

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

<u>Product</u>	<u>MSDS</u>	<u>Distributor</u>	<u>Format</u>	<u>Language</u>	<u>Quantity</u>
256032	N/A	Hach Company	ROWGHS	English	1

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Total Enclosures: 1

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

MSDS No: M00460

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** TanniVer™ 3 Tannin-Lignin Reagent  
**Catalog Number:** 256032

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

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00460  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Intended Use:** Laboratory Reagent Determination of Tannin/Lignin

## 2. HAZARDS IDENTIFICATION

### GHS Classification:

**Hazard categories:** Corrosive to Metals: Met. Corr. 1 Acute Toxicity: Acute Tox. 4-Orl Skin Corrosion/Irritation: Skin Corr. 1B Reproductive Toxicity: Repr. 2 Reproductive Toxicity: Lact. Specific Target Organ Toxicity - Single Exposure: STOT SE 2

**GHS Label Elements:**  
DANGER



**Hazard statements:** May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause harm to breast-fed children. May cause damage to liver by inhalation.

**Precautionary statements:** Obtain special instructions before use. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product. Handle environmental release according to local, state, federal, provincial requirements. Wear eye protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Dispose of contents/container according to state, local, federal or national regulations.

### HMIS:

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

### NFPA:

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Class E - Corrosive material Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects)

**WHMIS Symbols:** Corrosive Other Toxic Effects

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:**

**Lithium Sulfate**

**CAS Number:** 10377-48-7

**Chemical Formula:**  $\text{Li}_2\text{SO}_4 \cdot \text{H}_2\text{O}$

**GHS Classification:**

**Percent Range:** 10.0 - 20.0

**Percent Range Units:** weight / volume

**PEL:** Not established

**TLV:** Not established

**WHMIS Symbols:** Not applicable

**Sodium Tungstate VI**

**CAS Number:** 13472-45-2

**Chemical Formula:**  $\text{Na}_2\text{WO}_4 \cdot \text{H}_2\text{O}$

**GHS Classification:** Acute Tox. 4 oral, H302

**Percent Range:** 5.0 - 15.0

**Percent Range Units:** weight / volume

**PEL:**  $1 \text{ mg/m}^3$  (W)

**TLV:**  $1 \text{ mg/m}^3$  (W)

**WHMIS Symbols:** Not applicable

**Hydrochloric Acid**

**CAS Number:** 7647-01-0

**Chemical Formula:** HCl

**GHS Classification:** Met. Corr. 1, H290; Skin Corr. 1B, H314; STOT SE 3, H335

**Percent Range:** 1.0 - 10.0

**Percent Range Units:** weight / weight

**PEL:** 5 ppm ceiling

**TLV:** 5 ppm ceiling

**WHMIS Symbols:** Corrosive

**Phosphoric Acid**

**CAS Number:** 7664-38-2

**Chemical Formula:**  $\text{H}_3\text{PO}_4$

**GHS Classification:** Met. Corr. 1, H290; Acute Tox. 4 -Orl, H302; Acute Tox. 5 -Derm, H313; Skin Corr. 1B, H314; Eye Dam. 1, H318

**Percent Range:** 1.0 - 10.0

**Percent Range Units:** volume / volume

**PEL:**  $1 \text{ mg/m}^3$

**TLV:**  $1 \text{ mg/m}^3$

**WHMIS Symbols:** Corrosive

**Sodium Molybdate**

**CAS Number:** 7631-95-0

**Chemical Formula:**  $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$

**GHS Classification:** Acute Tox. Inh. 4, H332; Acute Tox. Or. 4, H302; Eye Irrit. 2, H319

**Percent Range:** 1.0 - 5.0

**Percent Range Units:** weight / volume

**PEL:**  $5 \text{ mg/m}^3$  (as Mo)

*TLV:* 5 mg/m<sup>3</sup> (as Mo)

*WHMIS Symbols:* Acute PoisonOther Toxic Effects

#### **Bromine**

*CAS Number:* 7726-95-6

*Chemical Formula:* Br<sub>2</sub>

*GHS Classification:* Met. Corr. 1, H290; Acute Tox. 5 -Orl, H303; Skin Corr. 1A, H314; Acute Tox. 2 - Inh, H330; Aquatic Acute 1, H400

*Percent Range:* < 0.1

*Percent Range Units:* weight / volume

*PEL:* 0.1 ppm (0.7 mg/m<sup>3</sup>)

*TLV:* 0.1 ppm (0.7 mg/m<sup>3</sup>)

*WHMIS Symbols:* Acute PoisonCorrosiveOxidizing

*Hazardous Components according to GHS:* No

#### **Demineralized Water**

*CAS Number:* 7732-18-5

*Chemical Formula:* H<sub>2</sub>O

*GHS Classification:* Not hazardous

*Percent Range:* 60.0 - 70.0

*Percent Range Units:* volume / volume

*PEL:* Not established

*TLV:* Not established

*WHMIS Symbols:* Not applicable

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## **4. FIRST AID MEASURES**

*General Information:* In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

*Advice to doctor:* Treat symptomatically.

*Eye Contact:* Immediately flush eyes with water for 15 minutes. Call physician.

*Skin Contact (First Aid):* Wash skin with plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

*Inhalation:* Remove to fresh air.

*Ingestion (First Aid):* Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.

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## **5. FIRE FIGHTING MEASURES**

*Flammable Properties:* Does not burn, but may melt in a fire, releasing toxic fumes.

*Fire Fighting Instruction:* As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

*Extinguishing Media:* Use media appropriate to surrounding fire conditions

*Extinguishing Media NOT To Be Used:* Not applicable

*Fire / Explosion Hazards:* None reported

*Hazardous Combustion Products:* This material will not burn.

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## **6. ACCIDENTAL RELEASE MEASURES**

*Spill Response 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.

*Containment Technique:* Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment.

*Clean-up Technique:* Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or

sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled.

**DOT Emergency Response Guide Number:** 154

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## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Protect from: heat Keep away from: metals wood

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Protect from: heat Keep away from: metals wood

**TLV:** Not established

**PEL:** Not established

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, yellow liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** None

**Odor Threshold:** Odorless

**pH:** 1.0

**Metal Corrosivity:**

**Corrosivity Classification:** Classified as corrosive to metals.

**Steel:** 0.610 in/yr

**Aluminum:** Not determined

**Specific Gravity/ Relative Density (water = 1; air = 1):** 1.172

**Viscosity:** Not determined

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Partition Coefficient (n-octanol / water):** Not applicable

**Coefficient of Water / Oil:** Not applicable

**Melting Point:** Not determined

**Decomposition Temperature:** Not determined

**Boiling Point:** ~100° C (~212° F)

**Vapor Pressure:** Not determined

**Vapor Density (air = 1):** Not determined

**Evaporation Rate (water = 1):** 0.59

**Volatile Organic Compounds Content:** Not applicable

**Flammable Properties:** Does not burn, but may melt in a fire, releasing toxic fumes.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Explosive Properties:**

Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

Not determined

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## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Mechanical Impact:** None reported

**Static Discharge:** None reported.

**Reactivity / Incompatibility:** Incompatible with: strong bases metals wood

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: chlorides sulfur oxides

**Conditions to Avoid:** Excess moisture Extreme temperatures

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available for mixture.

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data

ATE Oral Rat LD50 = 1709 mg/kg

ATE Inhalation Rat LC50 = 419.1 mg/m<sup>3</sup>

**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Target Organs Central nervous system

**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.

**Skin Corrosion/Irritation:** Corrosive to skin.

**Eye Damage:** Corrosive to eyes.

**Sensitization:** Based on classification principles, the classification criteria are not met.

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** Contains a reproductive toxin.

Contains Lithium Sulfate

IARC Group 3: Non-classifiable

Hydrochloric acid

This product does NOT contain any NTP listed chemicals.

This product does NOT contain any OSHA listed carcinogens.

**Symptoms/Effects:**

**Ingestion:** May cause: irritation of the mouth and esophagus drowsiness weakness blurred vision anemia gastrointestinal disturbances nausea diarrhea central nervous system effects respiratory arrest circulatory collapse coma

**Inhalation:** May cause: irritation of nose and throat difficult breathing drowsiness blurred vision central nervous system effects respiratory arrest circulatory disturbances coma

**Skin Absorption:** None Reported

**Chronic Effects:** Lithium compounds have been implicated in development of aplastic anemia. Signs of lithium poisoning include dehydration, extreme weight loss, fine tremor of hands, nausea, vomiting and diarrhea, Chronic overexposure may cause central nervous system effects enzyme activity effects pulmonary fibrosis

**Medical Conditions Aggravated:** Pre-existing: Eye conditions Skin conditions Respiratory conditions Impaired pulmonary function such as obstructive airway diseases.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. Mobility in soil: No data available

**Ingredient Ecological Information:** HCl: 96 hr Gambusia affinis LC50 = 282 mg/L; 48 hr Crustaceans LC50 = 240 mg/L;

Bromine: Daphnia Magna 48h LD50 = 1 mg/L

CEPA Statement: Sodium Tungstate, Phosphoric Acid, Hydrochloric Acid, Sodium Molybdate, Lithium Sulfate, Bromine: Persistent, Not bioaccumulative or inherently toxic to aquatic organisms.

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D002

**Special Instructions (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.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(Hydrochloric Acid/Phosphoric Acid Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN3264

**Packing Group:** II

### **T.D.G.:**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(Hydrochloric Acid/Phosphoric Acid Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**UN Number/PIN:** 3264

**Packing Group:** II

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(Hydrochloric Acid/Phosphoric Acid Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN3264

**Packing Group:** II

### **I.M.O.:**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(Hydrochloric Acid/Phosphoric Acid Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN3264

**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 set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

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## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Phosphoric Acid

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Hydrochloric Acid Phosphoric acid (each) = 5000 lbs.

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Hydrochloric Acid - RQ 5000 lbs. Phosphoric acid - RQ 5000 lbs.

**RCRA:** Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**CAS Number:** Not applicable

**Canadian Inventory Status:** All ingredients of this product are DSL Listed.

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS.

**Australian Inventory (AICS) Status:** All ingredients are listed.

**New Zealand Inventory (NZIoC) Status:** All components either listed or exempt.

**Korean Inventory (KECI) Status:** All components of this product are either listed, listed as the anhydrous compound or exempt.

**Japan (ENCS) Inventory Status:** All components either listed or exempt.

**China (PRC) Inventory (MEP) Status:** All components either listed or exempt.

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## 16. OTHER INFORMATION

**References:** TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Sax, N. Irving and Richard J. Lewis, Sr., revised by. Hawley's Condensed Chemical Dictionary, Eleventh Ed. New York: Van Nostrand Reinhold Co., 1987. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Technical Judgment.

**Complete Text of H phrases referred to in Section 3:** H290 May be corrosive to metals. H331 Toxic if inhaled. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation.

**Revision Summary:** . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

**Date of MSDS Preparation:**

**Day:** 11

**Month:** October

**Year:** 2014

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**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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