

Issue Date 24-Apr-2015

Revision Date 30-Sep-2015

Version 4

**1. IDENTIFICATION**

**Product identifier**

**Product Name** Sulfuric Acid 96% Viscosity Grade

**Other means of identification**

**Product Code** 7700

**UN/ID no.** UN1830

**Synonyms** Oil of vitriol; Babcock acid; sulphuric acid

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

**Recommended Use** Laboratory chemicals.

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Manufacturer Address**

Harrell Industries, Inc.  
2495 Commerce Drive  
Rock Hill, SC 29730

[www.harrellindustries.com](http://www.harrellindustries.com)

**Emergency telephone number**

**Company Phone Number** 803-327-6335

**Fax Number** 803-327-7808

**24 Hour Emergency Phone Number** 800 633-8253 (PERS)

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**

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

**Label elements**

**Emergency Overview**

**Danger**

**Hazard statements**

Causes severe skin burns and eye damage

Corrosive to metals.



POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR CONTACTED WITH SKIN. HARMFUL IF INHALED. AFFECTS TEETH. WATER REACTIVE. CANCER HAZARD. STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure.

<b>Appearance</b> Clear oily liquid	<b>Physical state</b> liquid	<b>Odor</b> Odorless
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**Precautionary Statements - Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash skin thoroughly after handling

Store locked up

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

Contact can cause blurred vision, redness, pain and severe tissue burns.

May cause blindness

Corrosive. Symptoms of redness, pain, and severe burn can occur. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.

Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow ingestion or skin contact. Circulatory shock is often the immediate cause of death.

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

Not applicable

Unknown acute toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance****Synonyms****Formula**

Oil of vitriol; Babcock acid; sulphuric acid.

H<sub>2</sub>SO<sub>4</sub> in H<sub>2</sub>O

Chemical Name	CAS No.	Weight-%
Water	7732-18-5	2-4
Sulfuric acid	7664-93-9	96-98

### 4. FIRST AID MEASURES

**Description of first aid measures****Eye contact**

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician immediately.

**Skin contact**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Excess acid on skin can be neutralized with a 2% solution of bicarbonate of soda. Call a physician immediately.

**Inhalation**

Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

**Ingestion**

Do NOT induce vomiting. Give large amounts of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

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

Long-term exposure to mist may cause damage to teeth. Chronic exposure to mists containing sulfuric acid is a cancer hazard.

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

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****Suitable extinguishing media**

Dry chemical. Carbon dioxide (CO<sub>2</sub>). Foam. Water spray may be used to keep fire exposed containers cool.

**Unsuitable extinguishing media** Use water spray or fog; do not use straight streams. DO NOT USE WATER.

**Specific hazards arising from the chemical**

Concentrated material is a strong dehydrating agent. Reacts with organic materials and may cause ignition of finely divided materials on contact. Contact with most metals causes formation of flammable and explosive hydrogen gas.

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Structural firefighter's protective clothing is ineffective for fires involving this material. Stay away from sealed containers.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal equipment. Isolate hazard area.

**Environmental precautions**

**Environmental precautions** See Section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

**Methods for containment** Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb and place into a chemical waste container.

**Methods for cleaning up** Dry lime or soda ash may be used to neutralize spills. Absorb with inert materials (e.g., vermiculite, dry sand, earth). Do not use combustible materials, such as saw dust. Do not flush to sewer!!.

**7. HANDLING AND STORAGE****Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, always add the acid to water; never add water to the acid. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

**Incompatible materials** Water spray. Sodium. Bases. Halogens. Strong oxidizers. Strong reducing agents. Potassium chlorate, potassium perchlorate, potassium permanganate, lithium, organic material, metal acetylides, oxides, hydrides, metals (yields hydrogen gas), many other reactive substances.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic fraction	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>

#### Appropriate engineering controls

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

**Eye/face protection** Use chemical safety goggles and/or full face shield. Maintain eye wash fountain and quick-drench facilities in work area.

**Skin and body protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	liquid	<b>Odor</b>	Odorless
<b>Appearance</b>	Clear oily liquid	<b>Odor threshold</b>	No information available
<b>Color</b>	clear		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	1N solution (ca. 5%w/w)=0.3; 0.1N solution (ca 0.5 w/w)=1.2; 0.01 N solution (ca.0.05% w/w)= 2.1		
<b>Melting point / freezing point</b>	3, -32, -38, -64 °C / 100, 93, 78, 65 °F		
<b>Boiling point / boiling range</b>	ca. 290 (decomposes at 340C) °C / ca. 554 °F		
<b>Flash point</b>	No information available		
<b>Evaporation rate</b>	No information available		
<b>Flammability (solid, gas)</b>	No information available		
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit:</b>	No information available		
<b>Lower flammability limit:</b>	No information available		
<b>Vapor pressure</b>	1 @ 145.8C (295F)		
<b>Vapor density</b>	3.4		
<b>Relative density</b>	1.84 (98%), 1.40 (50%), 1.07 (10%)		
<b>Water solubility</b>	Trifluoroacetic acid: Miscible in water Liberates much heat		
<b>Solubility in other solvents</b>	No information available		

<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Kinematic viscosity</b>	No information available
<b>Dynamic viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

**Other Information**

<b>Softening point</b>	No information available
<b>Molecular weight</b>	98.08
<b>VOC Content (%)</b>	No information available
<b>Density</b>	No information available
<b>Bulk density</b>	No information available

**10. STABILITY AND REACTIVITY****Reactivity**

No data available

**Chemical stability**

Stable under ordinary conditions of use and storage. Concentrated solutions react violently with water, spattering and liberating heat.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous polymerization** Will not occur.

**Conditions to avoid**

Trifluoroacetic acid: Moisture and incompatibles. Heat.

**Incompatible materials**

Water spray. Sodium. Bases. Halogens. Strong oxidizers. Strong reducing agents. Potassium chlorate, potassium perchlorate, potassium permanganate, lithium, organic material, metal acetylides, oxides, hydrides, metals (yields hydrogen gas), many other reactive substances.

**Hazardous Decomposition Products**

Toxic fumes of oxides of sulfur when heated to decomposition. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Ingestion**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg ( Rat )	-	-
Sulfuric acid 7664-93-9	= 2140 mg/kg ( Rat )	-	= 510 mg/m <sup>3</sup> ( Rat ) 2 h

**Information on toxicological effects****Symptoms**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Carcinogenicity**

This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric acid	A2	Group 1	Known	X

7664-93-9			
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**Numerical measures of toxicity - Product Information****12. ECOLOGICAL INFORMATION**

Toxic to aquatic life.

**Ecotoxicity**

When released into the soil, this material may leach into groundwater. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sulfuric acid 7664-93-9	-	500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50

**Persistence and degradability****Bioaccumulation****Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility.

**Contaminated packaging**

Do not reuse container.

Chemical Name	California Hazardous Waste Status
Sulfuric acid 7664-93-9	Toxic Corrosive

**14. TRANSPORT INFORMATION****DOT**

Regulated  
UN/ID no. UN1830  
Proper shipping name Sulfuric acid  
Hazard Class 8  
Packing Group II  
Reportable Quantity (RQ) 1000 lbs (454 kg)  
Marine pollutant Toxic to aquatic life.

**TDG**

Regulated  
UN/ID no. UN1830  
Proper shipping name Sulfuric acid  
Hazard Class 8  
Packing Group II

**MEX**

Regulated  
UN/ID no. UN1830

<b>Proper shipping name</b>	Sulfuric acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>ICAO (air)</b>	Regulated
<b>UN/ID no.</b>	UN1830
<b>Proper shipping name</b>	Sulfuric acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>IATA</b>	Regulated
<b>UN/ID no.</b>	UN1830
<b>Proper shipping name</b>	Sulfuric acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>IMDG</b>	Regulated
<b>UN/ID no.</b>	UN1830
<b>Proper shipping name</b>	Sulfuric acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>RID</b>	Regulated
<b>UN/ID no.</b>	UN1830
<b>Proper shipping name</b>	Sulfuric acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>ADR</b>	Regulated
<b>UN/ID no.</b>	UN1830
<b>Proper shipping name</b>	Sulfuric Acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II
<b>ADN</b>	Regulated
<b>UN Number</b>	UN1830
<b>Proper shipping name</b>	Sulfuric acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

## 15. REGULATORY INFORMATION

### International Inventories

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Does not comply
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**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

**AICS** - Australian Inventory of Chemical Substances

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Sulfuric acid - 7664-93-9	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 contains the following substances which are regulated 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

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations****California Proposition 65**

Chemical Name	California Proposition 65
Sulfuric acid - 7664-93-9	Carcinogen

**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
Water 7732-18-5	-	-	X
Sulfuric acid 7664-93-9	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

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

<b>NFPA</b>	Health hazards 3	Flammability 0	Instability 2	Physical and Chemical Properties -
<b>HMIS</b>	Health hazards 4	Flammability 0	Physical hazards 2	Personal protection X

Issue Date 24-Apr-2015

Revision Date 30-Sep-2015

**Revision Note**

No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet