



## SAFETY DATA SHEET

Creation Date 09-AUG-2017

### 1. Identification

**Product Name** Sulfuric acid solution, 1.0 M

**Cat No. :** A001505 - TA1

**Synonyms** Oil of vitriol solution; Hydrogen sulfate solution

**Recommended Use** Laboratory chemicals.

**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

**Company**

EZKEM  
1045 Cannon Drive  
Hood River, OR 97031  
541-387-0343

**Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

**Classification**

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

|                                   |              |
|-----------------------------------|--------------|
| Corrosive to metals               | Category 1   |
| Skin Corrosion/irritation         | Category 1 A |
| Serious Eye Damage/Eye Irritation | Category 1   |

**Label Elements**

**Signal Word**

Danger

**Hazard Statements**

May be corrosive to metals  
Causes severe skin burns and eye damage



**Precautionary Statements**

**Prevention**

Wear protective gloves/protective clothing/eye protection/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Use only outdoors or in a well-ventilated area  
Keep only in original container

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Spills**

Absorb spillage to prevent material damage

**Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Store in corrosive resistant polypropylene container with a resistant inliner

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

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

### 3. Composition / information on ingredients

| Component     | CAS-No    | Weight % |
|---------------|-----------|----------|
| Water         | 7732-18-5 | 90 - 95  |
| Sulfuric acid | 7664-93-9 | 5 - 10   |

### 4. First-aid measures

|  |  |
|--|--|
| <b>Eye Contact</b>                     | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.  |
| <b>Skin Contact</b>                    | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.  |
| <b>Inhalation</b>                      | Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration. |
| <b>Ingestion</b>                       | Do not induce vomiting. Call a physician or Poison Control Center immediately.   |
| <b>Most important symptoms/effects</b> | Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation                              |
| <b>Notes to Physician</b>              | Treat symptomatically  |

### 5. Fire-fighting measures

**Suitable Extinguishing Media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

|   |                          |
|---|--------------------------|
| <b>Unsuitable Extinguishing Media</b>   | DO NOT USE WATER         |
| <b>Flash Point</b>                      | Not applicable           |
| <b>Method -</b>                         | No information available |
| <b>Autoignition Temperature</b>         | No information available |
| <b>Explosion Limits</b>                 |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**Specific Hazards Arising from the Chemical**

Corrosive Material. Non-combustible. Thermal decomposition can lead to release of irritating gases and vapors. Contact with metals may evolve flammable hydrogen gas. Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Sulfur oxides Hydrogen

**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.

**NFPA**

**Health**  
3

**Flammability**  
0

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions** Avoid release to the environment. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in metal containers. Corrosives area.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component     | ACGIH TLV                  | OSHA PEL   | NIOSH IDLH   | Mexico OEL (TWA)         |
|---------------|----------------------------|--|--|--------------------------|
| Sulfuric acid | TWA: 0.2 mg/m <sup>3</sup> | (Vacated) TWA: 1 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup> | IDLH: 15 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup> | TWA: 1 mg/m <sup>3</sup> |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures** None under normal use conditions.

**Personal Protective Equipment**

|                                 |   |
|---------------------------------|---|
| <b>Eye/face Protection</b>      | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.   |
| <b>Respiratory Protection</b>   | No protective equipment is needed under normal use conditions.  |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.  |

## 9. Physical and chemical properties

|   |                               |
|---|-------------------------------|
| <b>Physical State</b>                         | Liquid                        |
| <b>Appearance</b>                             | Clear                         |
| <b>Odor</b>                                   | Odorless                      |
| <b>Odor Threshold</b>                         | No information available      |
| <b>pH</b>                                     | 0.3 (1N)                      |
| <b>Melting Point/Range</b>                    | 10 °C / 50 °F                 |
| <b>Boiling Point/Range</b>                    | 290 - 338 °C / 554 - 640.4 °F |
| <b>Flash Point</b>                            | Not applicable                |
| <b>Evaporation Rate</b>                       | Slower than ether             |
| <b>Flammability (solid,gas)</b>               | Not applicable                |
| <b>Flammability or explosive limits</b>       |                               |
| <b>Upper</b>                                  | No data available             |
| <b>Lower</b>                                  | No data available             |
| <b>Vapor Pressure</b>                         | < 0.001 mmHg @ 20 °C          |
| <b>Vapor Density</b>                          | 3.38 (Air = 1.0)              |
| <b>Specific Gravity</b>                       | 1.5                           |
| <b>Solubility</b>                             | Soluble in water              |
| <b>Partition coefficient; n-octanol/water</b> | No data available             |
| <b>Autoignition Temperature</b>               | No information available      |
| <b>Decomposition Temperature</b>              | No information available      |
| <b>Viscosity</b>                              | No information available      |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactive Hazard</b>                  | None known, based on information available                |
| <b>Stability</b>                        | Hygroscopic. Moisture sensitive.                          |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat. Exposure to moisture. |
| <b>Incompatible Materials</b>           | Metals, Reducing agents, Bases, Organic materials         |
| <b>Hazardous Decomposition Products</b> | Sulfur oxides, Hydrogen                                   |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                  |
| <b>Hazardous Reactions</b>              | Contact with metals may evolve flammable hydrogen gas.    |

## 11. Toxicological information

### Acute Toxicity

|                              |   |
|------------------------------|---|
| <b>Product Information</b>   | No acute toxicity information is available for this product                                 |
| <b>Oral LD50</b>             | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.               |
| <b>Dermal LD50</b>           | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.               |
| <b>Vapor LC50</b>            | Category 2. ATE = 0.5 - 2 mg/l. Based on ATE data, the classification criteria are not met. |
| <b>Component Information</b> | ATE > 20 mg/l.  |

| Component     | LD50 Oral          | LD50 Dermal | LC50 Inhalation                          |
|---------------|--------------------|-------------|--|
| Water         | -                  | Not listed  | Not listed                               |
| Sulfuric acid | 2140 mg/kg ( Rat ) | Not listed  | LC50 = 510 mg/m <sup>3</sup> ( Rat ) 2 h |

**Toxicologically Synergistic Products** No information available

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

**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

**Carcinogenicity** Exposure to strong inorganic mists containing sulfuric acid may cause cancer by inhalation. The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component     | CAS-No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|---------------|-----------|------------|------------|------------|------------|------------|
| Water         | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Sulfuric acid | 7664-93-9 | Group 1    | Known      | A2         | X          | A2         |

*IARC: (International Agency for Research on Cancer)*

*IARC: (International Agency for Research on Cancer)*

*Group 1 - Carcinogenic to Humans*

*Group 2A - Probably Carcinogenic to Humans*

*Group 2B - Possibly Carcinogenic to Humans*

*A1 - Known Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Animal Carcinogen*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

**Mutagenic Effects** Mutagenic effects have occurred in experimental animals.

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

| Component     | Freshwater Algae | Freshwater Fish                                  | Microtox | Water Flea        |
|---------------|------------------|--|----------|-------------------|
| Sulfuric acid | -                | LC50: > 500 mg/L, 96h static (Brachydanio rerio) | -        | EC50: 29 mg/L/24h |

**Persistence and Degradability** Miscible with water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

#### Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

UN-No UN2796  
 Proper Shipping Name Sulfuric acid  
 Hazard Class 8  
 Packing Group II

#### TDG

UN-No UN2796  
 Proper Shipping Name SULFURIC ACID  
 Hazard Class 8  
 Packing Group II

#### IATA

UN-No UN2796  
 Proper Shipping Name SULFURIC ACID  
 Hazard Class 8  
 Packing Group II

#### IMDG/IMO

UN-No UN2796  
 Proper Shipping Name SULFURIC ACID  
 Hazard Class 8  
 Packing Group II

### 15. Regulatory information

#### International Inventories

| Component     | TSCA | DSL | NDSL | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Water         | X    | X   | -    | 231-791-2 | -      |     | X     | -    | X    | X     | X    |
| Sulfuric acid | X    | X   | -    | 231-639-5 | -      |     | X     | X    | X    | X     | X    |

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

#### U.S. Federal Regulations

##### TSCA 12(b)

Not applicable

##### SARA 313

| Component     | CAS-No    | Weight % | SARA 313 - Threshold Values % |
|---------------|-----------|----------|-------------------------------|
| Sulfuric acid | 7664-93-9 | 10 - 15  | 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)**

| Component     | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|---------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Sulfuric acid | X                          | 1000 lb                     | -                      | -                         |

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration  
Not applicable

**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)

| Component     | Hazardous Substances RQs | CERCLA EHS RQs |
|---------------|--------------------------|----------------|
| Sulfuric acid | 1000 lb                  | 1000 lb        |

California Proposition 65 This product contains the following proposition 65 chemicals

| Component     | CAS-No    | California Prop. 65 | Prop 65 NSRL | Category   |
|---------------|-----------|---------------------|--------------|------------|
| Sulfuric acid | 7664-93-9 | Carcinogen          | -            | Carcinogen |

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

| Component     | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Water         | -             | -          | X            | -        | -            |
| Sulfuric acid | X             | X          | X            | X        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

**16. Other information**

Prepared By EZKEM  
Email: info@ezkem.com

Creation Date 09-AUG-2017

Revision Date

Print Date

Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**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 SDS**