

SAFETY DATA SHEET

1. Identification

Product identifier: Sulfuric Acid

Other means of identification

Product No.: 9661, 3780, 9704, 9682, V648, V225, V186, V008, 6902, 2900, 2879, 2878, 2877, 2874, 6163, H996, H976, 5859, 2876, 5815, 5802, 9691, 9690, 9684, 9681, 9675, 9674, 9673, 9671, 5557, 5374, 21208, 21201

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Avantor Performance Materials, Inc.
3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone:

Customer Service: 855-282-6867

Fax:

610-573-2610

Contact Person:

Environmental Health & Safety

E-mail:

info@avantormaterials.com

Emergency telephone number: CHEMTREC: 1-800-424-9300 within US and Canada

CHEMTREC: 1-703-527-3887 outside US and Canada

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Corrosive to metals Category 1

Health Hazards

Skin Corrosion/Irritation Category 1
Serious Eye Damage/Eye Irritation Category 1
Carcinogenicity Category 1A
Specific Target Organ Toxicity - Single Exposure Category 3

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Label Elements

Hazard Symbol:



Signal Word:	Danger
Hazard Statement:	May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation. May cause cancer if inhaled. Harmful to aquatic life.
Target Organs:	Respiratory tract irritation.
Precautionary Statement	
Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Wash thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response:	IF exposed or concerned: Get medical advice/attention. Absorb spillage to prevent material damage. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Storage:	Store locked up. Store in corrosive resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed.
Disposal:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	90,5 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	100 %

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
SULFURIC ACID		7664-93-9	90 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information:	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion:	Call a physician or poison control center immediately. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation:	Move to fresh air. Call a physician or poison control center immediately. Apply artificial respiration if victim is not breathing. If breathing is difficult, give oxygen.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Corrosive to skin and eyes.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted. In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Foam, carbon dioxide or dry powder.

Unsuitable extinguishing media: Do not use water as an extinguisher.

Specific hazards arising from the chemical: Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Fight fire from a protected location. Use water SPRAY only to cool containers! Do not put water on leaked material. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up:

Neutralize spill area and washings with soda ash or lime. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures:

Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental Precautions:

Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:

Do not get in eyes, on skin, on clothing. Do not taste or swallow. Wash hands thoroughly after handling. Do not eat, drink or smoke when using the product. Use caution when adding this material to water. Add material slowly when mixing with water. Do not add water to the material; instead, add the material to the water. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities:

Do not store in metal containers. Keep in a cool, well-ventilated place. Keep container tightly closed. Store in a dry place.

8. Exposure controls/personal protection

Control Parameters
Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
SULFURIC ACID	STEL	3 mg/m ³	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	1 mg/m ³	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
SULFURIC ACID - Thoracic fraction.	TWA	0,2 mg/m ³	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
SULFURIC ACID - Thoracic fraction.	TWAEV	0,2 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
SULFURIC ACID - Thoracic fraction.	15 MIN ACL	0,6 mg/m ³	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	8 HR ACL	0,2 mg/m ³	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)

SULFURIC ACID	TWA	1 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	3 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
SULFURIC ACID - Mist.	TWA	0,2 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)
SULFURIC ACID - Thoracic fraction.	TWA	0,2 mg/m ³	US. ACGIH Threshold Limit Values (2011)

Appropriate Engineering Controls

No data available.

Individual protection measures, such as personal protective equipment

General information:	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. An eye wash and safety shower must be available in the immediate work area.
Eye/face protection:	Wear safety glasses with side shields (or goggles) and a face shield.
Skin Protection	
Hand Protection:	Chemical resistant gloves
Skin protection:	Wear suitable protective clothing.
Respiratory Protection:	In case of inadequate ventilation use suitable respirator. Chemical respirator with acid gas cartridge.
Hygiene measures:	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Odorless
Odor threshold:	No data available.
pH:	0,3 (1 N aqueous solution)
Melting point/freezing point:	3 °C
Initial boiling point and boiling range:	337 °C
Flash Point:	not applicable
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	1,84 (20 °C)
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	Reacts violently with strong alkaline substances.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur. Material reacts with water.
Conditions to avoid:	Moisture. Heat. Contact with incompatible materials.
Incompatible Materials:	Water. Cyanides. Strong oxidizing agents. Strong reducing agents. Metals. Halogens. Organic compounds. Potassium.
Hazardous Decomposition Products:	Oxides of sulfur.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May cause burns of the gastrointestinal tract if swallowed.
Inhalation:	May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
Skin Contact:	Causes severe skin burns.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	ATEmix : 2.183,67 mg/kg
Dermal Product:	No data available.
Inhalation Product:	No data available.

Specified substance(s):

SULFURIC ACID

LC 50 (Guinea pig, 8 h): 0,03 mg/l
LC 50 (Rat, 4 h): 0,375 mg/l

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: Causes severe skin burns.

Serious Eye Damage/Eye Irritation
Product: No data available.

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

SULFURIC ACID Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

SULFURIC ACID Known To Be Human Carcinogen.

ACGIH Carcinogens:

SULFURIC ACID Group A2: Suspected human carcinogen.

Germ Cell Mutagenicity
In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: Respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure
Product: None known.

Aspiration Hazard
Product: Not classified

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

SULFURIC ACID
LC 50 (Starry, european flounder (*Platichthys flesus*), 48 h): 100 - 330 mg/l Mortality
LC 50 (Western mosquitofish (*Gambusia affinis*), 96 h): 42 mg/l Mortality
LC 50 (Goldfish (*Carassius auratus*), 96 h): 17 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

SULFURIC ACID
LC 50 (Common shrimp, sand shrimp (*Crangon crangon*), 48 h): 70 - 80 mg/l Mortality
LC 50 (Aesop shrimp (*Pandalus montagui*), 48 h): 42,5 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in Soil:

The product is water soluble and may spread in water systems.

Other Adverse Effects:

The product contains a substance which is harmful to aquatic organisms. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

13. Disposal considerations

Disposal instructions:

Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

UN Number	UN1830
Proper Shipping Name	SULPHURIC ACID
Class	8
Packing Group	II
Label(s)	8
Subsidiary risk label	—

IMDG

UN Number:	UN 1830
UN Proper Shipping Name:	SULPHURIC ACID (WITH MORE THAN 51% ACID)
Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	—

IATA

UN Number:	UN 1830
Proper Shipping Name:	Sulphuric acid
Transport Hazard Class(es):	
Class:	8
Label(s):	8
Marine Pollutant:	No
Packing Group:	II
Special precautions for user:	—

15. Regulatory information

Canada Federal Regulations
List of Toxic Substances (CEPA, Schedule 1)

Export Control List (CEPA 1999, Schedule 3)

National Pollutant Release Inventory (NPRI)

Greenhouse Gases

Controlled Drugs and Substances Act

Precursor Control Regulations

International regulations

Montreal protocol

not applicable

Stockholm convention

not applicable

Rotterdam convention

not applicable

Kyoto protocol

not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Switzerland Consolidated Inventory:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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

Issue Date:	21.12.2015
Revision Date:	No data available.
Version #:	2.0
Further Information:	No data available.

Disclaimer:

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