

## Material Safety Data Sheet

## Sulphuric Acid

### SUPPLIER DETAILS

<b>Supplier Name:</b>	Palabora Copper (Pty) Ltd PO Box 65 1 Copper Road Phalaborwa, 1390 South Africa	<b>Emergency Telephone Number:</b>	+27 (0)15 780 2666
<b>Address:</b>	Manager: Environment & SHEQ MS	<b>E-Mail Address:</b>	<a href="mailto:palabora.msds@palabora.co.za">palabora.msds@palabora.co.za</a>
<b>Person Responsible for updating MSDS:</b>		<b>Telephone Number:</b>	+27 (0)15 780 2911
		<b>URL / WebPages:</b>	<a href="http://www.palabora.com/">http://www.palabora.com/</a>

### 1. PRODUCT IDENTIFICATION

<b>Chemical Names and Synonyms:</b> Sulphuric acid	<b>UN Number:</b> 1830
<b>CAS Number:</b> 7664-93-9	<b>NIOSH Number:</b>

### 2. COMPOSITION

Chemical names and synonyms: Sulphuric Acid  
Ingredients considered hazardous to health - Sulphuric Acid - (98%)

### 3. HAZARDOUS IDENTIFICATION

**US OSHA Hazard Communication Standard** - Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

**Effects of Overexposure** - Respiratory irritation from excessive breathing of mists and/or vapours. Overexposure for prolonged period of time may result in damage to the lungs. Expected to cause severe eye irritation or serious damage to the eye. Expected to cause severe skin irritation or burns. Expected to be severely irritating or corrosive to mucous membranes, oesophagus, and gastrointestinal tract.

**Emergency Response Data** - Colourless Liquid. Product reacts violently with water evolving hydrogen which is a flammable gas. Violent exothermic reaction will occur with water. Toxic and corrosive acid fumes will be emitted. DOT ERG No. -137

### 4. FIRST AID MEASURES

<b>Eye Contact:</b>	Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes
<b>Skin Contact:</b>	Immediately remove contaminated clothing under safety shower using LARGE quantities of water. Get medical assistance.
<b>Inhalation:</b>	Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance and call a doctor. If breathing has stopped, use mouth to mouth resuscitation.
<b>Ingestion:</b>	Do not induce vomiting. Ingestion can cause a severe local reaction with subsequent tissue damage. Immediate medical assistance should be obtained.

### 5. FIRE FIGHTING MEASURES

**Extinguishing media** - **Do not use water.**

**Special fire-fighting procedures** - This material will not burn; however, use standard chemical fire fighting procedures and consider the hazards of other involved materials. Product reactivity may require specialised fire fighting procedures (see MSDS section on reactivity data). Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**Special protective equipment** - Product health hazards may require personal protective equipment in addition to that normally worn (see MSDS sections on special protection information and special precautions). Fire fighters must use positive pressure breathing apparatus, due to possible release of toxic fumes.

**Unusual fire and explosion hazards** - Product reacts violently with water evolving hydrogen which is a flammable gas. Violent exothermic reaction will occur with water. Toxic and corrosive acid fumes will be emitted. Flash Point C: Not Available. Flammable limits - Not Available.

**NFPA hazard ID** - Health: 4, Flammability:0, Reactivity: 1, Additional markings - Reacts violently with water

**Hazardous decomposition products** - Sulphur oxides, Hydrogen gas

## 6. ACCIDENTAL RELEASE MEASURES

**Notification procedures** - Report spills as required to appropriate authorities.

**Procedures if material is released or spilled** - Neutralise spill with 2 to 5 percent caustic soda solution. Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal. Personnel performing cleanup must use protective equipment.

**Environmental precautions** - Prevent spills from entering storm sewers or drains and contact with soil.

**Personal precautions** - See Exposure Controls / Personal Protection

## 7. HANDLING AND STORAGE

**Handling** - Avoid inhalation of vapours or mists. Avoid ingestion. Avoid all personal contact.

**Storage** - Do not store in open or unlabelled containers. Store away from strong oxidising agents or combustible material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Ventilation** - Use in well ventilated area with local exhaust ventilation.

**Respiratory protection** - Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the TLV.

**Eye protection** - Chemical type goggles and face shield must be worn.

**Skin protection** - Protective clothing such as uniforms, coveralls or lab coats should be worn. Impervious gloves and aprons must be worn. Chemical type goggles with face shield must be worn. When handling large quantities, impervious suits and boots must be worn.

Occupational Exposure Limits (Source - ACGIH)

**LTEL** - 1 mg/m<sup>3</sup>, **STEL** - 3 mg/m<sup>3</sup>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid	Boiling point °C:	330
Colour:	Colourless	Melting point °C:	11
Odour:	Irritation	Flash point °C:	Not Applicable
Odour Threshold - ppm:	Not Applicable	Oxidizing properties:	Not Applicable
Partition coefficient:	Not applicable	Vapour pressure-mmHg 20 °C:	Not Established
Vapour density		Solubility in water	Complete
		Density 15/4 C:	1.84
		pH:	1.0

## 10. STABILITY AND REACTIVITY

**Stability** (thermal, light, etc.) - Stable

**Conditions to avoid** - Heat, sparks, flame and build up of static electricity.

**Incompatibility** (materials to avoid) - Acid anhydrides, Combustible Materials, Organic chemicals, Strong oxidisers, Metals, Alkalis and amines.

**Hazardous Decomposition Products** - Toxic sulphur oxides and hydrogen gas (flammable)

**Hazardous polymerization** - Will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicology

#### Oral toxicity (rats):

Expected to be corrosive/ very toxic (LD 50: less than 25mg/kg)

#### Dermal toxicity (rabbits):

Expected to be corrosive/ very toxic (LD 50: less than 50mg/kg)

#### Inhalation toxicity (rats):

Harmful (LC50: greater than 2 but 5 mg/l or less). Based on testing of similar products and/or the components.

#### Eye irritation (rabbits):

Severe irritant. (Draize score: greater than 55 but 110 or less). Based on testing of similar products and/or the components.

#### Skin irritation (rabbits):

Severe irritant or corrosive. (Primary Irritation Index: 6 or greater). Based on testing of similar products and/or the components.

#### Chronic Toxicology:

Prolonged, repeated exposure to acid fumes/mists may cause chronic bronchitis, irritation of



**(Summary)**

skin, mucous membranes and gastrointestinal tract and erosion of the teeth. IARC has classified strong inorganic acid mists containing sulphuric acid as carcinogenic. While the data used in making this determination are considered inadequate, precautions should be taken to avoid inhalation of acid mists.

**12. ECOLOGICAL INFORMATION**

**Biological Effects** - Toxic for aquatic organisms, harmful effect due to pH shift. LD 50 - 96h. 10 mg/l. Fish: Lethal from 1.2 mg/l up, from 6.3 mg/l Lethal in 24h.

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal** - Dispose of waste at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

**RCRA information** - Disposal of unused product may be subject to RCRA regulations (40 CFR 261) due to the characteristic(s)/chemical(s) listed below. Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). PH: 1.0

**14. TRANSPORT INFORMATION**

<b>Shipping Name:</b>	SULPHURIC ACID
<b>Hazard Classification &amp; Div:</b>	8
<b>ID/UN Number:</b>	1830
<b>Packaging Group:</b>	PG 11
<b>Label(s):</b>	Corrosive

**USA DOT**

ERG number: 137  
STCC: NE  
Dangerous when wet: No  
Poison: No  
Placard(s): Corrosive  
Product RQ: 1020 lbs (based on RQ for SULPHURIC ACID)  
Marpol III Status: NA  
**IMO- Marpo1 111 Status: N/A**  
**ICAO / IATA**  
Subsidiary Risk: NA

**15. REGULATORY INFORMATION**

**Government Inventory Status** - All components comply with TSCA, EINECS/ELINCS, AICS, and MITI.

**EU labelling -**

Symbol: C Corrosive  
Risk Phrase(s): R35. Causes severe burns.  
Safety Phrase(s): S2-26-30-45.  
Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Never add water to this product. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
**Contains:** Sulphuric Acid

**16. OTHER INFORMATION**

None.

**DISCLAIMER**

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors or omissions or the consequences thereof. It is the user's obligation to determine the conditions of safe use of the material, all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product.