  | Endpoint type | Reported dose                          | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|---------------|--|---------------|-----------------------|--|
| Sulfuric acid, mercury(II) salt (<1%)<br>CAS#: 7783-35-9 | None reported | Estimated from theoretical calculation | None reported | None reported         | No information available                       |

#### Unknown Acute Toxicity

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

#### Acute Toxicity Estimations (ATE)

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

|                               |                          |
|-------------------------------|--------------------------|
| ATEmix (oral)                 | No information available |
| ATEmix (dermal)               | 611.25 mg/kg             |
| ATEmix (inhalation-dust/mist) | 4.32 mg/l                |
| ATEmix (inhalation-vapor)     | No information available |
| ATEmix (inhalation-gas)       | No information available |

#### Skin corrosion/irritation

Causes severe burns.

#### Mixture

No data available.

#### Ingredient Skin Corrosion/Irritation Data

Test data reported below.

| Chemical name  | Test method               | Species | Reported dose | Exposure time | Results                             | Key literature references and sources for data |
|--|---------------------------|---------|---------------|---------------|-------------------------------------|--|
| Sulfuric acid (80 - 90%)<br>CAS#: 7664-93-9                | Existing human experience | Human   | None reported | None reported | Corrosive to skin                   | HSDB   |
| Sulfuric acid, mercury(II) salt (<1%)<br>CAS#: 7783-35-9   | Existing human experience | Human   | None reported | None reported | Skin irritant                       | GESTIS   |
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | Standard Draize Test      | Rabbit  | 500 mg        | 4 hours       | Not corrosive or irritating to skin | ECHA   |

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**Serious eye damage/irritation**

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

**Mixture**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

Test data reported below.

| Chemical name  | Test method               | Species | Reported dose | Exposure time | Results           | Key literature references and sources for data |
|--|---------------------------|---------|---------------|---------------|-------------------|--|
| Sulfuric acid (80 - 90%)<br>CAS#: 7664-93-9                | Existing human experience | Human   | None reported | None reported | Corrosive to eyes | HSDB   |
| Sulfuric acid, mercury(II) salt (<1%)<br>CAS#: 7783-35-9   | Existing human experience | Human   | None reported | None reported | Eye irritant      | GESTIS   |
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | Standard Draize Test      | Rabbit  | 180 mg        | None reported | Corrosive to eyes | ECHA   |

**Respiratory or skin sensitization**

May cause sensitization by skin contact.

**Mixture**

No data available.

**Ingredient Sensitization Data**

Test data reported below.

**Skin Sensitization Exposure Route**

| Chemical name  | Test method          | Species    | Results                               | Key literature references and sources for data |
|--|----------------------|------------|---------------------------------------|--|
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | <i>in vivo</i> Assay | Guinea pig | Not confirmed to be a skin sensitizer | ECHA   |

**STOT - single exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

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

Test data reported below.

**Inhalation (Vapor) Exposure Route**

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

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**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

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

Test data reported below.

**Oral Exposure Route**

| Chemical name  | Endpoint type | Reported dose | Exposure time | Toxicological effects             | Key literature references and sources for data |
|--|---------------|---------------|---------------|-----------------------------------|--|
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | Rat LD        | > 2000 mg/kg  | 14 days       | No toxicological effects observed | ECHA   |

**Inhalation (Vapor) Exposure Route**

| Chemical name                               | Endpoint type          | Reported dose | Exposure time | Toxicological effects  | Key literature references and sources for data |
|---|------------------------|---------------|---------------|--|--|
| Sulfuric acid (80 - 90%)<br>CAS#: 7664-93-9 | Human TC <sub>Lo</sub> | 0.003 mg/L    | 168 days      | <b>Musculoskeletal</b><br>Changes in teeth and supporting structures | RTECS  |

**Carcinogenicity**

Classification based on data available for ingredients. Contains a known or suspected carcinogen.

**Mixture**

No data available.

**Ingredient Carcinogenicity Data**

No data available.

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

**Legend**

|  |  |
|--|--|
| <b>ACGIH (American Conference of Governmental Industrial Hygienists)</b> | A2 - Suspected Human Carcinogen  |
| <b>IARC (International Agency for Research on Cancer)</b>                | Group 1 - Carcinogenic to Humans<br>Group 3 - Not Classifiable as to Carcinogenicity in Humans |
| <b>NTP (National Toxicology Program)</b>                                 | Known - Known Carcinogen   |
| <b>OSHA</b>  | X - Present  |

**Germ cell mutagenicity**

Classification based on data available for ingredients. Contains a known or suspected mutagen. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

**Mixture invitro Data**

No data available.

**Substance invitro Data**

|           |              |
|-----------|--------------|
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|-----------|--------------|

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Test data reported below.

| Chemical name  | Test                                | Cell Strain      | Reported dose | Exposure time | Results                               | Key literature references and sources for data |
|--|-------------------------------------|------------------|---------------|---------------|---------------------------------------|--|
| Sulfuric acid (80 - 90%)<br>CAS#: 7664-93-9                | Cytogenetic analysis                | Hamster ovary    | 4 mmol/L      | None reported | Positive test result for mutagenicity | No information available                       |
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | Mutation in mammalian somatic cells | Human lymphocyte | .08 mg/L      | 3 hours       | Negative                              | ECHA   |

**Mixture in vivo Data**

No data available.

**Substance in vivo Data**

No data available.

**Reproductive toxicity**

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

**Mixture**

No data available.

**Ingredient Reproductive Toxicity Data**

Test data reported below.

**Inhalation (Vapor) Exposure Route**

| Chemical name                               | Endpoint type           | Reported dose | Exposure time | Toxicological effects   | Key literature references and sources for data |
|---|-------------------------|---------------|---------------|---|--|
| Sulfuric acid (80 - 90%)<br>CAS#: 7664-93-9 | Rabbit TC <sub>Lo</sub> | 0.02 mg/L     | 7 hours       | <b>Specific Developmental Abnormalities</b><br>Musculoskeletal system | No information available                       |

**Aspiration hazard**

Based on available data, the classification criteria are not met.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

**Unknown aquatic toxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

**Mixture**

**Aquatic Acute Toxicity**

No data available.

**Aquatic Chronic Toxicity**

No data available.

**Substance**

**Aquatic Acute Toxicity**

Test data reported below.

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#### Fish

| Chemical name  | Exposure time | Species                    | Endpoint type    | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------------|------------------|---------------|--|
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5               | 96 hours      | <i>Pimephales promelas</i> | LC <sub>50</sub> | 0.0012 mg/L   | ECHA   |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (<1%)<br>CAS#: 7738-94-5 | 96 hours      | None reported              | LC <sub>50</sub> | 0.0031 mg/L   | CEPA   |

#### Crustacea

| Chemical name  | Exposure time | Species              | Endpoint type    | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------|------------------|---------------|--|
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | 48 Hours      | <i>Daphnia magna</i> | LC <sub>50</sub> | 0.00022 mg/L  | ECHA   |

#### Aquatic Chronic Toxicity

No data available.

| Chemical name  | Exposure time | Species                   | Endpoint type    | Reported dose | Key literature references and sources for data |
|--|---------------|---------------------------|------------------|---------------|--|
| Sulfuric acid, disilver(1+) salt (<1%)<br>CAS#: 10294-26-5 | 7 days        | <i>Ceriodaphnia dubia</i> | EC <sub>10</sub> | 0.00248 mg/L  | EPA  |

#### Persistence and degradability

##### Mixture

No data available.

##### Mixture

No data available.

##### Partition coefficient

No data available

##### Mobility

##### Soil Organic Carbon-Water Partition Coefficient

No data available

##### Other adverse effects

No information available

### 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.

##### US EPA Waste Number

D009, D002

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**Special instructions for disposal** Dispose of all mercury contaminated material at an E.P.A. hazardous waste facility. Dispose of material in an E.P.A. approved hazardous waste facility.

## 14. TRANSPORT INFORMATION

### DOT

|                                 |               |
|---------------------------------|---------------|
| UN/ID no                        | UN1830        |
| Proper shipping name            | Sulfuric acid |
| Transport hazard class(es)      | 8             |
| Packing Group                   | II            |
| Emergency Response Guide Number | 137           |

### TDG

|                            |               |
|----------------------------|---------------|
| UN/ID no                   | UN1830        |
| Proper shipping name       | Sulfuric acid |
| Transport hazard class(es) | 8             |
| Packing Group              | II            |

### IATA

|                            |                |
|----------------------------|----------------|
| UN number or ID number     | UN1830         |
| Proper shipping name       | Sulphuric acid |
| Transport hazard class(es) | 8              |
| Packing group              | II             |
| ERG Code                   | 8L             |

### IMDG

|                            |                |
|----------------------------|----------------|
| UN number or ID number     | UN1830         |
| Proper shipping name       | Sulphuric acid |
| Transport hazard class(es) | 8              |
| Packing Group              | II             |
| EmS-No                     | F-A, S-B       |

**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

### National Inventories

*For Inventory status, "complies" means, listed on the inventory, exempted or otherwise complies.*

|         |          |
|---------|----------|
| TSCA    | Complies |
| DSL/NDL | Complies |

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

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

### International Inventories

|               |          |
|---------------|----------|
| EINECS/ELINCS | Complies |
| ENCS          | Complies |
| IECSC         | Complies |
| KECI          | Complies |
| PICCS         | Complies |

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|              |          |
|--------------|----------|
| <b>TCSI</b>  | Complies |
| <b>AICS</b>  | Complies |
| <b>NZIoC</b> | Complies |

**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**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical name  | SARA 313 - Threshold Values % |
|--|-------------------------------|
| Sulfuric acid (CAS #: 7664-93-9)                                   | 1.0                           |
| Sulfuric acid, disilver(1+) salt (CAS #: 10294-26-5)               | 1.0                           |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (CAS #: 7738-94-5) | 0.1                           |

**SARA 311/312 Hazard Categories**

|  |     |
|--|-----|
| <b>Acute health hazard</b>               | Yes |
| <b>Chronic Health Hazard</b>             | Yes |
| <b>Fire hazard</b>                       | No  |
| <b>Sudden release of pressure hazard</b> | No  |
| <b>Reactive Hazard</b>                   | No  |

**CWA (Clean Water Act)**

| Chemical name  | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|--|-----------------------------|------------------------|---------------------------|----------------------------|
| Sulfuric acid<br>7664-93-9                                   | 1000 lb                     | -                      | -                         | X                          |
| Sulfuric acid, mercury(II) salt<br>7783-35-9                 | 10 lb                       | X                      | -                         | X                          |
| Sulfuric acid, disilver(1+) salt<br>10294-26-5               | -                           | X                      | -                         | -                          |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )<br>7738-94-5 | 10 lb                       | X                      | -                         | -                          |

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical name                                   | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ)                  |
|---|--------------------------|----------------|---|
| Sulfuric acid<br>7664-93-9                      | 1000 lb                  | 1000 lb        | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |
| Sulfuric acid, mercury(II) salt<br>7783-35-9    | 10 lb                    | -              | RQ 10 lb final RQ<br>RQ 4.54 kg final RQ  |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) | 10 lb                    | -              | RQ 10 lb final RQ                         |

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|           |  |  |                     |
|-----------|--|--|---------------------|
| 7738-94-5 |  |  | RQ 4.54 kg final RQ |
|-----------|--|--|---------------------|

**U.S. - DEA (Drug Enforcement Administration) List I & List II**

| Chemical name                                  | U.S. - DEA (Drug Enforcement Administration) - List I or Precursor Chemicals | U.S. - DEA (Drug Enforcement Administration) - List II or Essential Chemicals  |
|--|--|--|
| Sulfuric acid<br>(80 - 90%)<br>CAS#: 7664-93-9 | Not Listed   | 50 gallon Export Volume (exports, transshipments and international transactions to designated countries given in 1310.08(b)) |

| Chemical name  | TSCA 12(b) |
|--|------------|
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )<br>( $<1\%$ )<br>CAS#: 7738-94-5 | Section 6  |

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

| Chemical name  | California Proposition 65   |
|--|---|
| Sulfuric acid (CAS #: 7664-93-9)                                   | Carcinogen  |
| Sulfuric acid, mercury(II) salt (CAS #: 7783-35-9)                 | Developmental   |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ) (CAS #: 7738-94-5) | Carcinogen<br>Developmental<br>Female Reproductive<br>Male Reproductive |



**WARNING:** This product can expose you to chemicals including Sulfuric acid, Chromic acid (H<sub>2</sub>CrO<sub>4</sub>), Sulfuric acid, mercury(2+) salt (1:1), which are known to the State of California to cause cancer or birth defects or reproductive harm. For more information, go to <http://www.P65Warnings.ca.gov>

**IMERC:** Contains Mercury Dispose of in accordance with local, state and federal regulations or laws.

**U.S. State Right-to-Know Regulations**

This product may contain substances regulated by state right-to-know regulations.

| Chemical name  | New Jersey | Massachusetts | Pennsylvania |
|--|------------|---------------|--------------|
| Sulfuric acid<br>7664-93-9                                   | X          | X             | X            |
| Sulfuric acid, mercury(II) salt<br>7783-35-9                 | X          | X             | X            |
| Sulfuric acid, disilver(1+) salt<br>10294-26-5               | X          | -             | X            |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )<br>7738-94-5 | X          | X             | X            |

**U.S. EPA Label Information**

| Chemical name | FIFRA    | FDA             |
|---------------|----------|-----------------|
| Sulfuric acid | 180.0910 | 21 CFR 184.1095 |



**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

**Additional information****Global Automotive Declarable Substance List (GADSL)**

| Chemical name  | Global Automotive Declarable Substance List Classifications | Global Automotive Declarable Substance List Thresholds |
|--|---|--|
| Sulfuric acid, mercury(II) salt<br>7783-35-9                 | Declarable Substance (LR)<br>Prohibited Substance (LR)      | 0.0005 %<br>0.1 %                                      |
| Chromic acid (H <sub>2</sub> CrO <sub>4</sub> )<br>7738-94-5 | Declarable Substance (LR)<br>Prohibited Substance (LR)      | 0.1 %<br>3 mg/kg                                       |

**NFPA and HMIS Classifications**

| NFPA | Health hazards - 3        | Flammability - 0 | Instability - 0      | Physical and chemical properties - |
|------|---------------------------|------------------|----------------------|------------------------------------|
| HMIS | Health hazards - 3<br>- * | Flammability - 0 | Physical hazards - 0 | Personal protection -<br>X<br>- I  |

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

|             |   |
|-------------|---|
| ACGIH       | ACGIH (American Conference of Governmental Industrial Hygienists)                           |
| ATSDR       | ATSDR (Agency for Toxic Substances and Disease Registry)                                    |
| CCRIS       | CCRIS (Chemical Carcinogenesis Research Information System)                                 |
| CDC         | CDC (Center for Disease Control)  |
| CEPA        | CEPA (Canadian Environmental Protection Agency)   |
| CICAD       | CICAD (Concise International Chemical Assessment Documents)                                 |
| ECHA        | ECHA (The European Chemicals Agency)  |
| EEA         | EEA (European Environment Agency)   |
| EPA         | Environmental Protection Agency   |
| ERMA        | ERMA (New Zealand's Environmental Risk Management Authority)                                |
| ECOSARS     | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™     |
| FDA         | FDA (Food & Drug Administration)  |
| GESTIS      | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB        | HSDB (Hazardous Substances Data Bank)   |
| INERIS      | INERIS (The National Industrial Environment and Risks Institute)                            |
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety)                                    |
| IUCLID      | IUCLID (The International Uniform Chemical Information Database)                            |
| NITE        | Japan National Institute of Technology and Evaluation (NITE)                                |
| NIH         | NIH (National Institutes of Health)   |
| NIOSH       | NIOSH (National Institute for Occupational Safety and Health)                               |
| LOLI        | LOLI (List of Lists - An International Chemical Regulatory Database)                        |
| NDF         | no data   |
| NICNAS      | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)         |
| NIOSH IDLH  | Immediately Dangerous to Life or Health   |
| OSHA        | Occupational Safety and Health Administration of the US Department of Labor                 |
| PEEN        | PEEN (Pan European Ecological Network)  |
| RTECS       | RTECS (Registry of Toxic Effects of Chemical Substances)                                    |
| SIDS        | SIDS (Screening Information Dataset) for High Volume Chemicals                              |
| SYKE        | The Finnish Environment Institute (SYKE)  |

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USDA  
USDC  
WHO

USDA (United States Department of Agriculture)  
USDC (United States Department of Commerce)  
WHO (World Health Organization)

**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                         |         |   |

**Prepared By** Hach Product Compliance Department

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**Revision Note** SDS sections updated  
2

**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.

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**End of Safety Data Sheet**