



Be Right™

# SAFETY DATA SHEET

Issue Date 10-Jun-2016

Revision Date 09-Jan-2018

Version 3.2

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## 1. IDENTIFICATION

### Product identifier

**Product Name** Sulfuric Acid 0.1600 ± 0.0008 N

### Other means of identification

**Product Code(s)** 1438801

**Safety data sheet number** M00337

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

**Recommended Use** Laboratory reagent. Alkalinity determination.

**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 +1(515)232-2533 - 8am - 4pm CST

## 2. HAZARDS IDENTIFICATION

### Classification

#### **Regulatory Status**

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

Serious eye damage/eye irritation	Category 1
Skin sensitization	

### Hazards not otherwise classified (HNOC)

Not applicable

### Label elements

**Signal word** - Danger



### Hazard statements

H318 - Causes serious eye damage

### Precautionary statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

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

### Other Hazards Known

Not applicable

## 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 #
Sulfuric acid	7664-93-9	<1%	-
Formaldehyde	50-00-0	<0.1%	-
Methyl alcohol	67-56-1	<0.1%	-

## 4. FIRST AID MEASURES

### Description of first aid measures

#### General advice

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

#### Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur.

#### 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 for at least 15 minutes. Get medical attention if irritation develops and persists.

#### Ingestion

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

#### Self-protection of the first aider

Avoid contact with skin, eyes or clothing.

### 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

Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

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<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>	No information available.
<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.

## 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. Use personal protective equipment as required.

**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.

### 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** Pick up and transfer to properly labeled containers.

**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. Do not eat, drink or smoke when using this product.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

**Flammability class** Not applicable

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid CAS#: 7664-93-9	TWA: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>
Formaldehyde CAS#: 50-00-0	STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm (vacated) STEL: 10 ppm (vacated) Ceiling: 5 ppm STEL: 2 ppm	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm
Methyl alcohol CAS#: 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m <sup>3</sup> (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m <sup>3</sup> (vacated) SKN*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>

### 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.

#### Eye/face protection

Tight sealing safety goggles.

#### Skin and body protection

Wear suitable protective clothing.

#### General Hygiene Considerations

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this 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	Color	colorless
Appearance	aqueous solution	Odor threshold	No data available
Odor	Odorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	1.1	

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Melting point/freezing point	-1 °C / 30 °F	
Boiling point / boiling range	~ 100 °C / 212 °F	Estimation based on theoretical calculation
Evaporation rate	0.56 (water = 1)	
Vapor pressure	17.477 mm Hg / 2.33 kPa at 20 °C / 68 °F	Estimation based on theoretical calculation
Vapor density (air = 1)	0.63	
Specific gravity (water = 1 / air = 1)	0.990	
Partition Coefficient (n-octanol/water)	Not applicable	
Soil Organic Carbon-Water Partition Coefficient	Not applicable	
Autoignition temperature	No data available	
Decomposition temperature	100 °C / 212 °F	
Dynamic viscosity	~ 1 cP (mPa s) at 20 °C / 68 °F	
Kinematic viscosity	~ 1.01 cSt (mm <sup>2</sup> /s) at 20 °C / 68 °F	

#### Solubility(ies)

##### Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 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>
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Ethyl alcohol	Soluble	> 1000 mg/L	25 °C / 77 °F

#### Other Information

##### Metal Corrosivity

Steel Corrosion Rate 0.69 mm/yr / 0.03 in/yr  
Aluminum Corrosion Rate 3.15 mm/yr / 0.12 in/yr

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

See ingredients information below

<u>Chemical name</u>	<u>CAS No.</u>	<u>Volatile organic compounds (VOC) content</u>	<u>CAA (Clean Air Act)</u>
Sulfuric acid	7664-93-9	No data available	-
Formaldehyde	50-00-0	No data available	X
Methyl alcohol	67-56-1	No data available	X

##### Explosive properties

Upper explosion limit No data available  
Lower explosion limit No data available

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#### Flammable properties

**Flash point** No data available  
**Method** No information available

#### Flammability Limit in Air

**Upper flammability limit:** No data available  
**Lower flammability limit:** No data available

#### Oxidizing properties

No data available.

#### Bulk density

Not applicable

**Particle Size** No information available

**Particle Size Distribution** No information available

## 10. STABILITY AND REACTIVITY

#### Reactivity

Not applicable.

#### Chemical stability

**Stability** Stable under normal conditions.

#### Explosion data

**Sensitivity to Mechanical Impact** None

**Sensitivity to Static Discharge** None.

#### Possibility of Hazardous Reactions

**Possibility of Hazardous Reactions** None under normal processing.

#### Hazardous polymerization

None under normal processing.

#### Conditions to avoid

**Conditions to avoid** None known based on information supplied.

#### Incompatible materials

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

#### 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** No known effect based on information supplied.

**Eye contact** Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.

**Skin contact** May cause irritation.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Symptoms** Redness. Burning. May cause blindness.

**Aggravated Medical Conditions** Eye disorders.  
**Toxicologically synergistic products** None known.  
**Toxicokinetics, metabolism and distribution** See ingredients information below.

Chemical name	Toxicokinetics, metabolism and distribution
Sulfuric acid (<1%) CAS#: 7664-93-9	The corrosivity of sulfuric acid makes it difficult to assess its effects on metabolism. Its corrosivity is also the main contributor to acute deaths, therefore it is not classified for acute toxicity.
Formaldehyde (<0.1%) CAS#: 50-00-0	Readily Absorbed via the respiratory and gastrointestinal routes. Absorbed formaldehyde can be oxidized to formate and carbon dioxide. Half-life of formaldehyde is 1 min in rat plasma.
Methyl alcohol (<0.1%) CAS#: 67-56-1	Metabolism of methanol appears to be similar regardless of administrative route. Methanol is converted to formaldehyde, which is converted to formate which is oxidized to carbon dioxide in primates.

**Product Acute Toxicity Data**

**Oral Exposure Route** No data available  
**Dermal Exposure Route** No data available  
**Inhalation (Dust/Mist) Exposure Route** No data available  
**Inhalation (Vapor) Exposure Route** No data available  
**Inhalation (Gas) Exposure Route** No data available

**Unknown Acute Toxicity**

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

**Acute Toxicity Estimations (ATE)**

<b>ATEmix (oral)</b>	No information available
<b>ATEmix (dermal)</b>	No information available
<b>ATEmix (inhalation-dust/mist)</b>	No information available
<b>ATEmix (inhalation-vapor)</b>	No information available
<b>ATEmix (inhalation-gas)</b>	No information available

**Ingredient Acute Toxicity Data**

**Oral Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat LD <sub>50</sub>	100 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Sulfuric acid (<1%) CAS#: 7664-93-9	Rat LD <sub>50</sub>	2140 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Rat LD <sub>50</sub>	5628 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**Dermal Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rabbit LD <sub>50</sub>	270 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methyl alcohol (<0.1%) CAS#: 67-56-1	Rabbit LD <sub>50</sub>	15800 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)

**Inhalation (Dust/Mist) Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat LC <sub>50</sub>	0.578 mg/L	4 hours	None reported	LOLI

**Inhalation (Vapor) Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (<1%) CAS#: 7664-93-9	Rat LC <sub>50</sub>	0.510 mg/L	None reported	None reported	LOLI
Methyl alcohol (<0.1%) CAS#: 67-56-1	Rat LC <sub>50</sub>	64000 mg/L	6 hours	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**Inhalation (Gas) Exposure Route** If available, see data below

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

Oral Exposure Route	No data available
Dermal Exposure Route	No data available
Inhalation (Dust/Mist) Exposure Route	No data available
Inhalation (Vapor) Exposure Route	No data available
Inhalation (Gas) Exposure Route	No data available

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

**Oral Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Human LD <sub>Lo</sub>	70 mg/kg	None reported	<b>Gastrointestinal Kidney, Ureter, or Bladder Liver</b> Other changes Ulcerated stomach Other changes	RTECS (Registry of Toxic Effects of Chemical Substances)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Human LD <sub>Lo</sub>	143 mg/kg	None reported	<b>Lungs, Thorax, or Respiration</b> Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)
Formaldehyde (<0.1%) CAS#: 50-00-0	Human TD <sub>Lo</sub>	643 mg/kg	None reported	<b>Gastrointestinal Lungs, Thorax, or Respiration</b> Nausea or vomiting Respiratory obstruction Ulcerated stomach	RTECS (Registry of Toxic Effects of Chemical Substances)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Man LD <sub>Lo</sub>	3.571 mg/kg	None reported	<b>Lungs, Thorax, or Respiration</b> Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)

**Dermal Exposure Route** If available, see data below

**Inhalation (Dust/Mist) Exposure Route** If available, see data below

**Inhalation (Vapor) Exposure Route** If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Human	0.144 mg/L	5 minutes	<b>Lungs, Thorax, or</b>	RTECS (Registry of Toxic



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(<1%) CAS#: 7664-93-9	TD <sub>Lo</sub>			<b>Respiration</b> Dyspnea	Effects of Chemical Substances)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Human TC <sub>Lo</sub>	300 mg/L	None reported	<b>Lungs, Thorax, or Respiration</b> Other changes	RTECS (Registry of Toxic Effects of Chemical Substances)

**Inhalation (Gas) Exposure Route**

If available, see data below

**Aspiration toxicity**

If available, see data below

**Kinematic viscosity**

~ 1.01 cSt (mm<sup>2</sup>/s)

**Product Skin Corrosion/Irritation Data**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (<1%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB (Hazardous Substances Data Bank)
Formaldehyde (<0.1%) CAS#: 50-00-0	Standard Draize Test	Human	0.150 mg	72 hours	Corrosive to skin	RTECS (Registry of Toxic Effects of Chemical Substances)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Standard Draize Test	Rabbit	20 mg	24 hours	Skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

**Product Serious Eye Damage/Eye Irritation Data**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (<1%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB (Hazardous Substances Data Bank)
Formaldehyde (<0.1%) CAS#: 50-00-0	Rinse Test	Human	1 ppm	6 minutes	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Standard Draize Test	Rabbit	40 mg	None reported	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

**Sensitization Information**

**Product Sensitization Data**

**Skin Sensitization Exposure Route**

No data available.

**Respiratory Sensitization Exposure Route**

No data available.

**Ingredient Sensitization Data**

**Skin Sensitization Exposure Route**

If available, see data below.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Patch test	Human	Confirmed to be a skin sensitizer	ERMA (New Zealand's Environmental Risk Management Authority)

**Respiratory Sensitization Exposure Route**

If available, see data below.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	IgE Specific Immune Response Test	Guinea pig	Confirmed to be a respiratory sensitizer	CICAD (Concise International Chemical Assessment Documents)

**Chronic Toxicity Information**

**Product Specific Target Organ Toxicity Repeat Dose Data**

Oral Exposure Route	No data available.
Dermal Exposure Route	No data available.
Inhalation (Dust/Mist) Exposure Route	No data available.
Inhalation (Vapor) Exposure Route	No data available.
Inhalation (Gas) Exposure Route	No data available.

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

Oral Exposure Route	If available, see data below
Dermal Exposure Route	If available, see data below
Inhalation (Dust/Mist) Exposure Route	If available, see data below
Inhalation (Vapor) Exposure Route	If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (<1%) CAS#: 7664-93-9	Human TC <sub>Lo</sub>	.003 mg/L	168 days	<b>Musculoskeletal</b> Changes in teeth and supporting structures	RTECS (Registry of Toxic Effects of Chemical Substances)
Formaldehyde (<0.1%) CAS#: 50-00-0	Human TC <sub>Lo</sub>	0.017 mg/L	0.5 days	<b>Eye</b> <b>Lungs, Thorax, or Respiration</b> Lacrimation Other changes	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Human TC <sub>Lo</sub>	2 mg/L	40 minutes	<b>Lungs, Thorax, or Respiration</b> Other changes Respiratory depression	RTECS (Registry of Toxic Effects of Chemical Substances)

**Inhalation (Gas) Exposure Route**

If available, see data below

**Product Carcinogenicity Data**

Oral Exposure Route	No data available
Dermal Exposure Route	No data available
Inhalation (Dust/Mist) Exposure Route	No data available
Inhalation (Vapor) Exposure Route	No data available
Inhalation (Gas) Exposure Route	No data available

**Ingredient Carcinogenicity Data**

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
Sulfuric acid	7664-93-9	A2	Group 1	Known	X
Formaldehyde	50-00-0	A1	Group 1	Known	X
Methyl alcohol	67-56-1	-	-	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	A2 - Suspected Human Carcinogen
<b>IARC (International Agency for Research on Cancer)</b>	Group 1 - Carcinogenic to Humans
<b>NTP (National Toxicology Program)</b>	Known - Known Carcinogen
<b>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</b>	X - Present

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Oral Exposure Route If available, see data below  
 Dermal Exposure Route If available, see data below  
 Inhalation (Dust/Mist) Exposure Route If available, see data below  
 Inhalation (Vapor) Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat	15 mg/L	78 weeks	Olfaction Tumors	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route If available, see data below

**Product Germ Cell Mutagenicity *in vitro* Data**

No data available.

**Ingredient Germ Cell Mutagenicity *in vitro* Data**

If available, see data below

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (<1%) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available
Methyl alcohol (<0.1%) CAS#: 67-56-1	DNA inhibition	Human lymphocyte	300 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

**Product Germ Cell Mutagenicity *in vivo* Data**

Oral Exposure Route No data available  
 Dermal Exposure Route No data available  
 Inhalation (Dust/Mist) Exposure Route No data available  
 Inhalation (Vapor) Exposure Route No data available  
 Inhalation (Gas) Exposure Route No data available

**Ingredient Germ Cell Mutagenicity *in vivo* Data**

Oral Exposure Route If available, see data below

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Methyl alcohol (<0.1%) CAS#: 67-56-1	DNA damage	Rat	0.405 mg/kg	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Methyl alcohol (<0.1%) CAS#: 67-56-1	Cytogenetic analysis	Mouse	1000 mg/kg	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route If available, see data below  
 Inhalation (Dust/Mist) Exposure Route If available, see data below  
 Inhalation (Vapor) Exposure Route If available, see data below

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Micronucleus test	Human	.000985 mg/L	8.5 years	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

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Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Micronucleus test	Human	2 mg/L	15 minutes	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route

If available, see data below

**Product Reproductive Toxicity Data**

Oral Exposure Route

No data available

Dermal Exposure Route

No data available

Inhalation (Dust/Mist) Exposure Route

No data available

Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

**Ingredient Reproductive Toxicity Data**

Oral Exposure Route

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methyl alcohol (<0.1%) CAS#: 67-56-1	Rat TD <sub>Lo</sub>	4118 mg/kg	10 days	<b>Effects on Embryo or Fetus Specific Developmental Abnormalities</b> Ear Eye Fetotoxicity (except death e.g. stunted fetus) Urogenital System	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methyl alcohol (<0.1%) CAS#: 67-56-1	Rat TC <sub>Lo</sub>	0.0026 mg/L	22 days	<b>Effects on Embryo or Fetus</b> Fetotoxicity (except death e.g. stunted fetus)	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route

If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (<1%) CAS#: 7664-93-9	Rabbit TC <sub>Lo</sub>	.02 mg/L	7 hours	<b>Specific Developmental Abnormalities</b> Musculoskeletal system	No information available
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat TC <sub>Lo</sub>	40 mg/L	14 days	<b>Effects on Embryo or Fetus</b> Fetotoxicity (except death e.g. stunted fetus)	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat TC <sub>Lo</sub>	.001 mg/L	24 weeks	<b>Effects on Embryo or Fetus</b> Cytological changes (including somatic cell genetic material)	RTECS (Registry of Toxic Effects of Chemical Substances)
Methyl alcohol (<0.1%) CAS#: 67-56-1	Mouse TC <sub>Lo</sub>	1500 mg/L	7-9 days	<b>Specific Developmental Abnormalities</b> Central Nervous System	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route

If available, see data below

**12. ECOLOGICAL INFORMATION**

Ecotoxicity

Product Ecological Data

Aquatic toxicity

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**Fish** No data available  
**Crustacea** No data available  
**Algae** No data available

**Ingredient Ecological Data**

**Aquatic toxicity**

**Fish** If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	96 hours	<i>Morone saxatilis</i>	LC <sub>50</sub>	6.7 mg/L	PEEN (Pan European Ecological Network)

**Crustacea** If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	48 Hours	<i>Daphnia pulex</i>	EC <sub>50</sub>	5.8 mg/L	PEEN (Pan European Ecological Network)

**Algae** No data available

**Other Information**

**Persistence and degradability**

**Product Biodegradability Data**

No data available.

**Ingredient Biodegradability Data**

**Bioaccumulation**

**Product Bioaccumulation Data**

No data available.

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

**Ingredient Bioaccumulation Data**

Chemical name	Test method	Exposure time	Species	Bioconcentration factor (BCF)	Results
Formaldehyde (<0.1%) CAS#: 50-00-0	Estimation through BCFBAF v3.01 part of the Estimation Programs Interface (EPI) Suite™	None reported	None reported	BCF = 3.16228	Does not have the potential to bioaccumulate
Methyl alcohol (<0.1%) CAS#: 67-56-1	OECD Test 305: Bioaccumulation in Fish	None reported	None reported	BCF < 10	Does not have the potential to bioaccumulate

**Mobility**

**Soil Organic Carbon-Water Partition Coefficient** Not applicable

**Water solubility**

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

**Other adverse effects**

Contains a substance with an endocrine-disrupting potential.

### 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, U122 U154

<u>Chemical name</u>	<u>RCRA</u>	<u>RCRA - Basis for Listing</u>	<u>RCRA - D Series Wastes</u>	<u>RCRA - U Series Wastes</u>
Formaldehyde 50-00-0	U122	Included in waste streams: K009, K010, K038, K040, K156, K157	-	U122
Methyl alcohol 67-56-1	-	Included in waste stream: F039	-	U154

**Special instructions for disposal** Dilute to 3 to 5 times the volume with cold water. 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. Flush system with plenty of water. If permitted by regulation. Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.

### 14. TRANSPORT INFORMATION

**U.S. DOT** Not regulated

**TDG** Not regulated

**IATA** Not regulated

**IMDG** Not regulated

**Note:** No special precautions necessary.

**Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

### 15. REGULATORY INFORMATION

**National Inventories**

**TSCA** Complies  
**DSL/NDSL** Complies

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**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  
**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 does not contain any 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
Formaldehyde (CAS #: 50-00-0)	0.1
Methyl alcohol (CAS #: 67-56-1)	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
Sulfuric acid 7664-93-9	1000 lb	-	-	X
Formaldehyde 50-00-0	100 lb	-	-	X

**CERCLA**

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

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sulfuric acid	1000 lb	1000 lb	RQ 1000 lb final RQ

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7664-93-9			RQ 454 kg final RQ
Formaldehyde 50-00-0	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Methyl alcohol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

**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
Formaldehyde (<0.1%) CAS#: 50-00-0	Release - Toxic (solution)

**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 (<1%) CAS#: 7664-93-9	Not Listed	50 gallon Export Volume (exports, transshipments and international transactions to designated countries)

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Formaldehyde (CAS #: 50-00-0)	Carcinogen
Methyl alcohol (CAS #: 67-56-1)	Developmental

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

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid 7664-93-9	X	X	X
Formaldehyde 50-00-0	X	X	X
Methyl alcohol 67-56-1	X	X	X

**U.S. EPA Label Information**

Chemical name	FIFRA	FDA
Sulfuric acid	180.0910	21 CFR 184.1095
Methyl alcohol	180.0910	-

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

**Special Comments**

None

**Additional information**

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

EN / AGHS



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Chemical name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thersholds
Formaldehyde 50-00-0	Declarable Substance (FI) Prohibited Substance (LR) Declarable Substance (LR)	0.0 % 0.1 %
Methyl alcohol 67-56-1	Declarable Substance (FI)	0.1 %

**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 - X</b> - See section 8 for more information

**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 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** 10-Jun-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**