

SAFETY DATA SHEET



Revision date: 31-Jan-2024

Revision Number 5

Section 1: Identification

Product identifier

Product Name SULPHURIC ACID, SPENT

Product Code(s) 000034270502

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended use Adjustment of pH in industrial processes.

Uses advised against No information available.

Illicit Drug Precursors/Reagents This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling, and storing these substances.

Chemicals of Security Concern This product contains one or more substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Details of manufacturer or importer

Supplier

Ixom Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

For further information, please contact

Contact Point Product Safety Department

Emergency telephone number

Emergency telephone number 1 800 033 111 (ALL HOURS)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

Section 2: Hazard identification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

GHS Classification

Corrosive to metals	Category 1
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elementsCorrosion
Exclamation mark**Signal word**
DANGER**Hazard statements**H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation**Precautionary Statements - Prevention**Keep only in original packaging.
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.
Wear protective gloves/clothing and eye/face protection.**Precautionary Statements - Response**Specific treatment (see .? on this label).
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Absorb spillage to prevent material damage.**Precautionary Statements - Storage**Store locked up.
Store in corrosion resistant container with a resistant inner liner.**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Other hazards which do not result in classification

No information available.

Section 3: Composition and information on ingredients

Chemical name	CAS No.	Weight-%
Sulfuric acid	7664-93-9	>60%
Water	7732-18-5	10-29%
Hydrochloric acid	7647-01-0	trace
Chlorine	7782-50-5	trace

Section 4: First aid measures**Description of first aid measures****General advice**

For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Immediate medical attention is required. Show this

safety data sheet to the doctor in attendance.

Inhalation	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Immediate medical attention is required.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
Ingestion	Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms	Irritation/Corrosion. May cause redness and tearing of the eyes. Erythema (skin redness). Coughing and/ or wheezing. Difficulty in breathing.
Effects of Exposure	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically. Can cause corneal burns. Probable mucosal damage may contraindicate the use of gastric lavage.
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Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Dry chemical, CO2, water spray or regular foam.

Large Fire

Unsuitable extinguishing media

Specific hazards arising from the chemical

Specific hazards arising from the chemical Corrosive hazard. Wear protective gloves/clothing and eye/face protection. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code 2W.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Do not touch or walk through spilled material. Evacuate personnel to safe areas. Ensure adequate ventilation. Stop leak if you can do it without risk. Use personal protective equipment as required. Wash thoroughly after handling.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After cleaning, flush away traces with water.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage

Precautions for safe handling

Advice on safe handling Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. KEEP OUT OF REACH OF CHILDREN AND PETS. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. Wash thoroughly after handling. Use personal protection equipment. Always add the acid to water, never the reverse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep dry - reacts with water, may lead to drum rupture. Store away from foodstuffs. Keep out of the reach of children. Keep container closed when not in use.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Incompatible materials Metals. Strong alkalis. Reducing agent. Combustible material.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):.

Chemical name	Australia	New Zealand	ACGIH TLV
Sulfuric acid 7664-93-9	TWA: 1 mg/m ³ STEL: 3 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.2 mg/m ³ thoracic particulate matter
Hydrochloric acid 7647-01-0	Peak: 5 ppm Peak: 7.5 mg/m ³	Ceiling: 5 ppm Ceiling: 7.5 mg/m ³	Ceiling: 2 ppm
Chlorine 7782-50-5	Peak: 1 ppm Peak: 3 mg/m ³	TWA: 0.5 ppm TWA: 1.5 mg/m ³ STEL: 1 ppm STEL: 2.9 mg/m ³	TWA: 0.1 ppm STEL: 0.4 ppm

Chemical name	European Union	United Kingdom	Germany DFG
Sulfuric acid 7664-93-9	TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.15 mg/m ³	TWA: 0.1 mg/m ³ Peak: 0.1 mg/m ³
Hydrochloric acid	TWA: 5 ppm	TWA: 1 ppm	TWA: 2 ppm

7647-01-0	TWA: 8 mg/m ³ STEL: 10 ppm STEL: 15 mg/m ³	TWA: 2 mg/m ³ STEL: 5 ppm STEL: 8 mg/m ³	TWA: 3.0 mg/m ³ Peak: 4 ppm Peak: 6 mg/m ³
Chlorine 7782-50-5	-	STEL: 0.5 ppm STEL: 1.5 mg/m ³	TWA: 0.5 ppm TWA: 1.5 mg/m ³ Peak: 0.5 ppm Peak: 1.5 mg/m ³

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Ensure that eyewash stations and safety showers are close to the workstation location. Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.



Eye/face protection Tight sealing safety goggles. If splashes are likely to occur: Face protection shield.

Skin and body protection Overalls. Boots. Wear suitable protective clothing.

Hand protection Elbow-length impervious gloves.

Respiratory protection If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls No information available.

Thermal hazards No information available.

Section 9: Physical and chemical properties**Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	Oily
Color	Colourless
Odor	Acidic.
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	<1	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	330°C	None known
Flash point	Not applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	<1.8	None known
Water solubility	Miscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information**Particle characteristics****Section 10: Stability and reactivity****Reactivity**

Reactivity Reacts with strong alkalis. Corrosive to metals.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Contact with metals may evolve flammable hydrogen gas. Contact with water generates heat.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Heat. Do not contaminate food or feed stuffs. Avoid contact with combustible substances. Exposure to water.

Incompatible materials

Incompatible materials Metals. Strong alkalis. Reducing agent. Combustible material.

Hazardous decomposition products

Hazardous decomposition products Oxides of sulfur.

Section 11: Toxicological information

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation Irritating to respiratory system.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin contact Contact causes severe skin irritation and possible burns.

Ingestion Can burn mouth, throat, and stomach.

Symptoms Irritation/Corrosion. May cause redness and tearing of the eyes. Erythema (skin redness). Burning. Coughing and/ or wheezing. Difficulty in breathing.

Acute toxicity

Numerical measures of toxicity - Product Information

No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric acid	= 2140 mg/kg (Rat)	-	= 0.375 mg/L (Rat) 4 h
Water	> 90 mL/kg (Rat)	-	-
Hydrochloric acid	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h
Chlorine	= 5800 mg/kg (Rat) = 6800 mg/kg (Rat)	-	= 293 ppm (Rat) 1 h

See section 16 for terms and abbreviations

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

Skin corrosion/irritation Causes severe burns. Classification is based on mixture calculation methods based on component data.

Serious eye damage/eye irritation Causes serious eye damage. Classification is based on mixture calculation methods based on component data.

Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Refer to 'Chronic effects' section below.
Reproductive toxicity	No information available.
STOT - single exposure	May cause respiratory irritation. Classification is based on mixture calculation methods based on component data.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Chronic effects:	Repeated overexposure to sulphuric acid may lead to chronic conjunctivitis, lung damage and dental erosion. The International Agency for Research on Cancer (IARC) have concluded that occupational exposure to strong inorganic acid mists containing sulphuric acid is carcinogenic to humans, causing cancer of the larynx and to a lesser extent, the lung. No direct link has been established with sulphuric acid, itself, and cancer in humans. Exposure to any mist or aerosol during the use of this product should be avoided and exposure should not exceed the exposure standard. Available evidence indicates that exposure to strong inorganic acid mists containing sulphuric acid may produce erosion and discolouration of teeth.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity Keep out of waterways. Large discharges of sulfuric acid may contribute to the acidification of water and be fatal to fish and other aquatic life. May injure sewage treatment organisms. Can cause damage to vegetation.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sulfuric acid	-	LC50: >500mg/L (96h, Brachydanio rerio)	-	-
Chlorine	-	LC50: =0.44mg/L (96h, Lepomis macrochirus) LC50: =0.014mg/L (96h, Oncorhynchus mykiss) LC50: 0.104 - 0.168mg/L (96h, Oncorhynchus mykiss) LC50: =0.08mg/L (96h, Pimephales promelas) LC50: =0.1mg/L (96h, Pimephales promelas)	-	LC50: =0.017mg/L (48h, Daphnia magna)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Mobility

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Refer to Waste Management Authority. Dispose of material through a licensed waste contractor.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

See section 8 for more information

Section 14: Transport information

ADG Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number or ID number 1832
Proper shipping name SULPHURIC ACID, SPENT
Transport hazard class(es) 8
Packing group II
Hazchem code 2W

IATA Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS. TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in Passenger and Cargo Aircraft; may be transported by Cargo Aircraft Only.

UN number 1832
UN proper shipping name SULPHURIC ACID, SPENT
Transport hazard class(es) 8
Packing group II

IMDG Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number 1832
UN proper shipping name SULPHURIC ACID, SPENT
Transport hazard class(es) 8
Packing group II

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

No information available

Section 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Australia**

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS). See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Poison Schedule Number 6

Australian Industrial Chemicals Introduction Scheme (AICIS)

Contact supplier for inventory compliance status

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Sulfuric acid - 7664-93-9	Present	-
Water - 7732-18-5	Present	-
Hydrochloric acid - 7647-01-0	Present	-
Chlorine - 7782-50-5	Present	-

Illicit Drug Precursors/Reagents

This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling, and storing these substances.

Chemical name	Illicit Drug Precursors/Reagents
Sulfuric acid - 7664-93-9	Category 3
Hydrochloric acid - 7647-01-0	Category 3

Chemicals of Security Concern

This product contains one or more substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Chemical name	Chemicals of Security Concern	Additional information
Sulfuric acid - 7664-93-9	Present	-
Hydrochloric acid - 7647-01-0	Present	-
Chlorine - 7782-50-5	Present High risk	Toxic chemicals

National pollutant inventory

Subject to reporting requirement

Chemical name	National pollutant inventory
Sulfuric acid - 7664-93-9	10 tonne/yr Threshold category 1
Hydrochloric acid - 7647-01-0	10 tonne/yr Threshold category 1 400 tonne/yr Threshold category 2a 1 tonne/h Threshold category 2a 2000 tonne/yr Threshold category 2b 60000 MWH Threshold category 2b 20 MW Threshold category 2b
Chlorine - 7782-50-5	10 tonne/yr Threshold category 1

International Inventories**AIIC**

All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

NZIoC

Contact supplier for inventory compliance status.

TSCA

Contact supplier for inventory compliance status.

DSL/NDSL

Contact supplier for inventory compliance status.

EINECS/ELINCS

Contact supplier for inventory compliance status.

ENCS

Contact supplier for inventory compliance status.

IECSC

Contact supplier for inventory compliance status.

KECL

Contact supplier for inventory compliance status.

PICCS

Contact supplier for inventory compliance status.

Legend:

AIIC- Australian Inventory of Industrial Chemicals

NZIoC - New Zealand Inventory of Chemicals

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Other information

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Prepared By This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision date: 31-Jan-2024

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

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

SVHC: Substances of Very High Concern for Authorization:

PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
 STOT: Specific Target Organ Toxicity
 ATE: Acute Toxicity Estimate
 LC50: 50% Lethal Concentration
 LD50: 50% Lethal Dose

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 Australian Industrial Chemicals Introduction Scheme (AICIS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet