CODE: 5300

Sulfuric Acid ACS

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 09/26/2016 Revision date: 28/09/2018 Version No.: 2.0

FCAT# 351297212

SECTION 1: Identification

1.1. Product identifier

Product form	:	Substance
Trade name	:	Sulfuric Acid ACS
Chemical name	:	Sulfuric Acid , Oil of Vitrol
Type of product	:	Pure substance
CAS No	:	7664-93-9
Product code	:	5300
Formula	:	H2SO4
Product group	:	Trade product

1.2. Recommended use and restrictions on use

Recommended uses and restrictions	:	Fertilizers Explosives Textile dyes, finishing and impregnating products; including bleaches and other processing aids

1.3. Supplier

Regent Chemical Products Ltd.
600 Avenue Delmar
H9R 4A8 Pointe Claire
T 514-630-3309 - F 514-630-5951
info@regentchem.com - http://www.regentchem.com/

Distributed by:
fisher scientific
part of Thermo Fisher Scientific
112 Colonnade Road, Ottawa ON, K2E 7L6
1-800-234-7437

1.4. Emergency telephone number

Emergency number : Terrapure environmental: 1-800-567-7455(24/24)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-CA)

Skin corrosion/irritation, Category 1A	H314
Serious eye damage/eye irritation, Category 1	H318

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :

GHS05

Signal word (GHS-CA) : Danger

Hazard statements (GHS-CA) :
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary statements (GHS-CA) :
P260 - Do not breathe gas/mist/vapours/spray
P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water
P304+P340 - IF INHALED: Remove person to fresh air and keep 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
P321 - Specific treatment
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents / container to a hazardous or special waste collection point in

accordance with municipal, provincial and federal regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Chemical name/Synonyms	Product identifier	%wt/wt	Classification (GHS-CA)
sulfuric acid	Sulfuric Acid , Oil of Vitrol	(CAS No) 7664-93-9	93.0-99.5	Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Do not give chemical antidote. Immediately consult a doctor/medical service. Call Poison Information Centre. Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Doctor: gastric lavage.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries after inhalation : Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the upper respiratory tract. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. Risk of pneumonia. Risk of lung oedema. Respiratory difficulties.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Corrosion of the eye tissue. Permanent eye damage.

Symptoms/injuries after ingestion : Nausea. Abdominal pain. Blood in stool. Blood in vomit. Burns to the gastric/intestinal mucosa. AFTER ABSORPTION OF HIGH QUANTITIES: Shock.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Itching. Skin rash/inflammation. Affection/discolouration of the teeth. Inflammation/damage of the eye tissue.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide. Use an extinguishing agent appropriate to the fire and / or surrounding material. Do not use water. The acid reacts violently with the water and can splash the staff. Wear a self-contained breathing apparatus with a NIOSH approved full face shield. Wear monocoque goggles against chemicals if there is no full face shield. Wear full protective clothing.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : Water.

5.3. Specific hazards arising from the hazardous product

Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. When cooling/extinguishing: no water in the substance. Dilute toxic gases with water spray.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.2. Methods and materials for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Heat exposure: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.

Methods for cleaning up : Neutralize spill with lime, sodium bicarbonate, soda (sodium carbonate) or soda ash. Neutralized substance: shovel into closing drums. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Never add water to this product. Never dilute by pouring water to the acid. Always add the acid to the water. Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Storage area : Store in a dry area. Ventilation at floor level. Keep locked up. Protect against frost. Store at ambient temperature. Provide for a tub to collect spills. Unauthorized persons are not admitted. Under a shelter/in the open. Aboveground. Keep only in the original container. Store only in a limited quantity. Meet the legal requirements.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. reducing agents. (strong) bases. metals. cellulosic materials. organic materials. oxidizing agents. alcohols. amines. water/moisture.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: carbon steel. polyethylene. polypropylene. glass. stoneware/porcelain. MATERIAL TO AVOID: monel steel. lead. aluminium. iron. copper. zinc. nickel. bronze.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sulfuric Acid ACS (7664-93-9)		
USA - ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³
USA - ACGIH	Remark (ACGIH)	Pulm func
USA - OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Materials for protective clothing : GIVE GOOD RESISTANCE: No data available. GIVE POOR RESISTANCE: natural rubber. nitrile rubber. chloroprene rubber. leather.

Hand protection : Gloves.

Eye protection : Face shield. Safety glasses.

Skin and body protection : Corrosion-proof clothing.

Respiratory protection : Gas mask with filter type E at conc. in air > exposure limit. Dust/aerosol mask with filter type P3.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid.
Molecular mass	:	98.08 g/mol
Colour	:	Colourless to brown.
Odour	:	Odourless.
Odour threshold	:	> 1 mg/m³
pH	:	< 1,0
pH solution	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	10.4 - 10.9 °C (-1.11 - 3.0 °C; -13.89 - -10 °C; 7.56 °C)
Freezing point	:	No data available
Boiling point	:	290 °C (310 - 335 °C; 330 °C)
Flash point	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	0.06 hPa (20 °C)
Vapour pressure at 50 °C	:	No data available
Relative vapour density at 20 °C	:	3.4
Relative density	:	1.8305 (20 °C; 1.8361; 20 °C; 1.8355; 20 °C; 1.8144; 20 °C)
Relative density of saturated gas/air mixture	:	No data available
Density	:	1.8305 kg/m³ (20 °C)
Relative gas density	:	No data available
Solubility	:	Exothermically soluble in water. Soluble in ethanol. Water: miscible
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	Not determined
Viscosity, dynamic	:	0.0225 Pa.s (20 °C)
Viscosity, kinematic (calculated value) (40 °C)	:	12.29172357 mm²/s
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available
Lower explosive limit (LEL)	:	No data available
Upper explosive limit (UEL)	:	No data available

9.2. Other information

VOC content	:	0 %
Other properties	:	Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	:	Violent exothermic reaction with water (moisture): release of corrosive gases/vapours. On burning: release of toxic and corrosive gases/vapours (sulphur oxides). Reacts with many compounds: (increased) risk of fire/explosion. Reacts exothermically with organic material: risk of spontaneous ignition. Reacts violently with combustible materials: (increased) risk of fire/explosion. Reacts violently with (some) bases: heat release resulting in increased fire or explosion risk. Reacts with (strong) reducers: (increased) risk of fire/explosion. Aqueous solution reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).
Chemical stability	:	Unstable on exposure to moisture.

Conditions to avoid	:	Condition to avoid: High temperatures, sparks, open flames and all other sources of ignition. Avoid contact with water.
Incompatible materials	:	Violently reactive with sodium chlorite, reducing agents, strong bases, combustibles, metals, alkali metal and their hydroxides, organic materials, aluminium and its alloys, copper and its alloys, cast iron, mild steel, titanium. Attacks some types of rubber, plastics and coatings. React with most metals to produce hydrogen gas which could make an explosive mixture with air.
Hazardous decomposition products	:	Concentrated sulfuric acid can ignite combustible materials (ex: paper) on contact. Thermal decomposition products are toxic and may include sulfur oxides, carbon monoxide and irritating gases. Toxic fumes of oxides of sulfur when heated to decomposition. Will react with water or stream to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Oral: Not classified.
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Sulfuric Acid ACS (7664-93-9)	
LD50 oral rat	2140 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
ATE CA (oral)	2140.00000000 mg/kg bodyweight

Skin corrosion/irritation	:	Causes severe skin burns and eye damage.
Serious eye damage/irritation	:	Serious eye damage, category 1, implicit
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
IARC group	:	1 - Carcinogenic to humans1 - Carcinogenic to humans
National Toxicity Program (NTP) Status	:	2 - Known Human Carcinogens
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

Sulfuric Acid ACS (7664-93-9)	
Viscosity, kinematic (calculated value) (40 °C)	12.29172357 mm²/s

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	Classification concerning the environment: not applicable.
Ecology - air	:	Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	:	Ground water pollutant. Maximum concentration in drinking water: 250 mg/l (sulfate) (Directive 98/83/EC). Harmful to fishes. Slightly harmful to invertebrates (Daphnia). Slightly harmful to algae. pH shift. Not harmful to activated sludge.

Sulfuric Acid ACS (7664-93-9)	
LC50 fish 1	> mg/l >16 - <28,LC50; 96 h; Lepomis macrochirus; Static system; Fresh water
EC50 Daphnia 1	> 100 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)

12.2. Persistence and degradability

Sulfuric Acid ACS (7664-93-9)	
Persistence and degradability	Biodegradability: not applicable. Hydrolysis in water. Biodegradability in soil: not applicable.
Biochemical oxygen demand (BOD)	Not applicable

Sulfuric Acid ACS (7664-93-9)	
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

12.3. Bioaccumulative potential

Sulfuric Acid ACS (7664-93-9)	
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove for physico-chemical/biological treatment. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment. Use appropriate containment to avoid environmental contamination.

Additional information : Dispose of contents / container to a hazardous or special waste collection point in accordance with municipal, provincial and federal regulations.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : UN1830

Packing group : II - Medium Danger

TDG Primary Hazard Classes : 8 - Class 8 - Corrosives

Transport document description : UN1830 SULFURIC ACID (with more than 51 per cent acid), 8, II

TDG Proper Shipping Name : SULFURIC ACID (with more than 51 per cent acid)

Hazard labels (TDG) : 8 - Corrosive substances

ERAP Index : 3 000

Explosive Limit and Limited Quantity Index : 1 L

Excepted quantities (TDG) : E2

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 1 L

14.2. Transport information/DOT

DOT

UN-No.(DOT) : UN1830

Packing group (DOT) : II - Medium Danger

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Transport document description : UN1830 SULFURIC ACID (with more than 51 per cent acid), 8, II

Dangerous for the environment : No

Other information : No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1830

Transport document description	:	UN1830 SULFURIC ACID (with more than 51 per cent acid), 8, II
Class (IMDG)	:	8 - Corrosive substances
EmS-No. (1)	:	F-A
EmS-No. (2)	:	S-B

IATA

UN-No. (IATA)	:	1830
Transport document description	:	UN1830 SULFURIC ACID (with more than 51 per cent acid), 8, II
Class (IATA)	:	8 - Corrosives
Packing group (IATA)	:	II - Medium Danger

SECTION 15: Regulatory information

15.1. National regulations

No additional information available

15.2. International regulations

Sulfuric Acid ACS (7664-93-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: Other information

Date of issue	:	26/09/2016
Revision date	:	28/09/2018

Full text of H-statements:

H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

SDS CA Regent

IMPORTANT: The information presented herein is believed to be accurate and is offered only as a guide. Users should make their own tests to determine the suitability of these products for their own particular purposes. Users assume all risk of use, storage and handling of the product. No warranty, express or implied, is made including, but not limited to, implied warranties of merchantability and fitness for a particular purpose. Nothing contained herein shall be construed as a license to operate under, or recommendation to infringe any patents