1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name: SULPHURIC ACID (98% SOLUTION)

Synonym(s): DIPPING ACID • OIL OF VITRIOL • SULFURIC ACID • SULFURIC ACID (98% SOLUTION) • SULPHURIC ACID (98% SOLUTION)

1.2 Uses and uses advised against

Use(s): EXPLOSIVE MANUFACTURE • FERTILISER • LABORATORY APPLICATIONS • LABORATORY REAGENT • MANUFACTURE OF CHEMICALS • PICKLING AND ANODISING METALS • TEXTILE CHEMICAL • WATER TREATMENT

1.3 Details of the supplier of the product

Supplier name: CSBP LIMITED

Address: Kwinana Beach Road, Kwinana, WA, 6167, AUSTRALIA

Telephone: (08) 9411 8777

Fax: (08) 9411 8425

Emergency: 1800 09 3333 (Australia); +61 8 9411 8444

1.4 Emergency telephone number(s)

Emergency: 1800 09 3333 (Australia); +61 8 9411 8444

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classification(s): Skin Corrosion/Irritation: Category 1A

2.2 Label elements

Signal word: DANGER

Pictogram(s):

Hazard statement(s)

H314: Causes severe skin burns and eye damage.

Prevention statement(s)

P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340: IF INHALED: Remove to fresh air and keep at rest in a position 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/physician.
P321: Specific treatment is advised - see first aid instructions.
P363: Wash contaminated clothing before reuse.
SULPHURIC ACID (98% SOLUTION)

Storage statement(s)
P405 Store locked up.

Disposal statement(s)
P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards
No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>SULPHURIC ACID</td>
<td>7664-93-9</td>
<td>231-639-5</td>
<td>98%</td>
</tr>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>Remainder</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures
Eye
If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation
If inhaled, remove from contaminated area. To protect rescuer, use a Full-face Type B (Inorganic and acid gas) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion
For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities
Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
Over exposure may result in severe skin, eye and respiratory burns with permanent lung and tissue damage. Strong inorganic acid mists containing sulphuric acid is classified as carcinogenic to humans (IARC Group 1).

4.3 Immediate medical attention and special treatment needed
CORROSIVE POISONING TREATMENT: Immediate treatment preferably in a hospital is mandatory. In treating corrosive poisoning, DO NOT INDUCE VOMITING; DO NOT ATTEMPT GASTRIC LAVAGE; and DO NOT ATTEMPT TO NEUTRALISE THE CORROSIVE SUBSTANCE. Vomiting will increase the severity of damage to the oesophagus as the corrosive substance will again come in contact with it. Attempting gastric lavage may result in perforating either the oesophagus or stomach. Immediately dilute the corrosive substance by having the patient drink milk or water. If the trachea has been damaged tracheostomy may be required. For oesophageal burns begin broad-spectrum antibiotics and corticosteroid therapy. Intravenous fluids will be required if oesophageal or gastric damage prevents ingestion of liquids. Long-range therapy will be directed toward preventing or treating oesophageal scars and strictures.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases (sulphur oxides) when heated to decomposition. May evolve flammable hydrogen gas in contact with some metals.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
2P
2 Fine Water Spray.
P Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Dilute spill and run-off.
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with sodium bicarbonate or 50-50 mixture of sodium carbonate and calcium hydroxide. Collect for complete neutralisation and appropriate disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a secured, cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled and protected from physical damage when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation and fire protection systems. This product should be stored in mild steel containers that conform to AS3780 or API-650.

7.3 Specific end use(s)
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Reference</th>
<th>TWA ppm</th>
<th>TWA mg/m³</th>
<th>STEL ppm</th>
<th>STEL mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphuric acid</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>1</td>
<td>--</td>
<td>3</td>
</tr>
</tbody>
</table>

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls
Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour/gas levels below the recommended exposure standard.

PPE

- **Eye / Face**
  - Wear splash-proof goggles.

- **Hands**
  - Wear PVC or rubber gloves.

- **Body**
  - Wear coveralls. When using large quantities or where heavy contamination is likely, wear rubber boots and a PVC apron. In a laboratory situation, wear a laboratory coat.

- **Respiratory**
  - Where an inhalation risk exists, wear a Type B (Inorganic gases and vapours) respirator. If spraying, with prolonged use, or if in confined areas, wear an Air-line respirator.

![PPE Images]

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>VISCOUS CLEAR TO BROWN LIQUID</td>
</tr>
<tr>
<td>Odour</td>
<td>SLIGHT ODOUR</td>
</tr>
<tr>
<td>Flammability</td>
<td>NON FLAMMABLE</td>
</tr>
<tr>
<td>Flash point</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Boiling point</td>
<td>335°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>10°C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>pH</td>
<td>&lt; 1 (10% solution)</td>
</tr>
<tr>
<td>Vapour density</td>
<td>3.4 (Air = 1)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.84</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>SOLUBLE</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>0.011 kPa @ 25°C (Approximately)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Viscosity</td>
<td>24 mPa·s @ 20°C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>

9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>1.84 t/m³ @ 20°C (Bulk)</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Potential for exothermic hazard.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid contact with incompatible substances.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites), alkalis (e.g. sodium hydroxide) and some metals. Incompatible with cyanides, sulphides and carbides and amines.

10.6 Hazardous decomposition products
May evolve toxic gases (sulphur oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Hazard summary</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard summary</td>
<td>Causes severe burns. This product has the potential to cause serious adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Over exposure may result in severe skin, eye and respiratory burns with permanent lung and tissue damage. Strong inorganic acid mists containing sulphuric acid is classified as carcinogenic to humans (IARC Group 1). Upon dilution, the potential for adverse health effects may be reduced.</td>
</tr>
<tr>
<td>Eye</td>
<td>Causes severe burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible permanent eye damage.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Causes severe burns. Over exposure may result in mucous membrane irritation of the respiratory tract, coughing, bronchitis, ulceration, bloody nose, lung tissue damage, chemical pneumonitis, pulmonary oedema and death. Chronic exposure to mists or vapours of sulphuric acid have been reported to cause etching of dental enamel and erosion and discoloration of teeth in the storage battery manufacturing and steel pickling industry.</td>
</tr>
<tr>
<td>Skin</td>
<td>Causes severe burns. Contact may result in irritation, redness, pain, rash, dermatitis and severe burns.</td>
</tr>
</tbody>
</table>
**SULPHURIC ACID (98% SOLUTION)**

**Ingestion**
Causes severe burns. Ingestion may result in burns to the mouth and throat, nausea, vomiting, abdominal pain and diarrhoea. Ingestion of large quantities may result in ulceration, unconsciousness, convulsions and death. Oral LD50 (rat) is 2140 mg/kg.

**Toxicity data**
SULPHURIC ACID (7664-93-9)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 (inhalation)</td>
<td>18 mg/m³ (guinea pig)</td>
</tr>
<tr>
<td>LD50 (ingestion)</td>
<td>2140 mg/kg (rat)</td>
</tr>
<tr>
<td>TCLo (inhalation)</td>
<td>3 mg/m³/24 weeks (human)</td>
</tr>
</tbody>
</table>

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**
Sulphuric acid is harmful to aquatic life in very low concentrations. May cause corrosion and deterioration of many common materials found in the environment (eg steel, limestone).

**12.2 Persistence and degradability**
No information provided.

**12.3 Bioaccumulative potential**
No information provided.

**12.4 Mobility in soil**
Sulphuric acid is miscible with water and its dilution will increase the velocity of downward movement in the soil where it may dissolve the soil material.

**12.5 Other adverse effects**
No information provided.

**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**
**Waste disposal**
Wearing the protective equipment detailed above, neutralise to pH 6-8 by SLOW addition to a saturated sodium bicarbonate solution or similar basic solution. Dilute with excess water and flush to drain. Waste disposal should only be undertaken in a well ventilated area.

**Legislation**
Dispose of in accordance with relevant local legislation.

**14. TRANSPORT INFORMATION**

**CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE**

<table>
<thead>
<tr>
<th>LAND TRANSPORT (ADG)</th>
<th>SEA TRANSPORT (IMDG / IMO)</th>
<th>AIR TRANSPORT (IATA / ICAO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1830</td>
<td>1830</td>
<td>1830</td>
</tr>
<tr>
<td>SULFURIC ACID with more than 51% acid</td>
<td>SULFURIC ACID with more than 51% acid</td>
<td>SULFURIC ACID with more than 51% acid</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>2P</td>
<td>8A1</td>
<td>F-A, S-B</td>
</tr>
</tbody>
</table>

**14.5 Environmental hazards**
No information provided

**14.6 Special precautions for user**

- Hazchem code: 2P
- GTEPG: 8A1
- EMS: F-A, S-B
15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule
Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications
Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes
C Corrosive

Risk phrases
R35 Causes severe burns.

Safety phrases
S1/2 Keep locked up and out of reach of children.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S30 Never add water to this product.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

Inventory listing(s)
AUSTRALIA: AICS (Australian Inventory of Chemical Substances)
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information
ACIDS: When mixing acids with water (diluting), caution must be taken as heat will be generated which causes violent spattering. Always add a small volume of acid to a large volume of water, NEVER the reverse.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.
SULPHURIC ACID (98% SOLUTION)

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>CAS #</td>
<td>Chemical Abstract Service number - used to uniquely identify chemical compounds</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>EC No.</td>
<td>EC No - European Community Number</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration, 50% / Median Lethal Concentration</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose, 50% / Median Lethal Dose</td>
</tr>
<tr>
<td>mg/m³</td>
<td>Milligrams per Cubic Metre</td>
</tr>
<tr>
<td>OEL</td>
<td>Occupational Exposure Limit</td>
</tr>
<tr>
<td>pH</td>
<td>relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts Per Million</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-Term Exposure Limit</td>
</tr>
<tr>
<td>STOT-RE</td>
<td>Specific target organ toxicity (repeated exposure)</td>
</tr>
<tr>
<td>STOT-SE</td>
<td>Specific target organ toxicity (single exposure)</td>
</tr>
<tr>
<td>SUSMP</td>
<td>Standard for the Uniform Scheduling of Medicines and Poisons</td>
</tr>
<tr>
<td>SWA</td>
<td>Safe Work Australia</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
</tbody>
</table>

Revision history

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Initial SDS Creation.</td>
</tr>
</tbody>
</table>

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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Email: info@rmt.com.au