

SECTION 1: Identification

1.1. Product identifier

Trade name	: SULFURIC ACID 98%
EC-No.	: 231-639-5
EC Index-No.	: 016-020-00-8
CAS-No.	: 7664-93-9
UN-No. (ADR)	: 1830
Product code	: 119340xxx, 119345xxx, 119350xxx
Formula	: H ₂ SO ₄

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses and restrictions	: For laboratory use only
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1.3. Supplier's details

Labchem (Pty)Ltd
 6 Wakefield Road
 Founders Hill
 1609 Johannesburg - South Africa
 T +27 11 452 1116 - F +27 86 588 0293
techlab@labchem.co.za - www.labchem.co.za

1.4. Emergency telephone number

Emergency number	: +27 11 452 1116
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Acute toxicity (oral), Category 5	H303
Skin corrosion/irritation, Category 1A	H314
Hazardous to the aquatic environment — Acute Hazard, Category 3	H402
Full text of H statements : see section 16	

2.2. Label elements

Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :



GHS05

Signal word (GHS-ZA)	: Danger
Hazard statements (GHS-ZA)	: H303 - May be harmful if swallowed H314 - Causes severe skin burns and eye damage. H402 - Harmful to aquatic life
Precautionary statements (GHS-ZA)	: P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P264 - Wash hands, forearms and face thoroughly after handling. P273 - Avoid release to the environment. 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/shower. 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. P312 - Call a POISON CENTER or doctor if you feel unwell. P321 - Specific treatment (see supplemental first aid instruction on this label). P363 - Wash contaminated clothing before reuse. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Adverse physicochemical, human health and	: Harmful if swallowed, Causes severe skin burns and eye damage, Harmful to aquatic life
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SULFURIC ACID 98%

Safety Data Sheet

According to SANS 10234:2008 and SANS 11014:2010

environmental effects

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance identification codes: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
sulfuric acid (Main constituent)	(CAS-No.) 7664-93-9	≥ 98	Acute Tox. 5 (Oral), H303 Skin Corr. 1A, H314 Aquatic Acute 3, H402

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 general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. 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. Do not apply (chemical) neutralizing agents without medical advice. 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. Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not apply (chemical) neutralizing agents without medical advice. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.html). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Dry/sore throat. Coughing. 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/effects after skin contact	: Caustic burns/corrosion of the skin. Burns.
Symptoms/effects after eye contact	: Corrosion of the eye tissue. Permanent eye damage. Serious damage to eyes.
Symptoms/effects after ingestion	: Nausea. Abdominal pain. Blood in stool. Blood in vomit. Burns to the gastric/intestinal mucosa. AFTER INGESTION OF HIGH QUANTITIES: Shock. Burns.
Chronic symptoms	: Red skin. Dry skin. Itching. Skin rash/inflammation. Affection/discolouration of the teeth. Inflammation/damage of the eye tissue.
Potential adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Causes severe skin burns. Causes serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant); after consulting specialist. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Quick-acting class B foam extinguisher. Water.

5.2. Special hazards arising from the substance or mixture

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".

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According to SANS 10234:2008 and SANS 11014:2010

Hazardous decomposition products in case of fire : On burning: release of toxic and corrosive gases/vapours (sulphur oxides).

5.3. Advice for firefighters

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.

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. Take account of toxic/corrosive precipitation water.

Protection during firefighting : Heat/fire exposure: compressed air apparatus (EN 136 + EN 137). Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.1.1. For non-emergency personnel

Protective equipment : Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605). Large spills/in enclosed spaces: compressed air apparatus (EN 136 + EN 137). Large spills/in enclosed spaces: gas-tight suit (EN 943).

Emergency procedures : Ventilate spillage area. Mark the danger area. No naked flames. Keep containers closed. Avoid ingress of water in the containers. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation. On contact with moisture/water: keep upwind. On contact with moisture/water: consider evacuation. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable 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. Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Liquid spill: neutralize with lime sodium bicarbonate soda (sodium carbonate) or soda ash. Neutralized substance: shovel into closing drums. 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.

Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. 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. Avoid contact of substance with water. Keep container tightly closed. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Wear personal protective equipment.

Hygiene measures : Observe very strict hygiene - avoid contact. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

Storage area : Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Protect against frost. Store at ambient temperature. Keep out of direct sunlight. 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.

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

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

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According to SANS 10234:2008 and SANS 11014:2010

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. stainless 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 98% (7664-93-9)	
South Africa - Occupational Exposure Limits (Recommended Limits)	
Local name	Sulphuric acid
OEL TWA (mg/m ³)	1 mg/m ³
Regulatory reference	Government Notice. R: 1179

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: polyethylene. tetrafluoroethylene. GIVE LESS RESISTANCE: neoprene. PVC. viton. GIVE POOR RESISTANCE: natural rubber. nitrile rubber. PVA
Hand protection	: Gloves
Eye protection	: Face shield (EN 166)
Skin and body protection	: Corrosion-proof clothing (EN 14605)
Respiratory protection	: Full face mask with filter type E at conc. in air > exposure limit

Personal protective equipment symbol(s):



8.4. Exposure limit values for the other components

No additional information available

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	: Pure substance: colourless. Unpurified: yellow to brown.
Odour	: Almost odourless.
Odour threshold	: No data available
pH	: No data available in the literature
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: 3 °C (Equivalent or similar to OECD 102)
Freezing point	: No data available
Boiling point	: 310 – 335 °C (1013 hPa, Equivalent or similar to OECD 103)
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 340 °C
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 0.485 hPa (20 °C, 75 %, Equivalent or similar to OECD 104)
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: 3.4
Relative density	: 1.84 (20 °C, Equivalent or similar to OECD 109)

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According to SANS 10234:2008 and SANS 11014:2010

Relative density of saturated gas/air mixture	: No data available
Density	: 1840 kg/m ³ (20 °C, Equivalent or similar to OECD 109)
Relative gas density	: No data available
Solubility	: Exothermically soluble in water. Soluble in ethanol. Water: miscible, EU Method A.6: Water solubility Ethanol: soluble
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: 12.228 mm ² /s
Viscosity, dynamic	: 22.5 mPa·s (20 °C, 95 %)
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

Minimum ignition energy	: Not applicable
Specific conductivity	: 100000000000 pS/m (25 °C)
VOC content	: Not applicable (inorganic)
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile. Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

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. Violent exothermic reaction with water (moisture): release of corrosive gases/vapours.

10.2. Chemical stability

Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Aqueous solution reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: May be harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

SULFURIC ACID 98% (7664-93-9)	
LD50 oral rat	2140 mg/kg bodyweight (Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 inhalation rat (mg/l)	0,38 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (mixture of vapour and aerosol), 14 day(s))

Skin corrosion/irritation	: Causes severe skin burns. pH: No data available in the literature
Serious eye damage/irritation	: Assumed to cause serious eye damage pH: No data available in the literature
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

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According to SANS 10234:2008 and SANS 11014:2010

Aspiration hazard : Not classified

SULFURIC ACID 98% (7664-93-9)	
Viscosity, kinematic	12.228 mm ² /s

Potential adverse human health effects and symptoms : Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Causes severe skin burns. Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008. Harmful to aquatic life.

Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Slightly harmful to crustacea. Harmful to fishes. Groundwater pollutant. Slightly harmful to algae. pH shift.

Hazardous to the aquatic environment, short-term (acute) : Harmful to aquatic life.

Hazardous to the aquatic environment, long-term (chronic) : Not classified

SULFURIC ACID 98% (7664-93-9)	
LC50 fish 1	16 – 28 mg/l (96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Lethal)
EC50 Daphnia 1	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h algae (1)	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Growth rate)

12.2. Persistence and degradability

SULFURIC ACID 98% (7664-93-9)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

SULFURIC ACID 98% (7664-93-9)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

SULFURIC ACID 98% (7664-93-9)	
Mobility in soil	No additional information available
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

Ozone : Not classified

Other adverse effects : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. 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.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.




SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SULFURIC ACID 98%

Safety Data Sheet

According to SANS 10234:2008 and SANS 11014:2010

SANS	IMDG	IATA
14.1. UN number		
1830	1830	1830
14.2. Proper Shipping Name		
SULPHURIC ACID	SULPHURIC ACID	Sulphuric acid
14.3. Transport hazard class(es)		
8	8	8
		 Not applicable
14.4. Packing group		
II	II	II
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No :	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

- SANS

Transport regulations (UN)	: Subject to the provisions
Limited quantities (SANS)	: 1 L
Limited quantities (SANS)	: 1 L
Packagings, large packagings and IBCs	: P001, IBC02
Packing instructions (SANS)	
Portable tank and bulk containers instructions (SANS)	: T8
Portable tank and bulk container special provisions (SANS)	: TP2

- IMDG

Transport regulations (IMDG)	: Subject to the provisions
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
IBC special provisions (IMDG)	: B20
Tank instructions (IMDG)	: T8
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES
Stowage category (IMDG)	: C
Properties and observations (IMDG)	: Colourless, oily liquid, mixture over 1.41 up to 1.84 relative density. In the presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.

- IATA

Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
ERG code (IATA)	: 8L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SULFURIC ACID 98%

Safety Data Sheet

According to SANS 10234:2008 and SANS 11014:2010

SECTION 15: Regulatory information

15.1. Safety, health, and environmental national regulations specific for the product

Regulatory reference : SANS 10234:2008; SANS 11014:2010; SANS 10228:2012;SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996.

SECTION 16: Other information

Issue date : 07/02/2020

Revision date : 07/02/2025

Full text of H-statements:

H303	May be harmful if swallowed
H314	Causes severe skin burns and eye damage.
H402	Harmful to aquatic life

SDS South Africa

The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.