



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 01/26/2015

Version 1.3

## SECTION 1. Identification

### Product identifier

Product number 109981  
Product name Sulfuric acid for 1000 ml,  $c(\text{H}_2\text{SO}_4) = 0.5 \text{ mol/l}$  (1 N) Titrisol®

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses Reagent for analysis

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

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,  
United States of America | General Inquiries: +1-978-715-4321 |  
Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Corrosive to Metals, Category 1, H290  
Skin corrosion, Category 1A, H314  
Serious eye damage, Category 1, H318  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



Signal Word  
Danger

#### Hazard Statements

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

#### Precautionary Statements

P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
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.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
P405 Store locked up.  
P406 Store in corrosive resistant stainless steel container with a resistant inliner.  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature	Aqueous solution
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### Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

*sulphuric acid ( $\geq 30 \% - < 50 \%$ )*

7664-93-9

Exact percentages are being withheld as a trade secret.

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## SECTION 4. First aid measures

### Description of first-aid measures

*General advice*

First aider needs to protect himself.

*Inhalation*

After inhalation: fresh air. Call in physician.

*Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

*Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

*Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

### Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, Nausea, Vomiting, Diarrhea, pain, Risk of blindness!

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

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Sulfur oxides

### Advice for firefighters

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent and neutralizing material (e.g. Chemisorb® H<sup>+</sup>, Art. No. 101595).

Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

### Conditions for safe storage, including any incompatibilities

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## *Requirements for storage areas and containers*

No metal or light-weight-metal containers.

Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>sulphuric acid 7664-93-9</i>			
ACGIH	Time Weighted Average (TWA):	0.2 mg/m <sup>3</sup>	Form of exposure: Thoracic fraction.
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	1 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Change contaminated clothing and immerse in water. Preventive skin protection Wash hands and face after working with substance.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### *Other protective equipment:*

Acid-resistant protective clothing.

#### *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless

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Odor	odorless
Odor Threshold	Not applicable
pH	at 68 °F (20 °C) strongly acid
Melting point	No information available.
Boiling point/boiling range	ca. 275 °F (135 °C)
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	1.29 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble, (caution ! development of heat)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	ca. 640 °F (338 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	Oxidizing potential
Corrosion	May be corrosive to metals.

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**SECTION 10. Stability and reactivity****Reactivity**

strong oxidizing agent

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### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Violent reactions possible with:

Water, Alkali metals, alkali compounds, Ammonia, Aldehydes, acetonitrile, Alkaline earth metals, alkalines, Acids, alkaline earth compounds, Metals, metal alloys, Oxides of phosphorus, phosphorus, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvent, acetylidene, Nitriles, organic nitro compounds, anilines, Peroxides, picrates, nitrides, lithium silicide, iron(III) compounds, bromates, chlorates, Amines, perchlorates, hydrogen peroxide

### Conditions to avoid

Strong heating (decomposition).

### Incompatible materials

animal/vegetable tissues, Metals  
Contact with metals liberates hydrogen gas.

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Eye contact, Skin contact

#### *Target Organs*

Eyes

Skin

Respiratory system

teeth

Mucous membranes

#### *Skin irritation*

Mixture causes severe burns.

#### *Eye irritation*

Mixture causes serious eye damage. Risk of blindness!

#### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

#### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

### Carcinogenicity

IARC

Group 1: Carcinogenic to humans

sulphuric acid

7664-93-9

OSHA

No ingredient of this product present at levels greater than or

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equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP Known carcinogen.

ACGIH sulphuric acid 7664-93-9

A2: Suspected human carcinogen

sulphuric acid 7664-93-9

### Further information

After inhalation of aerosols: damage to the affected mucous membranes. After skin contact: severe burns with formation of scabs. After eye contact: burns, corneal lesions. After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhea. After a latency period of several weeks possibly pyloric stenosis.

Handle in accordance with good industrial hygiene and safety practice.

### Ingredients

#### *sulphuric acid*

*Germ cell mutagenicity*  
*Genotoxicity in vitro*  
Ames test  
Salmonella typhimurium  
Result: negative  
(HSDB)

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## SECTION 12. Ecological information

### Ecotoxicity

No information available.

### Persistence and degradability

No information available.

### Bioaccumulative potential

No information available.

### Mobility in soil

No information available.

#### *Additional ecological information*

Forms corrosive mixtures with water even if diluted. Harmful effect due to pH shift. Endangers drinking-water supplies if allowed to enter soil or water.  
Discharge into the environment must be avoided.

### Ingredients

#### *sulphuric acid*

*Toxicity to daphnia and other aquatic invertebrates*  
static test EC50 Daphnia magna (Water flea): > 100 mg/l; 48 h  
OECD Test Guideline 202

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

## SECTION 14. Transport information

### Land transport (DOT)

UN number UN 2796  
Proper shipping name SULPHURIC ACID  
Class 8  
Packing group II  
Environmentally hazardous --

### Air transport (IATA)

UN number UN 2796  
Proper shipping name SULPHURIC ACID  
Class 8  
Packing group II  
Environmentally hazardous --  
Special precautions for user no

### Sea transport (IMDG)

UN number UN 2796  
Proper shipping name SULPHURIC ACID  
Class 8  
Packing group II  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-A S-B

## SECTION 15. Regulatory information

### United States of America

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

#### Ingredients

sulphuric acid	7664-93-9	38 %
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#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

#### Ingredients

sulphuric acid	7664-93-9
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## DEA List I

Not listed

## DEA List II

Listed

### *Ingredients*

sulphuric acid

7664-93-9

## US State Regulations

### Massachusetts Right To Know

#### *Ingredients*

sulphuric acid

### Pennsylvania Right To Know

#### *Ingredients*

sulphuric acid

### New Jersey Right To Know

#### *Ingredients*

sulphuric acid

### California Prop 65 Components

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

#### *Ingredients*

sulphuric acid

## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.  
DSL: All components of this product are on the Canadian DSL.  
KOREA: Not in compliance with the inventory

## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Labeling

#### *Hazard pictograms*



#### *Signal Word*

Danger

#### *Hazard Statements*

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

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### *Precautionary Statements*

#### Prevention

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

#### Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

### **Full text of H-Statements referred to under sections 2 and 3.**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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