



Be Right™

SAFETY DATA SHEET

Issue Date 25-04-2016

Revision Date
10-Aug-2021

Version 2.2

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1. IDENTIFICATION

Product identifier

Product Name COD TNTPlus™, HR

Other means of identification

Product Code(s) TNT82206

Safety data sheet number M0376

UN/ID no UN3316

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use.
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
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	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
H334 - May cause allergy or asthma symptoms or breathing difficulties 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

P270 - Do not eat, drink or smoke when using this product
P501 - Dispose of contents/ container to an approved waste disposal plant
P405 - Store locked up
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
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
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
P285 - In case of inadequate ventilation wear respiratory protection
P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
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

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Other Hazards Known
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

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(2+) salt (1:1)	7783-35-9	<1%	-
Sulfuric acid, disilver(1+) salt	10294-26-5	<1%	-
Chromium trioxide	1333-82-0	<1%	-

4. FIRST AID MEASURES

Description of first aid measures

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

Inhalation 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. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention.

Eye contact Get immediate medical advice/attention. 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.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.

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

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. 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. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives.

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. May cause sensitization by inhalation and skin contact. Product is or contains a sensitizer. May cause sensitization by skin contact.
Hazardous combustion products	Sulfur oxides. chromium oxides. Mercury.
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

U.S. Notice	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.
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Personal precautions, protective equipment and emergency procedures

Personal precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
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Other Information	Refer to protective measures listed in Sections 7 and 8.
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Environmental precautions

Environmental precautions	Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.
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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.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Handle product only in closed system or provide appropriate exhaust ventilation. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Protect from moisture. Store away from other materials. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

Flammability class

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Sulfuric acid CAS#: 7664-93-9	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
Sulfuric acid, mercury(2+) salt (1:1) CAS#: 7783-35-9	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 CAS#: 10294-26-5	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
Chromium trioxide CAS#: 1333-82-0	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

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

Impervious gloves. Wear suitable gloves.

Eye/face protection

Face protection shield.

Skin and body protection

Long sleeved clothing. Chemical resistant apron. Wear suitable protective clothing.

General Hygiene Considerations

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

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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
Appearance Turbid solution
Color light orange
Odor Odorless
Odor threshold Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	Not applicable	
pH	< 0.5	@ 20 °C
Melting point/freezing point	4 °C / 39.2 °F	
Boiling point / boiling range	~ 300 °C / 572 °F	
Evaporation rate	0.16 (water = 1)	
Vapor pressure	1.725 mm Hg / 0.23 kPa at 25 °C / 77 °F	
Relative vapor density	0.03	
Specific gravity (water = 1 / air = 1)	1.78	
Partition Coefficient (n-octanol/water)	Not applicable	
Soil Organic Carbon-Water Partition Coefficient	Not applicable	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	~ 2.499 cP (mPa s) at 20 °C / 68 °F	
Kinematic viscosity	~ 1.404 cSt (mm ² /s) at 20 °C / 68 °F	

Solubility(ies)

Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Completely soluble	> 10000 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

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Steel Corrosion Rate
Aluminum Corrosion Rate

4.88 mm/yr / 0.19 in/yr
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	-
Chromium trioxide	1333-82-0	Not applicable	-

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 data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable. 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.

Incompatible materials

Acids. Bases. Oxidizing agent.

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.
- 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. May cause additional affects as listed under "Inhalation".

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

Acute toxicity

Harmful if swallowed
 Toxic in contact with skin

Product Acute Toxicity Data

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
Sulfuric acid, mercury(2+) salt (1:1) (<1%) CAS#: 7783-35-9	None reported	None reported	None reported	None reported	No information available
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	Rat LD ₅₀	> 5000 mg/kg	None reported	None reported	Vendor SDS
Chromium trioxide (<1%) CAS#: 1333-82-0	Rat LD ₅₀	52 mg/kg	None reported	None reported	ERMA (New Zealand's Environmental Risk Management Authority)

Dermal Exposure Route

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	None reported	None reported	None reported	None reported	No information available
Chromium trioxide (<1%) CAS#: 1333-82-0	Rat LD ₅₀	55 mg/kg	None reported	None reported	ERMA (New Zealand Environmental Risk Management Authority)

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(2+) salt (1:1) (<1%) CAS#: 7783-35-9	None reported	None reported	None reported	None reported	No information available
Chromium trioxide (<1%) CAS#: 1333-82-0	Rat LC ₅₀	0.217 mg/L	4 hours	None reported	ERMA (New Zealand Environmental Risk Management Authority)

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	None reported	None reported	None reported	None reported	No information available

Unknown Acute Toxicity

0.001% 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)	614.30 mg/kg
ATEmix (dermal)	614.40 mg/kg
ATEmix (inhalation-dust/mist)	5.827 mg/l
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 (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)	Existing human experience	Human	None reported	None reported	Skin irritant	GESTIS (Information System on Hazardous

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(<1%) CAS#: 7783-35-9						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)
Chromium trioxide (<1%) CAS#: 1333-82-0	United States Department of Transportation (DOT) Skin Corrosion Test	Rabbit	500 mg	30 minutes	Corrosive to skin	ECHA (The European Chemicals Agency)

Serious eye damage/irritation

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

Product Serious Eye Damage/Eye Irritation Data

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%) 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)
Chromium trioxide (<1%) CAS#: 1333-82-0	Standard Draize Test	Rabbit	50 mg	7 days	Corrosive to eyes	ECHA (The European Chemicals Agency)

Respiratory or skin sensitization

May cause sensitization by inhalation. May cause sensitization by skin contact.

Product Sensitization Data

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 (The European Chemicals Agency)

STOT - single exposure

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

Product Specific Target Organ Toxicity Single Exposure Data

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%) CAS#: 7664-93-9	Human TD _{Lo}	0.144 mg/L	5 minutes	Lungs, Thorax, or Respiration Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)

STOT - repeated exposure

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

Product Specific Target Organ Toxicity Repeat Dose Data

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 (The European Chemicals Agency)

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%) CAS#: 7664-93-9	Human TC _{Lo}	0.003 mg/L	168 days	Musculoskeletal Changes in teeth and supporting structures	RTECS (Registry of Toxic Effects of Chemical Substances)

Carcinogenicity

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

Product Carcinogenicity Data

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(2+) salt (1:1)	7783-35-9	-	Group 3	-	-
Sulfuric acid, disilver(1+) salt	10294-26-5	-	-	-	-
Chromium trioxide	1333-82-0	A1	Group 1	Known	X

Legend

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ACGIH (American Conference of Governmental Industrial Hygienists)	A2 - Suspected Human Carcinogen A1 - Known 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

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.

Product Germ Cell Mutagenicity invitro Data

No data available.

Ingredient Germ Cell Mutagenicity 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 (80 - 90%) 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%) CAS#: 10294-26-5	Mutation in mammalian somatic cells	Human lymphocyte	.08 mg/L	3 hours	Negative test result for mutagenicity	ECHA (The European Chemicals Agency)
Chromium trioxide (<1%) CAS#: 1333-82-0	Morphological transformation	Human fibroblast	100 nmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Germ Cell Mutagenicity invivo Data

No data available.

Ingredient Germ Cell Mutagenicity invivo 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 Reproductive Toxicity Data

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%) CAS#: 7664-93-9	Rabbit TC _{Lo}	0.02 mg/L	7 hours	Specific Developmental Abnormalities Musculoskeletal system	RTECS (Registry of Toxic Effects of Chemical Substances)

Aspiration hazard

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

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a marine pollutant according to DOT.

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Unknown aquatic 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
Sulfuric acid, disilver(1+) salt (<1%) CAS#: 10294-26-5	96 hours	<i>Pimephales promelas</i>	LC ₅₀	0.0012 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Chromium trioxide (<1%) CAS#: 1333-82-0	96 hours	<i>Tilapia mossambica</i>	LC ₅₀	21.05 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Crustacea

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>Ceriodaphnia dubia</i>	LC ₅₀	0.0045 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Chromium trioxide (<1%) CAS#: 1333-82-0	48 Hours	<i>Daphnia magna</i>	EC ₅₀	0.162 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Product Biodegradability Data

No data available.

Product Bioaccumulation Data

No data available.

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Partition Coefficient (n-octanol/water) Not applicable

Mobility

Soil Organic Carbon-Water Partition Coefficient Not applicable

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 D002, D009

14. TRANSPORT INFORMATION

DOT

UN/ID no UN3316
Proper shipping name CHEMICAL KITS
Transport hazard class(es) 9
Marine pollutant This product contains a chemical which is listed as a marine pollutant according to DOT.
Description UN3316, CHEMICAL KITS, 9, Marine pollutant (Sulfuric acid, disilver(1+) salt, Sulfuric acid, mercury(2+) salt (1:1))
Emergency Response Guide Number 171

TDG

UN/ID no UN3316
Proper shipping name CHEMICAL KIT
Transport hazard class(es) 9
Marine pollutant This product contains a chemical which is listed as a severe marine pollutant according to TDG.
Description UN3316, CHEMICAL KIT, 9

IATA

UN number or ID number UN3316
Proper shipping name Chemical kit
Transport hazard class(es) 9
ERG Code 9L
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
Marine pollutant This material meets the definition of a marine pollutant
Description UN3316, CHEMICAL KIT (Sulfuric acid, disilver(1+) salt), 9, Marine pollutant

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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.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL - Existing substances Complies
PICCS Complies
TCSI Complies
AICS Complies
NZIoC 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, mercury(2+) salt (1:1) (CAS #: 7783-35-9)	1.0
Sulfuric acid, disilver(1+) salt (CAS #: 10294-26-5)	1.0
Chromium trioxide (CAS #: 1333-82-0)	0.1

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable	CWA - Toxic Pollutants	CWA - Priority	CWA - Hazardous
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	Quantities		Pollutants	Substances
Sulfuric acid 7664-93-9	1000 lb	-	-	X
Sulfuric acid, mercury(2+) salt (1:1) 7783-35-9	10 lb	X	-	X
Sulfuric acid, disilver(1+) salt 10294-26-5	-	X	-	-
Chromium trioxide 1333-82-0	-	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 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Sulfuric acid, mercury(2+) salt (1:1) 7783-35-9	10 lb	-	RQ 10 lb final RQ 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 (80 - 90%) CAS#: 7664-93-9	Not Listed	50 gallon Export Volume (exports, transshipments and international transactions to designated countries given in 1310.08(b))

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(2+) salt (1:1) (CAS #: 7783-35-9)	Developmental
Chromium trioxide (CAS #: 1333-82-0)	Carcinogen Developmental Female Reproductive Male Reproductive



WARNING: This product can expose you to chemicals including Chromium trioxide, Sulfuric acid, 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	X	X	X

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7664-93-9			
Sulfuric acid, mercury(2+) salt (1:1) 7783-35-9	X	X	X
Sulfuric acid, disilver(1+) salt 10294-26-5	X	-	X
Chromium trioxide 1333-82-0	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 Thersholds
Sulfuric acid, mercury(2+) salt (1:1) 7783-35-9	Declarable Substance (LR) Prohibited Substance (LR)	0 % 0.1 %
Chromium trioxide 1333-82-0	Declarable Substance (LR) Prohibited Substance (LR)	0 % 0.1 %

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 - I

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

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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

Issue Date 25-04-2016

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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.

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End of Safety Data Sheet