



MATERIAL SAFETY DATA SHEET

UN2796

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

MANUFACTURER	YACHT BATTERY CO., LTD. 4F-5, NO. 123, SEC. 3, TAICHUNG PORT ROAD, TAICHUNG TAIWAN R.O.C. TEL : +886 4 2358 0578 FAX : +886 4 23580059 E-MAIL : SALES@YACHT-BATTERY.COM
CHEMICAL/ TRADE NAME	ELECTROLYTE BATTERY
CHEMICAL FAMILFAMILY/ CLASSIFCATION	FLUID ACID
GROUP	II
IMCO CLASS NUMBER	8
INFOTRAC (24-HOUR EMERGENCY RESPONSE CONTACT)	1-800-535-5053 (USA & CANADA); 1-352-323-3500 (OTHER COUNTRIES) (FOR CHEMICAL EMERGENCY SPILL, LEAK FIRE, EXPLOSION, OR ACCIDENTAL CALL)
DATE ISSUE	JAN. 01, 2000
DATE REVISED	NOV. 10, 2008

2. INFORMATION ON INGREDIENTS

COMPONENTS	OSHA PEL	ACGIH TLV	% (OPTIONAL)
Sulfuric Acid (H ₂ SO ₄)	1000 ug/m3	1000 ug/m3	30-40
Water (H ₂ O)	--	--	60-70
NFPA HAZARD RATING	Flammability (Red) =0 Health (Blue) =3 Reactivity (Yellow) =2		
Sulfuric acid is water-reactive if concentrated.			

3. HAZARDOUS COMPONENTS

COMPONENTS	% WEIGHT	TLV	LD 50	LC 50	LC 50
			ORAL	INHALATION	CONTACT
Lead (Pb, PbO ₂ , PbSO ₄)	About 70%	N/A	(500) mg/kg	N/A	N/A
Sulfuric acid	About 20%	1 mg/m3	(2,140) mg/kg	N/A	N/A
Fiberglass Separator	About 5%	N/A	N/A	N/A	N/A
Styron R 478 (Polystyrene)	About 5%	N/A	N/A	N/A	N/A

4. PHYSICAL DATA

COMPONENTS	DENSITY	MELTING POINTS	SOLUBILITY (H ₂ O)	ODOR	APPEARANCE
Lead	11.34	327.4°C (Boiling)	None	None	Silver-gray Metal
Lead Sulfate	6.2	1070°C (Boiling)	40 mg/l (15°C)	None	White Powder
Lead Dioxide	9.4	290°C (Boiling)	None	None	Brown Powder
Sulfuric Acid	About 1.3	About 114°C (Boiling)	100%	ACIDIC	CLEAR COLORLESS LIQUID
Fiberglass Sep.	N/A	N/A	SLIGHT	TOXIC	WHITE FIBROUS GLASS
478 Polystyrene	N/A	N/A	NONE	NO ODOR	SOLID

5. FLAMMABILITY DATA

COMPONENTS	FLASH POINT	EXPLOSIVE LIMITS	COMMENTS
Lead	None	None	
Sulfuric Acid	None	None	
Hydrogen		4%-74.2%	Sealed batteries can emit hydrogen only if over charged (float voltage > 2.40VPC)
Fiberglass Sep.	N/A	N/A	Toxic vapors may be relapsed. In case of fire: wear self-contained breathing apparatus.
478 Polystyrene	None	N/A	Temperatures over 300°C (572°F) may release combustible gases. In case of fire. Wear positive pressure self-contained breathing apparatus.

6. FIRE - FIGHTING MEASURES

Flash Point	Not applicable
Flammable Limits	LEL=Non applicable UEL=Non applicable
Extinguishing Media	CO ₂ ; foam; dry chemical; water; water fog
Special Fire Fighting Procedures	Water applied to sulfuric acid generates heat and causes acid to splatter. Wear full-cover sulfuric acid resistant clothing.
Unusual Fire and Explosion Hazards	Reacts violently with metals, nitrates, chlorates, carbides and other organic materials. Reacts with most Metals to yield explosive and flammable hydrogen gas.

7. FIRST AID MEASURES

SULFURIC ACID PERCAUTIONS	
SKIN CONTACT: Flush with water, see physician if contact area is large on if blisters form.	
EYE CONTACT: Call physician immediately and flush with water until physician arrives.	
INGESTION: Call physician. If patient is conscious, flush mouth with water, have the patient drink milk or sodium bicarbonate solution.	
DO NOT GIVE ANYTHING TO AN UNCONSCIOUS PERSON.	

8. REACTIVITY DATA

COMPONENT	Sulfuric acid
STABILITY	Stable at all temperatures
POLYMERIZATION	Will not polymerize
INCOMPATIBILITY	Reactive metals, strong bases, most organic compounds.
DECOMPOSITION PRODUCTS	Sulfuric dioxide, trioxide, hydrogen sulfuric hydrogen.
CONDITIONS TO AVOID	Prohibit smoking, sparks etc. from battery charging area. Avoid mixing acid with other chemicals.

9. SPILL OR LEAK PROCEDURES

STEPS TO TAKE IN CASE OF LEAK OR SPILL:

Stop flow of material, contain/ absorb small spills with dry sand, earth, vermiculite. Do not use combustible materials. If possible, carefully neutralize the spill with soda ash, sodium bicarbonate, lime, etc. If used, cautiously dilute with water. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer.

WASTE DISPOSAL METHODS:

Place neutralized slurry in sealed containers and dispose of as hazardous waste, as applicable. Large water-diluted spills, after neutralization and testing, should be managed in accordance with local, state and federal requirements. Consult state environmental agency and/or federal EPA.

10. HANDLING AND STORAGE

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Handle cautiously; avoid contact with skin and eyes. Storage and handling areas should be equipped with proper containment to capture and neutralize spills. In addition, these areas should be equipped with eyewash stations and safety showers.

PRECAUTIONARY LABELING

POISON – CAUSES SEVERE BURNS DANGER – CONTAINS SULFURIC ACID

11. PROTECTION

EXPOSURE SITE	PROTECTION	COMMENTS
SKIN	Rubber Gloves, Apron	Protective equipment must be worn if the battery is cracked or otherwise damaged. A respirator should be worn during reclaim operations if the TLV is exceeded.
RESPIRATORY	Respirator (for lead)	
EYES	Safety Goggles, Face Shield	

12. ELECTRICAL SAFETY

Due to the battery's low internal resistance and high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery system.

13. TOXICOLOGICAL AND ECOLOGICAL INFORMATION

COMPONENT	% WEIGHT	TLV	LD 50	LC 50	LC 50
			ORAL	INHALATION	CONTACT
Lead (Pb, PbO ₂ , PbSO ₄)	About 70%	N/A	(500) mg/kg	N/A	N/A
Sulfuric Acid	About 20%	1mg/m ³	(2,140) mg/kg	N/A	N/A
Fiberglass Sep.	About 5%	N/A	N/A	N/A	N/A
Styron R478 (Polystyrene)	About 5%	N/A	N/A	N/A	N/A

14. TRANSPORT INFORMATION

NFPA Hazard Rating for sulfuric acid:

Flammability (Red) = 0 Health (Blue) = 3 Reactivity (Yellow) = 2

Sulfuric acid is water-reactive if concentrated.

RCRA: Spent lead-acid batteries are not regulated as hazardous waste when recycled. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity).

15. OTHER REGULATORY INFORMATION

TSCA: Each ingredient chemical listed in Section II of this MSDS is also listed on the TSCA Registry.

CANADIAN REGULATIONS: All chemical substances in this product are listed on the CEPA DSL/NDL or are exempt from list requirements.

CALIFORNIA PROPOSITION 65: "WARNING: This product contains lead, a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm".

16. OTHER INFORMATION

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