



Be Right™

SAFETY DATA SHEET

Issue Date 25-07-2018

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Version 1.2

1. IDENTIFICATION

Product identifier

Product Name COD, TNTPlus, Ultra high range (6-60 G/L)

Other means of identification

Product Code(s) TNT824

Safety data sheet number M03611

UN/ID no UN3316

HMIRA # -

Recommended use of the chemical and restrictions on use

Recommended Use Water Analysis Determination of Chemical Oxygen Demand

Uses advised against Consumer use

Details of the supplier of the safety data sheet

Initial Supplier Identifier

Hach Sales & Service LP, 3020 Gore Road, London, Ontario N5V 4T7 Canada Tel: 1-800-665-7635

Manufacturer Address

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

Emergency telephone number

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

2. HAZARD IDENTIFICATION

Classification

| | |
|---|---------------------------|
| 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 |
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |

| | |
|--------------------------|-------------|
| Germ cell mutagenicity | Category 1B |
| Carcinogenicity | Category 1B |
| Reproductive toxicity | Category 1B |
| 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
H317 - May cause an allergic skin reaction
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H340 - May cause genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child
H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements**

P270 - Do not eat, drink or smoke when using this product
P501 - Dispose of contents/ container to an approved waste disposal plant
P280 - Wear protective gloves, protective clothing, eye protection, and face protection
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P405 - Store locked up
P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
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]
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
P363 - Wash contaminated clothing before reuse

P284 - In case of inadequate ventilation wear respiratory protection
 P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor
 P272 - Contaminated work clothing should not be allowed out of the workplace
 P362 + P364 - Take off contaminated clothing and wash it before reuse
 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 packaging
 P390 - Absorb spillage to prevent material damage

Unknown Acute Toxicity

0.001 % of the mixture consists of ingredient(s) of unknown toxicity.
 0.001 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 0.001 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 0.001 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
 0.001 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 0.001 % 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 organic acids.

| Chemical name | Synonyms | CAS No | Percent Range | CBI Protection | Units | HMIRA # |
|---------------------------------------|---|------------|---------------|----------------|-------|---------|
| Sulfuric acid | Oil of vitriol | 7664-93-9 | 60 - 70% | - | g | - |
| Potassium dichromate | Potassium bichromate | 7778-50-9 | <1% | - | g | - |
| Sulfuric acid, mercury(2+) salt (1:1) | Mercuric Sulfate Mercury(II) Sulfate | 7783-35-9 | <1% | - | g | - |
| Sulfuric acid, disilver(1+) salt | Sulfuric acid, disilver salt | 10294-26-5 | <1% | - | g | - |

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. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

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. May produce an allergic reaction. |
| 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. Use personal protective equipment as required. See section 8 for more information. Avoid breathing vapors or mists. |

Most important symptoms and effects, both acute and delayed

| | |
|-----------------|---|
| Symptoms | Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives. 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

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable Extinguishing Media | Caution: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | 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 inhalation and skin contact. May cause sensitization by skin contact. |
| Hazardous combustion products | May vaporize to form Mercury vapor. Oxides of sulfur. |
| Special protective equipment for fire-fighters | 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

| | |
|-----------------------------|--|
| WHMIS Notice | 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. |
| Personal precautions | 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. |
| Other Information | Refer to protective measures listed in Sections 7 and 8. |

Environmental precautions

Environmental precautions 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

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up 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.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling 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. Provide extract ventilation to points where emissions occur. 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.

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 60 - 70% | TWA: 1 mg/m ³ STEL: 3 mg/m ³ | TWA: 0.2 mg/m ³ | TWA: 0.2 mg/m ³ | TWA: 1 mg/m ³ STEL: 3 mg/m ³ | TWA: 0.2 mg/m ³ |
| Potassium dichromate <1% | TWA: 0.05 mg/m ³ TWA: 0.5 mg/m ³ | RSP+ TWA: 0.025 mg/m ³ STEL: 0.1 mg/m ³ Ceiling: 0.1 mg/m ³ SKN* SKN+ | TWA: 0.0002 mg/m ³ STEL: 0.0005 mg/m ³ SKN* | TWA: 0.05 mg/m ³ | RSP+ TWA: 0.0002 mg/m ³ STEL: 0.0005 mg/m ³ SKN* SKN+ |
| Sulfuric acid, mercury(2+) salt (1:1) <1% | TWA: 0.025 mg/m ³ SKN* | TWA: 0.025 mg/m ³ SKN* R | TWA: 0.025 mg/m ³ SKN* | TWA: 0.025 mg/m ³ SKN* | TWA: 0.025 mg/m ³ SKN* |
| Sulfuric acid, disilver(1+) salt <1% | TWA: 0.01 mg/m ³ | TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³ | TWA: 0.01 mg/m ³ | TWA: 0.01 mg/m ³ | TWA: 0.01 mg/m ³ |

| Chemical name | Northwest Territories OEL | Nova Scotia OEL | Nunavut OEL | Ontario TWA | Prince Edward Island OEL |
|---------------------------|---|----------------------------|---|-----------------------------|--------------------------------|
| Sulfuric acid 60 - 70% | TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ | TWA: 0.2 mg/m ³ | TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ | TWA: 0.2 mg/m ³ | TWA: 0.2 mg/m ³ |
| Potassium dichromate | TWA: 0.05 mg/m ³ | RSP+ | TWA: 0.05 mg/m ³ | TWA: 0.05 mg/m ³ | STEL: 0.0005 mg/m ³ |

| | | | | | |
|---|---|---|---|--------------------------------------|-------------------------------|
| <1% | STEL: 0.15 mg/m ³ | STEL: 0.0005 mg/m ³ TWA: 0.0002 mg/m ³ SKN* SKN+ | STEL: 0.15 mg/m ³ | | TWA: 0.0002 mg/m ³ |
| Sulfuric acid, mercury(2+) salt (1:1) <1% | TWA: 0.025 mg/m ³ STEL: 0.075 mg/m ³ SKN* | TWA: 0.025 mg/m ³ SKN* | TWA: 0.025 mg/m ³ STEL: 0.075 mg/m ³ SKN* | TWA: 0.025 mg/m ³ SKN* | TWA: 0.025 mg/m ³ |
| Sulfuric acid, disilver(1+) salt <1% | TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³ | TWA: 0.01 mg/m ³ | TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³ | TWA: 0.01 mg/m ³ | TWA: 0.01 mg/m ³ |

| Chemical name | Quebec OEL | Saskatchewan OEL | Yukon OEL |
|---|---|--|---|
| Sulfuric acid 60 - 70% | TWA: 1 mg/m ³ STEL: 3 mg/m ³ | TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ | STEL: 1 mg/m ³ TWA: 1 mg/m ³ |
| Potassium dichromate <1% | TWA: 0.05 mg/m ³ SKN+ | TWA: 0.05 mg/m ³ TWA: 0.5 mg/m ³ STEL: 0.15 mg/m ³ STEL: 1.5 mg/m ³ | STEL: 0.1 mg/m ³ TWA: 0.1 mg/m ³ |
| Sulfuric acid, mercury(2+) salt (1:1) <1% | TWA: 0.025 mg/m ³ SKN* | TWA: 0.025 mg/m ³ STEL: 0.075 mg/m ³ SKN* | NDF |
| Sulfuric acid, disilver(1+) salt <1% | TWA: 0.01 mg/m ³ | TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³ | STEL: 0.03 mg/m ³ TWA: 0.01 mg/m ³ |

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|---|---|--|---|
| Sulfuric acid 60 - 70% | TWA: 0.2 mg/m ³ thoracic particulate matter | TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ | IDLH: 15 mg/m ³ TWA: 1 mg/m ³ |
| Potassium dichromate <1% | STEL: 0.0005 mg/m ³ Cr(VI) inhalable particulate matter TWA: 0.0002 mg/m ³ Cr(VI) inhalable particulate matter S* | TWA: 5 µg/m ³ (vacated) Ceiling: 0.1 mg/m ³ Ceiling: 0.1 mg/m ³ | IDLH: 15 mg/m ³ Cr(VI) TWA: 0.0002 mg/m ³ Cr |
| Sulfuric acid, mercury(2+) salt (1:1) <1% | TWA: 0.025 mg/m ³ Hg S* | (vacated) Ceiling: 0.1 mg/m ³ | IDLH: 10 mg/m ³ Hg Ceiling: 0.1 mg/m ³ Hg TWA: 0.05 mg/m ³ except Organo alkyls Hg vapor |
| Sulfuric acid, disilver(1+) salt <1% | TWA: 0.01 mg/m ³ Ag | TWA: 0.01 mg/m ³ (vacated) TWA: 0.01 mg/m ³ | IDLH: 10 mg/m ³ Ag TWA: 0.01 mg/m ³ Ag |

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. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

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

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

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--------------------------|-------------------------|
| Molecular weight | Not applicable | |
| pH | < 1 | @ 20 °C |
| Melting point / freezing point | No data available | |
| Initial boiling point and boiling range | 300 °C / 572 °F | |
| Evaporation rate | No data available | |
| Vapor pressure | No information available | |
| Relative vapor density | No data available | |
| Specific gravity - VALUE 1 | 1.55 | |
| 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 information available | |

Solubility(ies)

Water solubility

| Water solubility classification | Water solubility | Water Solubility Temperature |
|---------------------------------|------------------|------------------------------|
| Completely soluble | > 10000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| Chemical Name | Solubility classification | Solubility | Solubility Temperature |
|---------------|---------------------------|--------------|------------------------|
| None reported | Completely soluble | > 10000 mg/L | 25 °C / 77 °F |

Other information

Metal Corrosivity

Steel Corrosion Rate No data available
 Aluminum Corrosion Rate No data available

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 | - |
| Potassium dichromate | 7778-50-9 | Not applicable | - |
| Sulfuric acid, mercury(2+) salt (1:1) | 7783-35-9 | Not applicable | - |
| Sulfuric acid, disilver(1+) salt | 10294-26-5 | 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

No information available

10. STABILITY AND REACTIVITY

Reactivity

Corrosive on contact with water. Corrosive to metal.

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. Excessive heat.

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. May cause sensitization in susceptible persons. 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 | Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact. 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. May cause additional affects as listed under "Inhalation". |

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Itching. Rashes. Hives.

Acute toxicity

Harmful if swallowed
Toxic in contact with skin
Harmful if inhaled

Mixture

No data available.

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 |
|--|----------------------|---------------|---------------|-----------------------|--|
| Potassium dichromate (<1%) CAS#: 7778-50-9 | Rat LD ₅₀ | 48 mg/kg | None reported | None reported | LOLI |
| Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5 | Rat LD ₅₀ | > 5000 mg/kg | None reported | None reported | Vendor SDS |

Dermal Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|----------------------|---------------|---------------|---------------|-----------------------|--|
| Potassium dichromate | Rat | 1170 mg/kg | None reported | None reported | ERMA |

| | | | | | |
|--------------------------|------------------|--|--|--|--|
| (<1%) CAS#: 7778-50-9 | LD ₅₀ | | | | |
|--------------------------|------------------|--|--|--|--|

Inhalation (Dust/Mist) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|-------------------------|---------------|---------------|-----------------------|--|
| Potassium dichromate (<1%) CAS#: 7778-50-9 | Rat LC ₅₀ | 0.094 mg/L | 4 hours | None reported | ERMA |

Unknown Acute Toxicity

0.001 % of the mixture consists of ingredient(s) of unknown toxicity.

- 0.001 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0.001 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 0.001 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
- 0.001 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 0.001 % 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

| | |
|--------------------------------------|--------------------------|
| ATEmix (oral) | 547.00 |
| ATEmix (dermal) | 681.20 |
| ATEmix (inhalation-dust/mist) | 4.11 |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

Causes severe burns.

Product Skin Corrosion/Irritation Data

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 (60 - 70%) CAS#: 7664-93-9 | Existing human experience | Human | None reported | None reported | Corrosive to skin | HSDB |
| Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9 | Existing human experience | Human | None reported | None reported | Skin irritant | GESTIS |
| 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 |

Serious eye damage/eye 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 (60 - 70%) CAS#: 7664-93-9 | Existing human experience | Human | None reported | None reported | Corrosive to eyes | HSDB |
| Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9 | Existing human experience | Human | None reported | None reported | Eye irritant | GESTIS |
| Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5 | Standard Draize Test | Rabbit | 180 mg | None reported | Corrosive to eyes | ECHA |

Respiratory or skin sensitization

May cause sensitization by inhalation. 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%) 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 (60 - 70%) CAS#: 7664-93-9 | Human TD _{Lo} | 0.144 mg/L | 5 minutes | Lungs, Thorax, or Respiration Dyspnea | RTECS |

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%) 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 (60 - 70%) CAS#: 7664-93-9 | Human TC _{Lo} | 0.003 mg/L | 168 days | Musculoskeletal 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 |
| Potassium dichromate | 7778-50-9 | A1 | Group 1 | Known | X |
| Sulfuric acid, mercury(2+) salt (1:1) | 7783-35-9 | - | Group 3 | - | - |
| Sulfuric acid, disilver(1+) salt | 10294-26-5 | - | - | - | - |

Legend

| | |
|--|----------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Does not apply |
| NTP (National Toxicology Program) | Does not apply |
| OSHA | Does not apply |

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

Test data reported below.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|-------------------------------------|------------------|---------------|---------------|---------------------------------------|--|
| Sulfuric acid (60 - 70%) CAS#: 7664-93-9 | Cytogenetic analysis | Hamster ovary | 4 mmol/L | None reported | Positive test result for mutagenicity | No information available |
| Potassium dichromate (<1%) CAS#: 7778-50-9 | Micronucleus test | Human lymphocyte | 0.3 mg/L | None reported | Positive test result for mutagenicity | RTECS |
| Sulfuric acid, disilver(1+) salt (<1%) | Mutation in mammalian somatic cells | Human lymphocyte | .08 mg/L | 3 hours | Negative | ECHA |

| | | | | | | |
|------------------|--|--|--|--|--|--|
| CAS#: 10294-26-5 | | | | | | |
|------------------|--|--|--|--|--|--|

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.

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Reproductive 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 |
|---|---------------------------|---------------|---------------|--|--|
| Potassium dichromate (<1%) CAS#: 7778-50-9 | Mouse TD _{Lo} | 1710 mg/kg | 19 days | Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus) Effects on Fertility Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Specific Developmental Abnormalities Craniofacial (including nose and tongue) | RTECS |

Inhalation (Vapor) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------------|---------------|---------------|---|--|
| Sulfuric acid (60 - 70%) CAS#: 7664-93-9 | Rabbit TC _{Lo} | 0.02 mg/L | 7 hours | Specific Developmental Abnormalities Musculoskeletal system | RTECS |

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 Acute Toxicity

0.001 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Product Ecological Data**Aquatic Acute Toxicity**

No data available.

Aquatic Chronic Toxicity

No data available.

Ingredient Ecological Data

Aquatic Acute Toxicity

Test data reported below.

Fish

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------------|------------------|---------------|--|
| Potassium dichromate (<1%) CAS#: 7778-50-9 | 96 hours | <i>Oncorhynchus mykiss</i> | LC ₅₀ | 12.3 mg/L | ERMA |
| Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5 | 96 hours | <i>Pimephales promelas</i> | LC ₅₀ | 0.0012 mg/L | GESTIS |

Crustacea

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|---------------------------|------------------|---------------|--|
| Potassium dichromate (<1%) CAS#: 7778-50-9 | 48 Hours | <i>Daphnia magna</i> | EC ₅₀ | 0.035 mg/L | ERMA |
| Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5 | 48 Hours | <i>Ceriodaphnia dubia</i> | LC ₅₀ | 0.0045 mg/L | GESTIS |

Aquatic Chronic Toxicity

No data available.

**Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL):
Environmentally Hazardous Substances Categorizations**

| Chemical name | Category | Persistent | Bioaccumulation | Inherently Toxic to Aquatic Organisms |
|--|------------|------------|-----------------|---------------------------------------|
| Potassium dichromate (<1%) CAS#: 7778-50-9 | Inorganics | Yes | No | Yes |
| Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9 | Inorganics | Yes | No | Yes |
| Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5 | Inorganics | Yes | No | Yes |

Persistence and degradability**Product Biodegradability Data**

No data available.

Bioaccumulation

There is no data for this product.

Product Bioaccumulation Data

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 waste in accordance with environmental legislation. Dispose of in accordance with local regulations. |
| Contaminated packaging | Do not reuse empty containers. |

14. TRANSPORT INFORMATION**Transport Canada**

| | |
|--|--|
| UN/ID no | UN3316 |
| Proper shipping name | CHEMICAL KITS |
| Transport hazard class(es) | 9 |
| Description | UN3316, CHEMICAL KITS, 9, Marine pollutant |
| Emergency Response Guide Number | 171 |

TDG

| | |
|-----------------------------------|-------------------------|
| UN/ID no | UN3316 |
| Proper shipping name | CHEMICAL KIT |
| Transport hazard class(es) | 9 |
| Description | UN3316, CHEMICAL KIT, 9 |

IATA

| | |
|-----------------------------------|-------------------------|
| UN number or ID number | UN3316 |
| Proper shipping name | Chemical kit |
| Transport hazard class(es) | 9 |
| Description | UN3316, Chemical kit, 9 |

IMDG

| | |
|-------------------------------------|---|
| UN number or ID number | UN3316 |
| Proper shipping name | CHEMICAL KIT |
| Transport hazard class(es) | 9 |
| EmS-No | F-A, S-P |
| Special precautions for user | 251, 340 |
| Description | UN3316, CHEMICAL KIT, 9, Marine pollutant |

Additional information**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 - Existing substances | 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

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention

| Chemical name | Chemicals Subject to Prior Informed Consent (PIC) |
|---|---|
| Sulfuric acid, mercury(2+) salt (1:1) - 7783-35-9 | Rotterdam |

16. OTHER INFORMATION

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 - * - 2 | Flammability - 0 | Physical hazards - 0 | Personal protection - X |

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 | 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 | 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) |
| USDA | USDA (United States Department of Agriculture) |
| USDC | USDC (United States Department of Commerce) |
| WHO | 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 | | |

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Revision Note
None

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. HACH COMPANY©2022

End of Safety Data Sheet