

# MATERIAL SAFETY DATA SHEET

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## TAIWAN YUASA BATTERY CO.,LTD

<b>QA Dept.</b>	
<b>Emergency contact</b>	TEL 886-2-2901-8261 FAX 886-2-29039626
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<b>Prepared on 2010.11.02</b>	

**Product Name : ( Chemicals name or Merchandise Name ) :**  
**TYPE - NP 、 NPH 、 NPX 、 NPW 、 RE 、 REW 、 REC 、 UXH 、 NPL 、 SWL 、 UXL 、 NPA 、 TRE 、 FXH 、 PW    Lead-Acid Battery**

**Identification of substance**  
 Identification of single - or mixed substance product : Mixed-substance product

Components	Compositions	Approximate%	CAS Number
Plate	Lead and lead compounds ( Pb & PbO <sub>2</sub> )	65-75%	7439-92-1 ( Pb )
	Barium compound ( Ba <sup>++</sup> )	0.3% or below	7440-39-3 ( Ba )
Electrolyte	abt. 40% dilute sulfuric acid ( H <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O )	15-25%	7664-93-9
Battery container / Cover	ABS resin ( synthetic resin )	5-15%	9003-56-9
	Antimony trioxide ( Sb <sub>2</sub> O <sub>3</sub> )	2% or below	1309-64-4
	Tetrabromobisphenol A	4% or below	79-94-7
Separator	Glass Fiber	1-3%	65997-17-3
Other metal parts	Brass	1% or below	63338-02-3
Other resin parts	PP	1-5%	9003-07-0
	Epoxy resin		25068-38-6 00108-95-2
	Rubber		25038-36-2

**Classification of Hazardousness and Poisonousness**

Classification name	Classification standard not applicable to batteries.
Hazardousness	Charging a battery generates hydrogen and oxygen gases. Exposure of fire to them may catch a fire , resulting in an explosion.
Poisonousness	Exposure of electrolyte to skin or an eye may result in a burn or a loss of eyesight.
Effect on Environment	Highly concentrated electrolyte may adversely affect living things such as animals and plants.

**Emergency Measures**

When electrolyte is inhaled :	Move to a place full of fresh air and have immediate medical treatment.
When electrolyte is swallowed :	Immediately rinse the mouth with a large quantity of fresh water , and drink another large quantity of fresh water. Then , have immediate medical treatment.
When electrolyte is attached to skin :	Immediately wash it down with a large quantity of water , and thoroughly wash the skin with soap. If there is a fear of burn , have immediate medical treatment.
When electrolyte contacts the eyes :	Immediately flush the eye sufficiently with water , and have immediate medical treatment.

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<b>Action at the Time of Fire</b>			
Fire fighting method	Extinguish a fire using a fire extinguisher of dry powder agent , foam agent or non-combustible gas.		
<b>Action at The Time of Electrolyte Leak or Outflow</b>			
Neutralize the leaked electrolyte with soda bicarbonate or slaked lime , then wash it down. ( At that time , be sure to wear protective goggles , gloves , and boots. )			
<b>Handling and Storing Precautions</b>			
Handling :	<ul style="list-style-type: none"> <li>● Do not disassemble or modify the battery , nor short it between the terminals.</li> <li>● Do not put a fire close to the battery , or throw it into a fire.</li> <li>● Handle batteries as heavy objects.</li> <li>● With vents provided in a cubicle , for example , charge the battery in a well ventilated room.</li> </ul>		
Storing :	Choose a place that is not exposed to high temperatures , high humidity , wind and rain , direct sunlight , fire , poisonous gasses , droplets , dust generation or ingress , or submersion.		
<b>Exposure inhibiting Device</b>			
Not applicable to batteries.			
<b>Physical / Chemical Properties</b>			
Not applicable to batteries.			
Materials ( reference )	Dilute sulfuric acid ( for 1.3 of specific gravity )	Lead	ABS resin
● Other appearance	Transparent liquid	Silver white solid	Black or Gray solid
● Specific gravity	1.30	11.3	1.20
● Boiling point	110°C	1,740°C	—
● Melting point	-40°C	327°C	Soften point about 130-150°C
● Freezing point	-56.4°C		—
● Vapor pressure	3.17 kPa ( for 30% concentration at 30°C )	0.1 kPa ( at 25°C )	—
<b>Hazardousness information</b>			
As per "Classification of Hazardousness and Poisonousness" above.			
<b>Poisonousness information</b>			
As per "Classification of Hazardousness and Poisonousness" above.			

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<b>Environmental information</b>	
As per "Classification of Hazardousness and Poisonousness" above.	
<b>Disposing precautions</b>	
Used batteries shall be recycled for reuse in accordance with relative national law and regulations.	
<b>Transporting precautions</b>	
Try to avoid mingling batteries with other substances. Handle with care so that no electrolyte leak occurs by overturning or dropping a battery.	
<b>Applicable Law ( Sulfuric Acid )</b>	
Toxic and Hazardous Substances Control Act	Hazardous substances
Labor Safety and Sanitation Law	Specific chemical substances – substances of third category
Shipping and Storage Regulation of Dangerous Goods	Corrosive substance
Fire Service Law	Fire Nuisance
<b>Shipping Methods</b>	
Air Transportation Proper Shipping Name : Batteries, wet, non-spillable UN Identification : UN2800 Yuasa VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 806 and Special Provision A67. These batteries are excepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in description on the Air Waybill.	
Marine Transportation Proper Shipping Name : Batteries, wet, non-spillable UN Identification : UN2800 Yuasa VRLA batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and 2 ; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.	
Transportation between USA and Canada US DOT : No proper shipping name ; not regulated as a hazardous material. Yuasa VRLA batteries have been tested and meet the non-spillable criteria listed in CFR 49, 173. 159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met : <ol style="list-style-type: none"><li>1. The batteries must be protected against short circuits and securely packaged.</li><li>2. The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".</li></ol>	
Additional Information : <ul style="list-style-type: none"><li>● Each battery and the outer packaging must be plainly and durably marked "Non-Spillable" or "Non-Spillable Battery".</li><li>● Transport requires proper packaging and paperwork, including the nature and quantity of goods, per applicable origin / destination / customs points as-shipped.</li></ul>	

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<b>Suitable specification</b>			
JAPAN : Accord with JIS C8702- ( 1 ) 、 ( 2 ) 、 ( 3 ) 。			
Overseas : Accord with IEC 61056-1 、 61056-2 、 61056-3			
<b>Other information</b>			
NFPA Hazard Rating for sulfuric acid :			
Flammability ( Red )            =0			
Health ( Blue )                 =3			
Reactivity ( Yellow )         =2			
Sulfuric acid is water-reactive if concentrated.			
The following battery compositions is listed in TSCA ( Toxic Substance Control Act ( U.S.A. ) ) .			
	Components	CAS No.	TSCA lists the state
Electrolyte	sulfuric acid ( H <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O )	7664-93-9	Listed
Inorganic lead Compound	Lead ( Pb )	7439-92-1	Listed
	lead compounds ( PbO <sub>2</sub> )	1317-36-8	Listed
	Lead sulfate ( PbSO <sub>4</sub> )	7446-14-2	Listed
	Calcium ( Ca )	7440-70-2	Listed
	Tin ( Sn )	7440-31-5	Listed
	Barium ( Ba )	7440-39-3	Listed
Battery container & Cover	Antimony trioxide ( Sb <sub>2</sub> O <sub>3</sub> )	1309-64-4	Listed
	Tetrabromobisphenol A ( C <sub>15</sub> H <sub>12</sub> Br <sub>4</sub> O <sub>2</sub> )	79-94-7	Listed
California Prop 65			
Battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.			
RoHS Instruction			
Lead and lead compound contained in the lead-acid battery is off the subject of the RoHS instruction.			
<ul style="list-style-type: none"> <li>• All statements described here are based on the materials, information, and date collected at this point. Thereby, the above statements may not reflect the most updated information. All the substances may include un-described hazardous substances. All statements described here do no guarantees that all the possible hazardous substance is included. In addition, please read the warning and notes on caution label before using rechargeable battery.</li> </ul>			
<ul style="list-style-type: none"> <li>• If you have any questions regard to rechargeable battery or the MSDS content, please contact us for further information.</li> </ul>			