Material Safety Data Sheet

Date of Issue : 15-5-06 **Authorised By :** Technical Manager

PRODUCT IDENTIFICATION

PRODUCT NAME : Sulphuric Acid

OTHER NAMES : Electrolyte for Lead acid battery

PRODUCT TYPE : Sulphuric Acid (upto 60% by Wt)

UN Number : 1830 **CAS Number :** See Notes

HAZCHEM CODE : 2P **POISONS SCHEDULE No. :** S6

DANGEROUS GOODS CLASS : 8 **PACKAGING GROUP :** II

PRODUCT USE : As Electrolyte in Lead Acid batteries

PRODUCT SUPPLIER DETAILS

Supplier: EXIDE TECHNOLOGIES

A.B.N.: **84 093 272 005**

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New South Wales 2211
Australia

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New South Wales 1891
Australia

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EMERGENCY TELEPHONE NUMBER: 1 800 033 111 (All Hours)

PRODUCT COMPOSITION / INGREDIANCE

MATERIAL OR COMPONENT	CAS Number	PERCENTAGE
Sulphuric acid	7664-93-9	High – Very High 20- 60%
Water	7732-18-5	Med- High : 40-80%

This product is classified as Dangerous Goods for the purpose of transport by road, rail, or air. Reference must be made to the relevant regulations for the transport and storage requirements for this product or material.

PHYSICAL PROPERTIES

	Sulphuric acid
Appearance	Clear liquid with faint acrid odour
Melting Point	Liquid
Boiling Point	95C- 115C
Vapour Pressure	17 to 11 mm HG
Specific Gravity	1.200- 1.420
Flashpoint	NA
Flammability Limits	NA
Solubility in Water	100%

REACTIVITY DATA

	Sulphuric Acid
Incompatibility	Highly corrosive to most metals, carbides, chlorates , nitrates
Stability	Stable
Hazardous decomposition products	Sulfur dioxide, hydrogen sulfide, hydrogen and sulfuric acid mist
Hazardous polymerisation	NA

HEALTH HAZARD INFORMATION

ACUTE TOXICITY	Sulphuric acid may cause severe skin irritation, burns, and damage to cornea and possible blindness and upper respiratory irritation.
SWALLOWED	Sulphuric acid may cause severe irritation of mouth, throat, oesophagus and stomach.

EYES	Sulphuric acid may cause severe irritation of eyes, burns, cornea damage and possible blindness. If acid comes in contact with eyes, immediately wash with plenty of water and continue flushing for 15 minutes. Acute ingestion should be treated by physician.
SKIN	Sulphuric acid may cause severe irritation, burns and ulceration.
INHALED	Sulphuric acid vapours or mist may cause severe respiratory irritation.
CHRONIC TOXICITY	Sulphuric acid may lead to scarring of cornea, inflammation of the nose, throat and bronchial tubes and possible erosion of tooth enamel.

FIRST AID INFORMATION

SWALLOWED	**Sulphuric acid** – Give large quantities of water or milk. DO NOT induce vomiting, then consult physician.
EYES	**Sulphuric acid**s – flush immediately with cool water for atleast 15 minutes, then consult physician.
SKIN	**Sulphuric acid** – Flush with large amounts of water for atleast 15 minutes, remove any contaminated clothing and do not wear again until cleaned. If acid is splashed on shoes, remove and discard if they contain leather.
INHALED	**Sulphuric acid** – Remove to fresh air immediately. If breathing is difficult, give oxygen.
ADVICE TO DOCTOR	Treatment for sulphuric acid.

PRECAUTIONS FOR USE

EXPOSURE STANDARDS	Threshold limit value for Sulphuric acid is 1 mg/ cubic meter in air

ENGINEERING CONTROLS	Store and handle acid in well-ventilated areas. Wear acid mist respirators or air supplied mask. Keep containers closed when not in use.
PERSONAL PROTECTION	**Respiratory protection**: None required under normal conditions. If concentration of sulphuric acid mist is noticed, use respirators. **Eyes and face**: Face shields or goggles as per AS1715 & As 1716 **Hands, Arm, Body**: Rubber or plastic acid resistant gloves with elbow gauntlet. **Other protective clothing**: Acid resistant Apron. Under severe exposure or emergency conditions, wear acid resistant clothing and boots.
FLAMMABILITY	**Flash point**: NA **Flammability:** Non combustible. But reacts with most metals to liberate Hydrogen which can form explosive mixture with air. **Extinguishing media**: CO_2 : Foam: Dry chemicals **Special fire fighting procedures**: Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to splatter. Hence do not use water. Wear acid resistant clothing.

SAFE HANDLING INFORMATION

STORAGE AND TRANSPORT	Packaging group II. Classified as 8 (Corrosive) dangerous substance for transport. Refer to relevant regulations for storage and transportation. Not to be loaded with explosives (class 1), dangerous when wet substances (class 4.3), oxidising agents (class 5.1), organic peroxides (class 5.2), toxic substances (class 6), radioactive substances (class 7), foodstuffs and foodstuff empties, however exemptions may apply. This material is a scheduled poison (S6) and must be stored, maintained and used in accordance with the relevant regulations. Store away from organic and other combustible materials, oxidising agents and foodstuffs. Highly reactive towards metals in the presence of moisture liberating hydrogen gas. Use with great caution in mixing with water due to heat evolution that causes violent spattering. Always add the acid to water, NEVER ADD WATER TO ACID. For further information refer to AS3780.8. Keep containers closed at all times. Check regularly for leaks.
SPILLS AND DISPOSAL	Slippery when wet. Clean up immediately. Wear protective equipment to protect skin, eyes, feet, hands, and palms and to prevent inhalation of acid mist. Carefully dilute with water, then neutralise with lime or soda ash. Wash area down with copious quantities of water. Do not allow water to enter containers of acid as violent reactions may occur. Do not drain into sewers. Collect residue in a container labelled as containing hazardous waste. Dispose off as hazardous waste.

FIRE/EXPLOSION HAZARD	Not combustible. However if involved in a fire, will emit toxic fumes including those of sulfuric acid fumes and sulfur dioxide. Fire fighters to wear self- contained breathing apparatus. Heating can cause expansion or decomposition leading to violent rupture of containers. Extinguishing media: water fog, foam, dry agent (carbon dioxide, dry chemical powder.
OTHER PRECAUTIONS	Sulphuric acid is highly corrosive to most metals. Lead is not compatible with Strong acid, ammonium nitrate, sodium oxide, and oxidants. Avoid contaminating waterways. Sulphuric acid is soluble in water and remains indefinitely in the environment as Sulphate. Large discharges may contribute to the acidification of water and be fatal to aquatic life and soil micro-organisms. Large discharges may contribute to the acidification of effluent treatment systems and injure sewage treatment organisms.
SUBSIDUARY RISK	The international agency for research on cancer (IARC) has classified “strong inorganic acid mist containing sulphuric acid” as a category carcinogen, a substance that is carcinogenous to humans. This classification does not apply to liquid forms of sulphuric acid or sulphuric acid solutions contained within a battery. Inorganic acid mist (sulphuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulphuric acid mist.

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