2. Material and structure

Item		Product Characteristics	
		UKB products	**Its rival products**
Battery tank (Container)	material	PP resin	PP resin (the same)
	thickness	As the thickness in the length and width of the same size battery is designed to be 0.5mm thinner, it has more efficient use of the electrolytic solution and good cooling effect, due to the more volume of the solution.	The thickness of the tank plate is more 0.5mm thicker than that of the UKB.
Tube	material	Microporous Polyester	Normal texture typed Polyester
	dimension	The endurance of the plate is improved through the design of the 9Φ in internal diameter and 14 Spines. The electric discharge capacity is much better in the same number of plates, due to the increase of the reaction material filled in the tube.	The endurance of the battery with the same number of plates is weak, and its life span is short, as it is designed in the thin structure of internal diameter 8.4Φ and 15 Spines, in order to increase the efficient use of the material reacting on the plates.
	Porosity	With 70% of higher porosity, it is very efficient in charge and discharge, as the solution diffuses very fast.	With 55%of porosity, the solution diffusion rate is slower in discharge than the UKB products.
	Pore Size	As the fine pores in about 45㎛ size are equally distributed, the resistance to shedding an active material is excellent.	With the 90㎛ in pore size, the double that of the UKB, the endurance is poor, as it sheds easily the active material.
	Acid Absorption	As the absorption of sulfuric acid is very good, the surface activation of the plates is excellent during charge and discharge.	The absorption of sulfuric acid is about 60% of the UKB products

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3. Capacity characteristics

Item		Products Characteristics	
Item		**UKB products**	**Rival products**
Separator	material	PE Synthetic Resin	Normal separator
Separator	structure	With cathode plate surrounded like an envelope, it prevents the mossing in the flank of the plates and short circuit from the anodes.	With Leaf Type, the mossing in side of the plates shortens the life span of battery.
Separator	Ion Conductance	Made in porous material (68%), it is good in ion conductance and excellent in the efficiency of charge and discharge.	The internal resistance in the battery is 3 times more higher than that of the UKB products.
Separator	anti-heat and anti-acid	With good anti-heat and anti-acid resistance, it keeps good endurance, even if it is repeatedly charged and discharged.	With poor anti-heat and anti-acid endurance, it results in shorter life span, and smells bad during charge.
Plate	anode	With the alloys not weakened during repeated over-charges and discharges, and added with reaction agent good in electric conductance, the low temperature performance and its life span are excellent.	No special Additive is used.

Plate	anode	As the plate is thicker 8% than the normal types, it has long endurance, and increases the battery life span. (14 Spine)	Made with 15 Spines, it has some merits during higher rate of electric discharge, but it is weak in the endurance. The Ampere hour capacity is lower than that of the battery in the same number of plates.
Plate	anode	As it is molded in high pressure,120Kg/㎠(120air pressure), it increases the life span of the plates (designed life span : more than 5 years)	Generally, it is manufactured in the gravitational casting method to save the cost for their production. (The density is 12% lower than that of the items produced by the pressure method)
Plate	cathode	With the chemical agents good in electric conductivity, the battery has good performance in lower temperature and excellent capacity of discharge recovery.	The chemical agents in lower purity is used.
Electrolytic solution	purity	The purified water is produced in the company, and the high purity of enriched sulfuric acid is purchased for the production.	The sulfuric acid not good in purity is used.
Structure of filling battery with the fluid	Vent Plug	For the convenience of the maintenance and repair, the vent plug with one-touch type cap is adopted to check the fluid level.	The one-touch cap with no floating buoy is used.
Structure of filling battery with the fluid	Automatic lump filling device (optional)	To meet consumer's demand, automatic lump filling device can be equipped to the cell set.	-
Electronic sensor of the fluid level	Device to check electrolytic level (optional)	Green emission light : the level of electrolyte is normal, Red emission light : the addition of purified water is needed.	-
Product weight	Weight in the same dimension and capacity	As the 14 Spines are adopted in the anode, the weight is 5% heavier, compared with the actual weight, and the capacity is excellent.	With adoption of 15 Spines anode, the real quantity of the active material is designed to be less than that of the UKB.

Item		**Product Characteristics**	
Item		**UKB products**	**Rival products**
Characteristics in charge and discharge	Discharge capacity	More than 95% of the initial capacity. (5HR 100%, 3HR 85%,2HR 75%)	More than 85% of the initial capacity.
Characteristics in charge and discharge	Recharge efficiency	Recharge efficiency : 80%, (It must be charged in 125% of the quantity discharged ,100/125=0.80)	Re-charge efficiency : 71%, (It must be charged in 140% of the quantity discharged, 100/140=0.71)
Characteristics in charge and discharge	Temperature characteristics	The temperature is kept below 50 degrees, not to affect the life span of the battery	The temperature is 5-6 degrees higher than that of the UKB.
Recovery characteristics of complete discharge negligence		On the conditions of the discharged battery, left 30 days and charged again in 15 hours, it recovers 92% of the capacity defined, and the recovery charge characteristic is good when it is left 3 days with 80%of its capacity discharged.	If the battery discharged is left 30 days, it is difficult to restore the recovery charge capacity, due to sulfuration. When the volume discharged is more than 50%, it must be charged as soon as possible.
Dry-charge performance		With adoption of inert gas dry charge, the battery can be used, after supplementary charge is made in 200% of its capacity, depending on the storage period.	With the dry engineering process by the chemical method, the dry charge efficiency is not good. And it must be used after charged in more than 400-450% of the capacity defined.

Internal resistance and electrolytic temperature	Temperature characteristics	As the internal resistance is low, the heat discharging temperature is not so high and stable.	The temperature during charge and discharge is 5-6 degrees higher than that of the UKB, and it shortens the life battery span.
Internal resistance and electrolytic temperature	Temperature characteristics	**Refer to the corelation between internal resistance, temperature, and battery life span attached.**	
Electrolytic solution replenish		The solution must be supplemented every 15 days during normal operation.	It must be supplemented almost every week, as it is hot during the operation.
Storage and operation temperature	Battery temperature	Storage : 0 ~ 38℃, Use : -20 ~ 50℃	If the battery is used too much during summer, the temperature often goes over 50 degrees.
Self discharge	Left 30 days at the temperature of 25 degrees	7% of the battery capacity defined	The self-discharge of the battery is more than double that of the UKB products, almost 15%.
Life span in use	80% of the discharge depth	More than 1500 Cycles	About 800~1000 Cycles.
Damage guarantee	number of guarantee years	2 year guarantee	0ne year guarantee.
Damage guarantee	life span	1500 hours(the longest time : less than 2 years)	Nothing.