

Aquapac Pty Ltd

ABN 36 114 118 311

Water Treatment & Specialty chemicals

MATERIAL SAFETY DATA SHEET

Product: Sulfuric Acid 60% Solution

Company Details

Supplier: Aquapac Pty Ltd
Address: 4/20 Powdrill Road
Prestons NSW 2170

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Emergency Telephone No.:

Business Hours: 02 9826 0201
After Hours: 000 Fire brigade or Police

IDENTIFICATION

U.N. Number: 1830
Hazchem: 2P
EPG:

Class: 8
Poisons Schedule: 6
Packaging Group: II

Classified as hazardous according to criteria of NOHSC

Ingredients

Chemical Entity	CAS No.	Proportion
Sulfuric acid	7664-93-9	60%
Water	7732-18-5	balance

Other Names

Sulfuric acid

Uses

Controlling pH in water treatment, pickling, metal cleaning, laboratory reagent, pH adjuster.

Physical Description / Properties

Appearance: Colourless and odourless liquid.
Flash point: N/A
Boiling point (°C): 140 C
Freezing point (°C): -8 C
Vapour pressure: 2.87 mm Hg (1 atmosphere)

Specific Gravity: 1.50
ph (5% solution) < 1
Solubility in Water (g/L): soluble

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Other Properties

Odour:

Odourless

Solubility:

Soluble in water – highly exothermic

HEALTH HAZARD INFORMATION

Health Effects

Symptoms that may arise if the product is mishandled are:

Acute

Extremely corrosive, irritating and toxic leading to severe burns and rapid destruction of tissue.

Swallowed

can kill if swallowed. Will cause severe damage to the mucous membranes. May cause nausea, vomiting, abdominal pain and severe burns to the mouth, throat and stomach. LD50(oral rat=2140mg/Kg)

Eye

Corrosive to eyes. Contact may cause corneal burns. Permanent eye damage including loss of eye sight may occur. Sulfuric acid mists and aerosols are expected to be very irritating.

Skin

Highly corrosive to skin. Causes severe burns. The severity of injury depends on the concentration of sulfuric acid solution and the duration of exposure.

Inhaled

Acid mists are very corrosive and cause severe irritation and injury if inhaled.

Chronic Effects

There is sufficient evidence to suggest that occupational exposure to strong inorganic acid mists containing sulfuric acid may cause cancer in humans.

As with any chemical - ingestion, inhalation, and prolonged or repeated skin contact should be avoided by good occupational work practice.

First Aid

Swallowed

If patient is conscious rinse mouth thoroughly with water immediately. Give 1 – 3 cups of milk or water to drink. Seek medical attention immediately. Do NOT induce vomiting.

Eye

Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.

Skin

Immediately wash with copious amounts of water for at least 15

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minutes. Remove contaminated clothing and wash before re-use. Seek medical advice.

Inhalation Remove victim from exposure - avoid becoming a casualty. Seek medical attention immediately.

Poison Information Centres in each State capital city can provide additional assistance.

Advice to Doctor

Treatment for Sulfuric acid burn to eyes:

Retract eye lids to ensure thorough irrigation of the conjunctival cul-de-sacs;

Irrigate eyes with several litres of saline for at least 20 minutes;

DO NOT use neutralising agents or any other additives;

Cycloplegic drops, antibiotic drops, steroid drops, vasoconstrictive agents, or artificial tears should only be administered with the approval of a consulting ophthalmologist.

Treatment for Sulfuric acid fume, or mist inhalation:

Pulmonary oedema may arise – symptoms may be delayed for several hours.

Affected persons should not be left unattended during this period;

Airway problems may arise from laryngeal oedema – symptoms may be delayed for several hours;

Treat with 100% oxygen initially;

Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling;

Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise;

Treatment for Sulfuric acid burn to the skin:

Skin lesions require copious saline irrigation;

Treat acid burns as thermal burns with non-adherent gauze and wrapping;

Deep second degree burns may benefit from topical silver sulfadiazine

Treatment for Sulfuric Acid Ingestion:

Severe burns from acid ingestion may be associated with life-threatening acute complications of oesophageal, gastric or intestinal perforation. Oesophageal perforation is associated with chest pain, dyspnoea, fever, subcutaneous emphysema of the chest or neck, and a pleural rub;

Initial management is primarily supportive. Particular attention should be directed to securing the airway, fluid resuscitation and provision of opioid analgesia;

Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.

DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury;

A chest x-ray, upright abdominal film is recommended – this may show widening of

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the mediastinum, pleural effusions, pneumomediastinum, and pneumothorax. Perforation of the stomach or small intestine is associated with clinical features of chemical peritonitis: fever, abdominal tenderness, guarding and rebound, and ileus. Septic shock and multi organ failure may complicate perforation;

Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful;

Limit fluids to one or two glasses in an adult;

Charcoal has NO place in acid management as it will interfere with endoscopic evaluation;

The use of gastric lavage within 1 hour of ingestion is suggested;

Symptomatic patients may need the following investigations:

Arterial blood gas analysis;

Coagulation profile;

Complete blood count;

ECG;

Electrolytes;

Glucose;

Liver and renal function;

Type and cross match;

Upper gastrointestinal endoscopy, ideally at 6-24 hours following exposure. Upper gastrointestinal endoscopy should also be strongly considered for asymptomatic patients who have intentionally ingested a strong acid and children, where the history can be unreliable. The site, extent and severity of mucosal damage can be accurately assessed by modified endoscopic classification.

Contrast oesophagography or thoracic CT is useful in the detection of perforation.

Ongoing supportive care includes the maintenance of adequate analgesia, fluid, electrolyte and Ph balance, nutritional support, and monitoring for the development of complications. Parenteral nutrition is necessary in the more severe cases;

Subsequent management and prognosis is largely dictated by findings at upper gastrointestinal tract endoscopy;

There are two methods of treatment of esophageal stenosis; first conservative treatment included dilation, hydrocortisone and antibiotic therapy; and second surgical procedure.

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PRECAUTIONS FOR USE

Exposure Standards (for atmospheric contaminants in the occupational environment)

No value assigned for this product by the NOHSC (Workcover). However, the exposure standard for the acid constituent is:

	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³
Sulfuric acid				3

Engineering Controls

Maintain concentration below recommended exposure limit. Use in a well-ventilated area. Avoid generating and inhaling mists and aerosols. Keep containers closed when not in use. If risk of overexposure exists, wear SAA approved respirator to comply with Australian Standards, ensuring correct fit to obtain adequate protection.

Personal Protection

- Eyes:** The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate.
- Skin:** Rubber or PVC gloves, overalls or PVC suit, safety or rubber boots
- Respiratory:** If mist is generated the use of a P2 type canister respirator or air fed respirator is recommended.

Avoid contact with eyes and skin. Avoid prolonged or repeated exposure. Always wash hands before smoking, eating, drinking or using the toilet.

Flammability

Not combustible material.

SAFE HANDLING INFORMATION

Storage and Transport

Classified as a Dangerous Good for the purposes of transport.

Use only plastic (PE, PP, PVC) or fibreglass containers/vessels – corrosive to mild

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and stainless steels. Other tanks should be lined with chloride resistant materials. Pumps should also be lined with chloride resistant materials.

Spills

Clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contamination including breathing apparatus.

Do not allow spill material to enter the environment. Neutralise spill then contain material using inert absorbent material eg vermiculite. Place into suitable labelled containers and hold for waste disposal. Wash area down with excess water once removed.

Disposal

Refer to State and Land Management Authority and relevant Environmental Protection Authority.

Fire / Explosion Hazards

Conditions to avoid:

High temperature: Toxic fumes of hydrogen chloride may be released if involved in a fire. Fire fighters are to wear self contained breathing apparatus and full protective clothing due to chlorine gas risk.

Materials to avoid:

Strong alkalis. Hypochlorites and cyanides.

Hazardous Decomposition Products:

Sulfuric acid decomposes on heating to produce toxic fumes of oxides of sulphur.

Extinguishing Media:

Fire fighters should wear full protective clothing including self-contained breathing apparatus. In case of fire use water, foam, carbon dioxide, dry powder.

OTHER INFORMATION

Dilution

When diluting sulfuric acid always add acid slowly to water – never add water to acid.

Risk Statement:

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R35 Causes severe burns

R36/37/38 Irritating to eyes, respiratory system and skin.

R41 Risk of serious damage to eyes.

Safety Statement:

S7/9 Keep container tightly closed and in a well ventilated place.

S26 In case of contact with eyes, rinse immediately with plenty of water and Seek medical advice.

S44 If you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible).

Hazard Category: X1

Harmful, Irritant

Company Disclaimer

All information contained in this data sheet is as accurate and up-to-date as possible. Since Aquapac Pty Ltd cannot anticipate or control the conditions under which this information may be used, each user should review the information in the specific context of the intended application.

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