

**Material Safety Data Sheet****GS Yuasa Power Supply Ltd.**

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<b>Product Name:</b> (Chemicals name or Merchandise Name): HSE,MSE,SNS,SE,SUB,UXL,UXH TYPE Lead-Acid Battery (FLAME RETARDANT HB)			
<b>Identification of substance</b> Identification of single- or mixed substance product: Mixed-substance product			
Parts	Material	Approximate%_by wt.	CAS Number
Plate	Lead and lead compounds	65-75%	7439-92-1(Pb)
	Barium compound	0.3% or below	7440-39-3(Ba)
Electrolyte	About 40% dilute sulfuric acid (H <sub>2</sub> SO <sub>4</sub> )	18-25%	7664-93-9
Battery container Cover	ABS resin (synthetic resin)	5-10%	9003-56-9
Separator	Glass	1.5-2.5%	-
Other resin parts	PP (synthetic resin), Epoxy resin and Rubber etc.	1% or below	9003-07-0(PP)
Other metal parts	Brass etc.	1% or below	-
<b>Classification of Hazardousness and Poisonousness</b>			
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.		
<b>Emergency Measures</b>			
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.		
<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 (as example)	<u>Dilute sulfuric acid</u> (for 1.3 of specific gravity)	<u>Lead</u>	<u>ABS resin</u>
• Outer appearance	Transparent liquid	Silver white solid	Solid
• Specific gravity	1.3	11.3	1.20
• Boiling point	110	1,740	-
• Melting point	-40	327	(130 ~ 150 ) This is no clear melting point. It softens in the large temperature range.
• Freezing point	-56.4	-	-
• Vapor pressure	3.17 k Pa (for 30% concentration at 30 )	0.1 k Pa (at 25 )	-
<b>Hazardousness information</b>			
As per "Classification of Hazardousness and Poisonousness" above.			
<b>Poisonousness information</b>			
As per "Classification of Hazardousness and Poisonousness" above.			
<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 laws and regulations</b>			
• Poison and Deleterious Substance Control Law:		Electrolyte falls under "Deleterious Substance Category".	
• Labor Safety & Hygiene Law:		Lead falls under "Class 3 Substance" in Specific Chemical Substance Category.	
• Hazardous Materials Storage and Ship Transportation Regulations:		Electrolyte falls under "Corrosive Substance Category".	
• Fire Services Act:		Terminal materials fall under "Substances Inhibiting Fire Fighting".	
<b>Law on transport : ( Shipping )</b>			
Valve regulated lead acid battery is correspond UN-2800 on TRANSPORT OF DANGEROUS GOODS. But The Battery is not correspond to dangerous goods because it satisfied SPECIAL PROVISIONS . Information of TRANSPORT OF DANGEROUS GOODS is attached.			
<b>Law on transport : ( Air )</b>			
Valve regulated lead acid battery is correspond to an escape Clause A67 of dangerous goods in IATA. Information of IATA is attached.			
<b>Law on transport : (Land transportation In U.S.A and Canada)</b>			
"NONSPILABLE" or "NONSPILLABLE BATTERY" must be described on battery or package in order to call the attention of nature of transport goods to the drivers. According to law 173-159 by Department of Transportation (DOT).			
<b>Applied Standard</b> : JIS C 8702-2, IEC 60896-21, IEC 60896-22			
<b>TSCA</b>			
Ingredients in Yuasa batteries are listed in the TSCA registry as follows:			
Components		CAS number	TSCA status
Electrolyte	Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	7664-93-9	listed
Inorganic lead compound	lead (Pb)	7439-92-1	listed
	Lead oxide (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
<b>California prop 65</b>			
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.			
This information is accurate to the best of GS Yuasa Power Supply's knowledge or obtained from sources believed by GS Yuasa Power Supply to be accurate. Before using any product, read all warnings and directions on the level.			
For additional information concerning GS Yuasa Power Supply products or questions concerning the content of this MSDS please contact GS Yuasa Power Supply representative.			