

## 1. Identification

<b>Product identifier</b>	<b>Dilute Sulfuric Acid, 50-60%</b>	
<b>Other means of identification</b>		
<b>SDS number</b>	10000062	
<b>Synonyms</b>	Drying acid, battery acid, oil of vitriol, dihydrogen sulfate, electrolyte acid, matting acid.	
<b>Recommended use</b>	Chemical intermediate, pH neutralizer, Fertilizer, Alum	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer / Importer / Supplier / Distributor information</b>		
<b>Company name</b>	Olin Chlor Alkali Products	
<b>Address</b>	490 Stuart Road, NE Cleveland, TN 37312	
<b>Company name</b>	Pioneer Americas, LLC (d/b/a Olin Chlor Alkali Products)	
<b>Address</b>	490 Stuart Road, NE Cleveland, TN 37312	
<b>Company name</b>	Olin Canada ULC (d/b/a Olin Chlor Alkali Products)	
<b>Address</b>	2020 University, Suite 2190 Montreal, Quebec H3A 2A5	
<b>General Information</b>		
<b>Telephone</b>	(888) 658-6SDS (737)	
<b>Website</b>	olinchloralkali.com	
<b>Contact person</b>	ORC SDS Control Group	
<b>Emergency phone number</b>	CHEMTREC	
	US: 1-800-424-9300	Canada: 1-800-567-7455

## 2. Hazard(s) identification

<b>Physical hazards</b>	Corrosive to metals	Category 1
<b>Health hazards</b>	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		



<b>Signal word</b>	Danger
<b>Hazard statement</b>	May be corrosive to metals. Causes severe skin burns and eye damage. May cause cancer. May cause respiratory irritation.
<b>Precautionary statement</b>	
<b>Prevention</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe the mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.
<b>Response</b>	If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): 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. Immediately call a poison center/doctor/. Wash contaminated clothing before reuse. If exposed or concerned: Get medical advice/attention. Absorb spillage to prevent material damage.
<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container with a resistant inner liner. Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	Not classified.

<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3

#### Supplemental information

<b>Hazard statement</b>	Harmful to aquatic life with long lasting effects.
<b>Precautionary statement Prevention</b>	Avoid release to the environment.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
Sulfuric acid	7664-93-9	50 - 60

### 4. First-aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention IMMEDIATELY. Call a physician or poison control center immediately.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth thoroughly. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
<b>Most important symptoms/effects, acute and delayed</b>	Contact with this material will cause burns to the skin, eyes and mucous membranes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Dry chemical. Foam. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Water. Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Should not be released into the environment.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Deactivation materials include lime, limestone, sodium carbonate (soda ash), sodium bicarbonate, and dilute sodium hydroxide. Prevent entry into waterways, sewer, basements or confined areas.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.  Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Do not breathe mist or vapor. Observe good industrial hygiene practices. Do not empty into drains. Product is extremely hygroscopic. NEVER add water to acid. Dilution reaction is violent and will generate large amounts of heat and chemical mists.

### Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Store away from incompatible materials. Store in containers specially designed for this product and strength. Keep away from heat, sparks and open flame.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m <sup>3</sup>

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.

#### US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m <sup>3</sup>

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

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

#### Eye/face protection

Wear safety glasses with side shields (or goggles). Face-shield. Wear a full-face respirator, if needed.

#### Skin protection

##### Hand protection

Chemical resistant gloves.

##### Other

Wear appropriate chemical resistant clothing.

#### Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

Do not get this material on clothing. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

#### Physical state

Liquid.

#### Form

Liquid.

#### Color

Colorless to amber.

### Odor

Pungent.

### Odor threshold

Not available.

### pH

< 1 (25 °C/77 °F)

### Melting point/freezing point

-20 °F (-28.89 °C) (60% solution)

### Initial boiling point and boiling range

280 °F (137.78 °C) (60% solution)

### Flash point

Not available.

### Evaporation rate

Not available.

### Flammability (solid, gas)

Not available.

**Upper/lower flammability or explosive limits**

<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.

<b>Vapor pressure</b>	< 1 hPa
<b>Vapor density</b>	Not available.
<b>Relative density</b>	1.5 (60% solution)
<b>Solubility(ies)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.

**Other information**

<b>Bulk density</b>	12.5 lb/gal (60% solution)
<b>Molecular formula</b>	H2SO4
<b>Molecular weight</b>	98.08 g/mol

**10. Stability and reactivity**

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with metal may release flammable hydrogen gas. Contact with incompatible materials. Do not mix with other chemicals.
<b>Incompatible materials</b>	Incompatible with bases. Amines. Metals. Organic compounds. This product may react with reducing agents.
<b>Hazardous decomposition products</b>	Sulfur oxides (SOx.).

**11. Toxicological information****Information on likely routes of exposure**

<b>Ingestion</b>	Causes digestive tract burns. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
<b>Inhalation</b>	Vapors and mist will irritate throat and respiratory system and cause coughing.
<b>Skin contact</b>	Causes skin burns.
<b>Eye contact</b>	Causes eye burns. Permanent eye damage or blindness could result.

**Symptoms related to the physical, chemical and toxicological characteristics** Contact with this material will cause burns to the skin, eyes and mucous membranes. Permanent eye damage including blindness could result.

**Information on toxicological effects**

**Acute toxicity** Occupational exposure to the substance or mixture may cause adverse effects.

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Sulfuric acid (CAS 7664-93-9)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Guinea pig	0.018 mg/l, 8 Hours
	Rat	347 mg/l, 1 Hours
<i>Oral</i>		
LD50	Rat	2140 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Causes severe skin burns and eye damage.

<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory sensitization</b>	No data available.
<b>Skin sensitization</b>	No data available.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Mist: May cause cancer by inhalation.  ACGIH Group A2 (Suspected human carcinogen)
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Sulfuric acid (CAS 7664-93-9)	1 Carcinogenic to humans.
<b>NTP Report on Carcinogens</b>	
Sulfuric acid (CAS 7664-93-9)	Known To Be Human Carcinogen.
<b>Reproductive toxicity</b>	No data available.
<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.
<b>Specific target organ toxicity - repeated exposure</b>	No data available.
<b>Aspiration hazard</b>	No data available.
<b>Further information</b>	Prolonged, repeated exposure to acid fumes/mists may cause chronic bronchitis, irritation of skin, mucous membranes and gastrointestinal tract and erosion of the teeth.

## 12. Ecological information

<b>Ecotoxicity</b>	Harmful to aquatic life with long lasting effects. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
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Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
<b>Aquatic</b>		
Fish	LC50 Western mosquitofish ( <i>Gambusia affinis</i> )	42 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	The products of biodegradation may be more toxic than the original product.
<b>Mobility in soil</b>	Not available.
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
<b>Hazardous waste code</b>	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

<b>DOT</b>	
<b>UN number</b>	UN1830
<b>UN proper shipping name</b>	Sulfuric acid with more than 51 percent acid
<b>Transport hazard class(es)</b>	8
<b>Subsidiary class(es)</b>	-
<b>Packing group</b>	II

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Special provisions** A3, A7, B3, B83, B84, IB2, N34, T8, TP2, TP12  
**Packaging exceptions** 154  
**Packaging non bulk** 202  
**Packaging bulk** 242

**IATA**

**UN number** UN1830  
**UN proper shipping name** Sulphuric acid with more than 51% acid  
**Transport hazard class(es)** 8  
**Subsidiary class(es)** -  
**Packaging group** II  
**Environmental hazards** No  
**Labels required** 8  
**ERG Code** 8L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

**UN number** UN1830  
**UN proper shipping name** SULPHURIC ACID with more than 51% acid  
**Transport hazard class(es)** 8  
**Subsidiary class(es)** -  
**Packaging group** II  
**Environmental hazards**  
**Marine pollutant** No  
**Labels required** 8  
**EmS** F-A, S-B  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Sulfuric acid (CAS 7664-93-9) LISTED

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - Yes

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Sulfuric acid	7664-93-9	50 - 60

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Sulfuric acid (CAS 7664-93-9)

**Safe Drinking Water Act (SDWA)** Not regulated.

**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

Sulfuric acid (CAS 7664-93-9) 6552

**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**

Sulfuric acid (CAS 7664-93-9) 20 % weight/volumn

**DEA Exempt Chemical Mixtures Code Number**

Sulfuric acid (CAS 7664-93-9) 6552

**Food and Drug Administration (FDA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Sulfuric acid (CAS 7664-93-9)

**US. New Jersey Worker and Community Right-to-Know Act**

Sulfuric acid (CAS 7664-93-9) 500 lbs

**US. Pennsylvania RTK - Hazardous Substances**

Sulfuric acid (CAS 7664-93-9)

**US. Rhode Island RTK**

Sulfuric acid (CAS 7664-93-9)

**US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Sulfuric acid (CAS 7664-93-9)

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

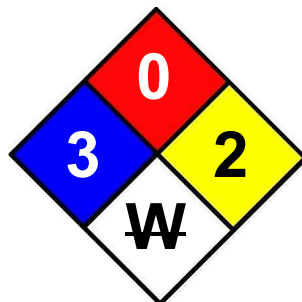
**16. Other information, including date of preparation or last revision**

**Issue date** 20-December-2013

**Revision date** -

**Version #** 01

**NFPA Ratings**



**List of abbreviations**

LD50: Lethal Dose, 50%.  
LC50: Lethal Concentration, 50%.  
EC50: Effective concentration, 50%.  
TWA: Time weighted average.

**References**

EPA: AQUIRE database  
HSDB® - Hazardous Substances Data Bank  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
IARC Monographs. Overall Evaluation of Carcinogenicity  
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

**Disclaimer**

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.