



# 93.2% SULFURIC ACID

## Safety Data Sheet

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product/Chemical Name:** Sulfuric Acid

**Chemical Family:** Inorganic acids

**General Use:** Waste water treatment, papermaking, fertilizer production, and other manufacturing applications

**Company Information:**

GAC Chemical Corporation

34 Kidder Point Road

Searsport, Maine 04974 U.S.A.

Phone: 207-548-2525 FAX: 207-548-2891 Toll Free: 800-266-5155

**Emergency Phone:**

1-800-424-9300 Chemtrec (USA)

### SECTION 2. HAZARDS IDENTIFICATION



**Signal Word:** DANGER

**Hazard Statements:** Causes severe skin burns and eye damage

**Precautionary Statements:**

- Do not get in eyes, on skin or on clothing.
- Wear gloves, eye and face protection and protective clothing.
- Do not breathe mist, vapors, or spray.
- Avoid release to the environment
- IF SWALLOWED: Rinse mouth. Do not induce vomiting
- IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with 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 to fresh air and keep at rest in a position comfortable for breathing.
- Get immediate medical attention.
- Collect spillage.
- Store in a closed container.

Dispose of container in accordance with local, state, province and federal regulations.

### SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substance:** Sulfuric Acid CAS# 7664-93-9

**Chemical Name:** Sulfuric Acid CAS#: 7664-93-9 (93.2 – 94.0%)  
Water CAS#: 7732-18-5 (6.0 – 6.8%)

**Synonyms:** Sulphuric Acid, Dihydrogen Sulfate, Oil of Vitriol, Vitriol Brown Oil, 66° Baume Sulfuric Acid

**Impurities:** NA. No impurities or additives which are themselves classified and which contribute to the classification of the substance.

### SECTION 4. FIRST AID MEASURES

**Inhalation of mist or liquid:**

Remove person from source of exposure to fresh air. If breathing is difficult, administer oxygen. If not breathing, start CPR. Take precautions to avoid secondary contamination by residual acid. Get medical attention immediately.

**Skin contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Get medical attention immediately. While the patient is being transported to a medical facility, apply cold wet compresses.

**Eye contact:**

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention immediately. While patient is being transported to a medical facility, continue flushing with tepid water.

**Ingestion:**

DO NOT induce vomiting. If fully conscious, rinse mouth with water and give ½ to 1 cup of water or milk to dilute material. If spontaneous vomiting occurs, keep head below hips to prevent aspiration; rinse mouth with water and give ½ to 1 cup water or milk. Get medical attention immediately.

**Most Important Symptoms/Effects:**

**Inhalation:**

Causes severe irritation of the nose, throat and respiratory tract. Possibility of damage to the upper respiratory tract and lung tissues.

**Skin contact:**

Liquid contact causes severe irritation and/or corrosive burns.

**Eye contact:**

Liquid contact causes severe irritation, corrosive burns, and/or blindness.

**Ingestion:**

Causes corrosive burns to the mouth, throat, esophagus and stomach.

### SECTION 5. FIRE FIGHTING MEASURES

**Flammability:**

Not flammable.

**Suitable Extinguishing Media:**

For fires in area use appropriate extinguishing media. Use water spray to keep containers cool.

**Specific Hazards Arising from the Chemical:**

Sulfuric acid reacts with most metals releasing hydrogen gas. Metal containers storing sulfuric acid will have some hydrogen gas, especially if unvented. Hydrogen gas is extremely flammable and explosive. Sulfuric acid decomposes at extremely high temperatures to release sulfur oxides. Sulfuric acid generates heat upon the addition of water, with the possibility of splattering.

**Special Protective Equipment and Precautions for Firefighters:**

Wear full protective fire fighting clothing including NIOSH approved self contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Do not allow water runoff to enter sewers or waterways.

<b>SECTION 6. ACCIDENTIAL RELEASE MEASURES</b>
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**General:**

Site specific procedures to address accidental spills are necessary as dictated by facility design, location, staffing, containment structures, and regulatory requirements. Consult engineers if needed.

**Personal Precautions, Protective Equipment and Emergency Procedures:**

In the event of a spill, clear unnecessary personnel from spill area. Maintain adequate ventilation. Use personal protective equipment recommended in Section 8.

**Methods and Materials for Containment and Cleaning Up:**

Shut off source of leak if safe to do so. Manage spill using containment structures or inert materials and collect for reuse. Product not reused can be neutralized using soda ash or lime. Neutralized residue can be captured using absorbent materials for disposal in accordance with local, state, province, and federal regulations. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

<b>SECTION 7. HANDLING AND STORAGE</b>
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**Incompatible Chemicals:**

Avoid contact with alkalis and basic (high pH) materials. Reacts violently with water.

**Containment:**

To minimize the possibility of a release into the environment and contact with other incompatible chemicals, storage tanks and containers should have a dedicated liquid tight secondary containment system. Consult engineers if needed.

**General Hygiene:**

Do not eat, drink, take medication or smoke when direct contact is possible.

Always thoroughly wash hands after leaving a work area where contact is possible or has occurred.

**Storage:**

Keep storage tanks and containers closed and contents protected from dust, dirt, and moisture.

Vent storage tanks. Store containers in a cool, dry, well ventilated area.

Have storage tanks, containers, and transfer systems properly labeled for contents.

Have procedures for determining product quantity in storage tanks and for accepting deliveries.

Use tanks, transfer lines, pumps valves and process instrumentation designed for this material using approved materials of construction. Some materials commonly used are mild steel, stainless steel and some plastics. Non-ferrous metals will be damaged by corrosion. Consult engineers if needed.

**Temperature for Storage:**

Preferred storage temperature range is -18°C-27°C (0°F-80°F).

**Ventilation:**

Local passive or mechanical ventilation can be used.

**Personal Protection:**

If direct contact with material is likely use personal protective equipment.

<b>SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION</b>
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<b>Exposure Limits</b>			
<b>Ingredient: Sulfuric acid mist/vapor</b>			
OSHA PEL	ACGIH TLV	NIOSH TLV	NIOSH
TWA      STEL	TWA      STEL	TWA      STEL	IDLH
1mg/m <sup>3</sup> none est.	0.2mg/m <sup>3</sup> none est.	1mg/m <sup>3</sup> none est.	15mg/m <sup>3</sup>

**Respiratory - Ventilation:**

Local passive or mechanical ventilation is typically used. Under normal conditions respiratory protective equipment is not needed. If work requires direct exposure to product vapor or mist, use appropriate, NIOSH approved respiratory protection. Consult engineers if necessary.

**Eye - Skin wash:**

Have appropriate eye wash and safety shower stations available in the work area.

**Eyes:**

Use protective goggles and face shield protection to prevent direct contact.

**Skin:**

Wear impervious pants, jacket, gloves, boots and hardhat. For spill cleanup, use impervious pants, jacket, gloves, boots, and hardhat. If sulfuric acid mist/vapor are present, wear NIOSH approved respiratory protection.

<b>SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Appearance:** Liquid, oily, clear to turbid, colorless to light grey

**Odor:** odorless

**Odor Threshold:** NA

**pH:** <1

**Melting/Freeze point:** -29°C to -35°C (-21°F to -31°F) approx.

**Boiling point-range:** 279°C-287°C (535°F- 549°F) approx.

**Flash point:** NA

**Evaporation rate:** NA

**Flammability:** NA

**Upper/lower flammability limits:** NA

**Vapor pressure:** <0.3 mm Hg @ 25°C (77°F)

**Vapor density:** NA

**Relative Density (Specific Gravity):** 1.8354 S.G. @ 15.5°C (60°F)

**Water Solubility:** Completely miscible

**Partial coefficient: n-octanol/water:** NA

**Auto ignition:** NA

**Decomposition temperature:** NA

**Viscosity:** 22.5 cP @ 20°C (68°F)

## SECTION 10. STABILITY AND REACTIVITY

### **Reactivity:**

Product reacts violently with water, organic substances and basic solutions with evolution of heat and hazardous mists.

### **Chemical Stability:**

Product is chemically stable under normal ambient temperature and conditions while stored or used.

### **Possibility of Hazardous Reactions:**

Product will not polymerize. Product reacts violently with water.

### **Conditions to Avoid:**

Avoid elevated temperatures, sources of ignition.

### **Incompatible Materials:**

Vigorous reactions with: Water; Alkaline solutions; Metals, Metal powder; Carbides; Chlorates; Fulminates; Nitrates; Picrates; Strong oxidizers; Strong reducers; or Combustible organic materials. Hazardous gasses are evolved on contact with chemicals such as cyanides, sulfides, and carbides. Sulfuric acid reacts with metal to produce hydrogen, a flammable and potentially explosive gas. Consult engineers if necessary.

### **Hazardous Decomposition Products:**

Possibility of decomposition if heated and/or in contact with fire, releasing toxic gases and vapors (sulfur oxides).

## SECTION 11. TOXICOLOGICAL INFORMATION

### **Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

#### **Sulfuric Acid (7664-93-9)**

Oral LD50 Rat 2140mg/kg; Inhalation LC50 (2 hours) Rat 510 mg/m<sup>3</sup>; Mouse 320 mg/m<sup>3</sup>

#### **Carcinogenicity:**

Strong inorganic acid mists containing sulfuric acid: PROVEN (Human, Group 1, IARC); SUSPECTED (Human, Group 2, ACGIH); Group X (NTP); Classification not applicable to sulfuric acid and sulfuric acid solutions.

#### **Mutagenic Effects:**

Cytogenetic analysis: 4mmol/l (Overies, Hamster). Not teratogenic (Mice, Rabbits).

#### **Reproductive Effects:**

Inhalation (lo CT): 20 mg/m<sup>3</sup>/7hour(6-18 days pregnant) reproductive effects: Specific developmental abnormalities (Musculoskeletal system) (Rabbit).

### **HEALTH EFFECTS**

#### **Inhalation - Acute Exposure**

May be fatal if inhaled in large quantity. May produce severe irritation of the respiratory tract with coughing, shortness of breath and /or choking. Maintain observation of the patient for delayed onset of pulmonary edema.

**Inhalation - Chronic Exposure**

Overexposure to strong inorganic mists containing sulfuric acid: Possibility of laryngeal cancer (HSBD, IARC). Possibility of irritation of the nose and throat with sneezing, sore throat, runny nose, headache, nausea and/or weakness. Gross overexposure: Possibility of irritation of nose, throat and lungs with cough, difficulty breathing or shortness of breath; Pulmonary edema with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin. Symptoms may be delayed.

**Skin Contact - Acute Exposure**

Liquid contact causes severe irritation and/or corrosive burns, ulcers and scarring.

**Skin Contact - Chronic Exposure**

Chronic exposure to mists may cause irritation with itching, burning, redness, swelling and/or rash.

**Eye Contact - Acute Exposure**

Liquid contact causes severe irritation, corrosive burns, ulceration and/or blindness.

**Eye Contact - Chronic Exposure**

Chronic exposure to mists may cause irritation with tearing, pain, blurred vision and/or conjunctivitis.

**Ingestion - Acute Exposure**

Causes corrosive burns to the mouth, throat, esophagus and stomach with severe pain, bleeding, vomiting, diarrhea and collapse of blood pressure. Damage may appear days after exposure. May be fatal.

**Ingestion - Chronic Exposure**

Chronic exposure to mists may cause corrosion of the teeth.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity (aquatic):****Sulfuric Acid (7664-93-9)**

**Fish:** 48 hr LC50 Bluegill Sunfish, 16 mg/L

**Invertebrate:** 48 hr EC50 Daphnia magna: >100 mg/L

**Persistence and Degradability:**

Sulfate ion: Ubiquitous in the environment. Metabolized by micro-organisms and plants.

**Bioaccumulation Potential:**

This product is not expected to bioaccumulate.

**Mobility in Soil:**

Easy soil seeping under rain action.

**Other Adverse Effects:**

The product may affect the acidity (pH factor) in water with risk of harmful effects to aquatic life.

Toxicity to aquatic life increases with lowering pH. At pH lower than 5, only a few fish species can survive and at pH lower than 4, aquatic life is rare.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**RCRA Hazardous Waste:** Not listed. Waste product may be D002 under §261.22(a)(2) if the pH <2.

**Neutralization:**

Product can be neutralized using soda ash or lime. Neutralized residue can be captured using absorbent materials for disposal in accordance with local, state, province, and federal regulations.

**Contaminated Packaging:**

Packaging and storage containers that cannot be thoroughly cleaned must be disposed of in accordance with local, state, province, and federal regulations.

#### SECTION 14. TRANSPORTATION INFORMATION

**Land (DOT), Sea (IMDG), Air (ICAO/IATA)**

**Identification Number:** UN1830

**Proper Shipping Name:** Sulfuric Acid

**Hazard Class:** 8

**Packing Group:** II

**Environmental Hazards:** Marine pollutant: no; Hazardous substance: yes (RQ=1000lbs.)

**Special Precautions:** None known

#### SECTION 15. REGULATORY INFORMATION

**RCRA Hazardous Waste:** Not Listed.

Unused, un-neutralized product may be a Characteristic Waste (D002). Consult engineers if necessary.

**CERCLA Hazardous Substance:** Yes

**CERCLA Reportable Quantity (RQ):** 1000 lbs.

**SARA 311/312 Categories:**

**Acute (immediate) health effects:** Yes

**Chronic (delayed) health effects:** No

**Sudden release of pressure hazard:** No

**Reactivity hazard:** Yes

**Fire hazard:** No

**SARA 313 Toxic Chemical Listing:** Listed

**SARA Extremely Hazardous Substance (EHS):** Yes

**OSHA Air (29CFR 1910.10000, Table Z-1, Z-1A):** Listed

**OSHA Special Regulated Substance (29CFR 1910):** Not listed

**California Prop 65 Chemical:** No

**United States TSCA Section Inventory Status:** Product listed on the TSCA Inventory.

**State Regulations:** State specific regulations have not been determined by GAC Chemical Corporation.  
Consult engineers if necessary.

#### SECTION 16. OTHER INFORMATION

**HMIS Rating:**

Health: 3

Flammability: 0

Reactivity: 2

**NFPA Rating:**

Health: 3

Fire: 0

Reactivity: 2

Special: Acid

**Preparatory Statement:**

The information in this Safety Data Sheet (SDS) is correct to the best of our knowledge, information we have available, and belief as of the publication date. The information is designed solely as guidance for handling, storage, transportation, release, and disposal 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 other materials or in any process unless specified in the text.

**Date Sources for the SDS:**

Literature, databases, practice, publications, own tests, regulations

**Revision:**

March 2015 replaces all earlier.

**GAC Chemical Corporation**

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