



Be Right™

# SAFETY DATA SHEET

Issue Date 10-Aug-2021

Revision Date 26-Jan-2024

Version 3.5

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## 1. IDENTIFICATION

### Product identifier

**Product Name** TanniVer™ 3 Tannin-Lignin Reagent

### Other means of identification

**Product Code(s)** 256049

**Safety data sheet number** M00460

**UN/ID no** UN3264

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

**Recommended Use** Laboratory reagent. Determination of Tannin/Lignin.

**Uses advised against** None.

**Restrictions on use** None.

### 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
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

### **Hazards not otherwise classified (HNOC)**

Not applicable

### **Label elements**

#### **Signal word**

Danger



#### Hazard statements

H290 - May be corrosive to metals  
H314 - Causes severe skin burns and eye damage

#### Precautionary statements

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  
P363 - Wash contaminated clothing before reuse  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P405 - Store locked up  
P501 - Dispose of contents/ container to an approved waste disposal plant  
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  
P234 - Keep only in original container  
P390 - Absorb spillage to prevent material damage

#### Other Hazards Known

May be harmful if swallowed

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Not applicable

#### Mixture

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
Lithium sulfate	10377-48-7	10 - 13%	-
Tungstate (WO42-), disodium, dihydrate, (T-4)-	10213-10-2	<10%	-
Phosphoric acid	7664-38-2	1 - 5%	-
Sodium molybdate	7631-95-0	1 - 5%	-
Hydrochloric acid	7647-01-0	1 - 5%	-
Bromine	7726-95-6	<0.1%	-

### 4. FIRST AID MEASURES

#### Description of first aid measures

##### General advice

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

##### Inhalation

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

should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.

<b>Eye contact</b>	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.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
<b>Ingestion</b>	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.
<b>Self-protection of the first aider</b>	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.

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

**Symptoms** Burning sensation.

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

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

### **5. FIRE-FIGHTING MEASURES**

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

### **6. ACCIDENTAL RELEASE MEASURES**

**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.

#### **Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**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.

**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 in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. 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. Take off contaminated clothing and wash before reuse.

**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.

**Flammability class** Not applicable

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Tungstate (WO4 <sup>2-</sup> ), disodium, dihydrate, (T-4)- CAS#: 10213-10-2	TWA: 3 mg/m <sup>3</sup> W respirable particulate matter in the absence of Cobalt	(vacated) TWA: 1 mg/m <sup>3</sup> (vacated) STEL: 3 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> W STEL: 3 mg/m <sup>3</sup> W
Phosphoric acid CAS#: 7664-38-2	STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup> (vacated) STEL: 3 mg/m <sup>3</sup>	IDLH: 1000 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>
Sodium molybdate CAS#: 7631-95-0	TWA: 0.5 mg/m <sup>3</sup> Mo respirable particulate matter	TWA: 5 mg/m <sup>3</sup> (vacated) TWA: 5 mg/m <sup>3</sup>	IDLH: 1000 mg/m <sup>3</sup> Mo
Hydrochloric acid CAS#: 7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m <sup>3</sup> Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>
Bromine CAS#: 7726-95-6	STEL: 0.2 ppm TWA: 0.1 ppm	TWA: 0.1 ppm TWA: 0.7 mg/m <sup>3</sup>	IDLH: 3 ppm TWA: 0.1 ppm

		(vacated) TWA: 0.1 ppm (vacated) TWA: 0.7 mg/m <sup>3</sup> (vacated) STEL: 0.3 ppm (vacated) STEL: 2 mg/m <sup>3</sup>	TWA: 0.7 mg/m <sup>3</sup> STEL: 0.3 ppm STEL: 2 mg/m <sup>3</sup>
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**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. Barrier creams may help to protect the exposed areas of skin. 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. Wash contaminated clothing before reuse.

**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. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

**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** aqueous solution  
**Color** yellow  
**Odor** Odorless  
**Odor threshold** No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	1.0	@ 20 °C
<b>Melting point / freezing point</b>	~ -8 °C / 17.6 °F	
<b>Initial boiling point and boiling range</b>	~ 100 °C / 212 °F	
<b>Evaporation rate</b>	0.59 (water = 1)	
<b>Vapor pressure</b>	22.577 mm Hg / 3.01 kPa at 25 °C / 77 °F	
<b>Relative vapor density</b>	0.63	
<b>Specific gravity - VALUE 1</b>	1.172	

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Partition coefficient Not applicable  
Soil Organic Carbon-Water Partition Coefficient Not applicable  
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
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

#### Other information

##### Metal Corrosivity

Classified as corrosive to metal according to GHS criteria

##### Steel Corrosion Rate

15.49 mm/yr / 0.61 in/yr

##### Aluminum Corrosion Rate

No data available

##### Volatile Organic Compounds (VOC) Content

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Lithium sulfate	10377-48-7	No data available	-
Tungstate (WO42-), disodium, dihydrate, (T-4)-	10213-10-2	No data available	-
Phosphoric acid	7664-38-2	Not applicable	-
Sodium molybdate	7631-95-0	No data available	-
Hydrochloric acid	7647-01-0	Not applicable	-
Bromine	7726-95-6	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.

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**Bulk density**

No data available

## 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

None under normal processing.

### Conditions to avoid

Exposure to air or moisture over prolonged periods.

### Incompatible materials

Oxidizing agent. Acids. Bases.

### Hazardous decomposition products

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

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

##### **Inhalation**

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

##### **Eye contact**

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

##### **Skin contact**

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.

### Acute toxicity

Based on available data, the classification criteria are not met

#### Mixture

No data available.

**Ingredient Acute Toxicity Data**

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Lithium sulfate (10 - 13%) CAS#: 10377-48-7	Rat LD <sub>50</sub>	613 mg/kg	None reported	None reported	Vendor SDS
Tungstate (WO4 <sup>2-</sup> ), disodium, dihydrate, (T-4)- (<10%) CAS#: 10213-10-2	Rat LD <sub>50</sub>	1190 mg/kg	None reported	None reported	GESTIS
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Rat LD <sub>50</sub>	4000 mg/kg	None reported	None reported	RTECS
Bromine (<0.1%) CAS#: 7726-95-6	Rat LD <sub>50</sub>	2600 mg/kg	None reported	None reported	LOLI
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Rat LD <sub>50</sub>	> 2000 mg/kg	None reported	None reported	Vendor SDS
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Bromine (<0.1%) CAS#: 7726-95-6	Rat LC <sub>50</sub>	2.7 mg/L	4 hours	None reported	HSDB

**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

<b>ATE<sub>mix</sub> (oral)</b>	3,498.00 mg/kg
<b>ATE<sub>mix</sub> (dermal)</b>	No information available
<b>ATE<sub>mix</sub> (inhalation-dust/mist)</b>	No information available
<b>ATE<sub>mix</sub> (inhalation-vapor)</b>	No information available
<b>ATE<sub>mix</sub> (inhalation-gas)</b>	No information available

**Skin corrosion/irritation**

Causes severe burns.

**Mixture**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid (1 - 5%) CAS#: 7664-38-2	Standard Draize Test	Rabbit	800 mg	None reported	Corrosive to skin	ECHA



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Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Existing human experience	Human	None reported	None reported	Corrosive to skin	RTECS

**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**

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid (1 - 5%) CAS#: 7664-38-2	Standard Draize Test	Rabbit	199 mg	None reported	Corrosive to eyes	RTECS
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Patch test	None reported	200 mg	None reported	Not corrosive or irritating to eyes	ECHA
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Existing human experience	Human	None reported	None reported	Corrosive to eyes	RTECS

**Respiratory or skin sensitization**

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

**Mixture**

No data available.

**Ingredient Sensitization Data**

No data available.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	Vendor SDS

**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**

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Man LD <sub>Lo</sub>	2.857 mg/kg	None reported	<b>Vascular</b> BP lowering not characterized in autonomic section <b>Lungs, Thorax, or Respiration</b> Respiratory depression <b>Gastrointestinal</b> Other changes	RTECS
Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and

	type	dose	time		sources for data
Bromine (<0.1%) CAS#: 7726-95-6	Rat TC <sub>Lo</sub>	0.010 mg/L	4 hours	Olfaction	RTECS
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Human TC <sub>Lo</sub>	0.05 mg/L	None reported	Lungs, Thorax, or Respiration Cough	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**

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Bromine (<0.1%) CAS#: 7726-95-6	Rat TC <sub>Lo</sub>	3094 mg/kg	90 days	<b>Blood</b> Hyperglycemia and blood changes	RTECS
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Rat TC <sub>Lo</sub>	0.000685 mg/L	84 days	<b>Behavioral</b> Muscle contraction or spasticity <b>Biochemical</b> Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) <b>Kidney, Ureter, or Bladder</b> Other changes in urine composition	RTECS
Bromine (<0.1%) CAS#: 7726-95-6	Rat TC <sub>Lo</sub>	0.0014 mg/L	119 days	<b>Endocrine</b> Changes in thyroid weight <b>Lungs, Thorax, or Respiration</b> Respiratory depression	RTECS

**Carcinogenicity**

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

**Mixture**

No data available.

**Ingredient Carcinogenicity Data**

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Lithium sulfate	10377-48-7	-	-	-	-
Tungstate (WO42-), disodium, dihydrate, (T-4)-	10213-10-2	-	-	-	-
Phosphoric acid	7664-38-2	-	-	-	-
Sodium molybdate	7631-95-0	A3	-	-	-
Hydrochloric acid	7647-01-0	-	Group 3	-	X
Bromine	7726-95-6	-	-	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	A3 - Animal Carcinogen
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<b>IARC (International Agency for Research on Cancer)</b>	Group 3 - Not classifiable as a human carcinogen
<b>NTP (National Toxicology Program)</b>	Does not apply
<b>OSHA</b>	X - Present

**Germ cell mutagenicity**

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

**Mixture invitro Data**

No data available.

**Substance invitro Data**

No data available.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Tungstate (WO42-), disodium, dihydrate, (T-4)- (<10%) CAS#: 10213-10-2	Cytogenetic analysis	Human lymphocyte	10 mg/L	None reported	Positive test result for mutagenicity	RTECS
Phosphoric acid (1 - 5%) CAS#: 7664-38-2	Mutation in microorganisms	<i>Salmonella typhimurium</i>	5 mg/plate	3 days	Negative	ECHA
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Phage inhibition capacity	Escherichia coli	16 mmol/L	None reported	Positive test result for mutagenicity	RTECS
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Cytogenetic analysis	Hamster lung	30 mmol/L	None reported	Positive test result for mutagenicity	RTECS

**Mixture invivo Data**

No data available.

**Substance invivo Data**

No data available.

**Reproductive toxicity**

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

**Mixture**

No data available.

**Ingredient Reproductive Toxicity Data**

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Phosphoric acid (1 - 5%) CAS#: 7664-38-2	Rat NOAEL	>= 500 mg/kg	6 weeks	No reproductive or developmental toxic effects observed	ECHA
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Rat TC <sub>Lo</sub>	0.450 mg/L	1 hours	<b>Effects on Embryo or Fetus</b> Fetotoxicity (except death e.g. stunted fetus) <b>Specific Developmental Abnormalities</b> Homeostasis	RTECS

**Aspiration hazard**

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

## 12. ECOLOGICAL INFORMATION

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

**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**  
No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	96 hours	<i>Oncorhynchus mykiss</i>	LC <sub>50</sub>	800 mg/L	GESTIS
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Bromine (<0.1%) CAS#: 7726-95-6	48 Hours	<i>Daphnia magna</i>	LC <sub>50</sub>	1 mg/L	Vendor SDS

**Aquatic Chronic Toxicity**  
No data available.

### Persistence and degradability

**Mixture**  
No data available.

**Mixture**  
No data available.

**Partition coefficient** 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

**Special instructions for disposal** Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

## 14. TRANSPORT INFORMATION

### DOT

UN/ID no UN3264  
Proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S.  
DOT Technical Name (Hydrochloric Acid/Phosphoric Acid Solution)  
Transport hazard class(es) 8  
Packing Group II  
Emergency Response Guide Number 154

### TDG

UN/ID no UN3264  
Proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S.  
TDG Technical Name (Hydrochloric Acid/Phosphoric Acid Solution)  
Transport hazard class(es) 8  
Packing Group II

### IATA

UN number or ID number UN3264  
Proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S.  
IATA Technical Name (Hydrochloric Acid/Phosphoric Acid Solution)  
Transport hazard class(es) 8  
Packing group II  
ERG Code 154

### IMDG

UN number or ID number UN3264  
Proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S.  
IMDG Technical Name (Hydrochloric Acid/Phosphoric Acid Solution)  
Transport hazard class(es) 8  
Packing Group II

### **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

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 Complies

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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 %
Hydrochloric acid (CAS #: 7647-01-0)	1.0
Bromine (CAS #: 7726-95-6)	1.0

**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 Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid 7664-38-2	5000 lb	-	-	X
Hydrochloric acid 7647-01-0	5000 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)
Phosphoric acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Hydrochloric acid 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ
Bromine 7726-95-6	-	500 lb	-

**U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues**

Chemical name	U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues
Hydrochloric acid	Release - Toxic (concentration >=37%); Release - Toxic

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(1 - 5%) CAS#: 7647-01-0	(anhydrous); Theft - Weapons of Mass Effect (anhydrous)
Bromine (<0.1%) CAS#: 7726-95-6	Release - Toxic

**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
Hydrochloric acid (1 - 5%) CAS#: 7647-01-0	Not Listed	0.0 kg Domestic Sales Weight (listed under anhydrous Hydrogen chloride); 50 gallon Export Volume (exports, transshipments and international transactions to designated countries given in 1310.08(b)); 27 kg Export Weight (exports, transshipments and international transactions to designated countries given in 1310.08(b), listed under anhydrous Hydrogen chloride)

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**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
Phosphoric acid 7664-38-2	X	X	X
Hydrochloric acid 7647-01-0	X	X	X
Bromine 7726-95-6	X	X	X

**U.S. EPA Label Information**

Chemical name	FIFRA	FDA
Phosphoric acid	180.0910	21 CFR 182.1073
Sodium molybdate	180.0920	-
Hydrochloric acid	180.0910	21 CFR 182.1057
Bromine	180.0519	-

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

**Special Comments**

None

**Additional information**

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

Not applicable

**NFPA and HMIS Classifications**

<b>NFPA</b>	<b>Health hazards - 3</b>	<b>Flammability - 0</b>	<b>Instability - 0</b>	<b>Physical and chemical properties -</b>
<b>HMIS</b>	<b>Health hazards - 3</b>	<b>Flammability - 0</b>	<b>Physical hazards - 0</b>	<b>Personal protection -</b> X - 1

**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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**Prepared By** Hach Product Compliance Department

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**Revision Date** 26-Jan-2024

**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**