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RECHARGEABLE BATTERIES PRODUCED AT THE JIZZAKH ACCUMULATOR FACTORY

Turakulov Jakhongir Ulugbekovich
Jizzakh Polytechnic Institute Associate Professor,
Ph.D in Chemistry

Abstract
This article analyzes the types of products produced at the Jizzakh battery factory, one of the largest battery-producing enterprises in Uzbekistan. Their types, advantages and disadvantages, as well as demands and proposals for the production of new types of batteries, taking into account the current market demand, are presented.

Keywords: Batteries, technology, production, lead, sulfuric acid, scientific analysis.

Introduction

The electric battery appeared in 1803 as a source of chemical current capable of generating renewable current. The inventor of the battery, Johann Ritter, placed 50 copper coins on a pole and placed a cloth soaked in electrolyte between them. As a result of the electrochemical reaction, Ritter's battery produced a weak direct current. Modern batteries generate hundreds of amperes of current, which is enough to start a diesel internal combustion engine even in cold weather. But today's battery production technology is significantly different than what Johann Ritter created. Today, the most common battery manufacturing technologies include:

- **Valve Regulated** Lead Acid . VRLA technology is a classic lead-acid battery assembly technology. The negative electrodes of such a battery are made of pure lead, and the positive electrodes are made of the same metal dioxide. A mixture of water and sulfuric acid (63:37 ratio) is used as an electrolyte. Conductor of electrolyte between positive and negative electrodes i separator is inserted. This part prevents short circuits and self-discharge. JAZ JSC (Jizzakh Accumulator Plant) the same type of accumulator batteries are being produced.

Today, the Jizzakh Battery Plant is one of the largest enterprises in the production of accumulator batteries in Uzbekistan. On average, about 100,000 batteries based on VRLA technology are produced at this plant every year.

also produces maintenance-free calcium batteries with capacities from 35 to 225 A/s, manufactured using advanced metal technology that meets the latest technical requirements.

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market demands, JAZ also manufactures low- maintenance batteries in a wide range of capacities and sizes . JAZ's product segments are Automotive (batteries for passenger cars and light commercial vehicles) and Commercial (batteries for heavy-duty and heavy-duty vehicles).

the types of accumulator batteries currently produced at the Jizzakh battery plant of Uzbekistan (Table 1).

Table 1 Types of batteries manufactured at JAZ

No	Batteries conditional determination	Batteries group	Tension	Capacity	outgoing vine	Electrolyte with weight , more didn't happen	Dimensions				Bottom installation	Polar exit	Polarization
			V	A/ s	A(EN)	Kg .	Length	Eni	Height (N)	Height (TN)			
Types of JIS													
	MF 35	B19	12	35	330	10.0	197	127	200	220		c	1/o
	MF 60	D23	12	60	550	15.2	229	17A	186	206	B9	A	1/o
DIN types													
	MF 50	LI	12	50	375	12.3	207	175	190	190	B13	A	1/o
	DIN 60	L2	12	60	500	15.2	2A2	175	190	190	B13	A	1/o
	MF 75	L3	12	75	650	17.5	276	175	190	190	B13	A	1/o
	DIN 75	L3	12	75	650	17.5	276	175	190	190	B13	A	1/o
	DIN 100	L5	12	100	790	21.8	352	175	190	190	B13	A	1/o
	DIN 1A0	MAC 120	12	1A0	910	33.5	512	176	205	227	B13	A	3/A
	DIN 190	Type A	12	190	1200	A5,2	515	218	205	227	B13	A	3/A
	DIN 200		12	200	1250	A6.0	515	218	205	227	B13	A	3/A
EFB batteries													
	EFB 70	L3	12	70	680	19.0	276	175	190	190	B13	A	1/o
	EFB 90	L5	12	90	850	25.0	352	175	190	190	B13	A	1/o

Battery regeneration technology is also used at the JAZ plant. Battery regeneration technology is based on charging and discharging the battery with microwatt energy packs according to a certain time algorithm. This leads to a significant increase in the internal surface of the battery electrodes and therefore significantly reduces the internal resistance of the battery. This, in turn, leads to reduced heat generation during battery charging and discharging, and as a result, more efficient use of stored energy and increased battery life. Of course, batteries with mechanical damage and one or more failed elements cannot be restored.

B batteries takes 24 hours, regardless of their nominal capacity. The use of batteries with a capacity of 80 A / s and more is economically beneficial .

Causes of battery failure . There are many reasons why a lead acid battery will fail. The main reasons are given below:

- Constant discharge;
- Work at high temperatures;
- Frequent deep flow.

Modern technologies for partial battery recovery have no effect on sealed batteries, as they are not mechanically affected. For these batteries, regeneration means buying a new one. What do they do with a used sealed battery? They just destroy them. Therefore, many "dead" batteries are thrown away, many of which can and should be regenerated, which causes serious financial and environmental damage.

Despite the installation of expensive modern treatment systems, the environmental discharge from such devices is still high. The release of sulfuric acid, lead and its compounds into the environment (air, soil and water bodies) dramatically worsens the ecological situation. There is also the problem of recycling used batteries. Of course, recycling used batteries partially solves this problem. At the collection point, workers pour battery electrolyte and separate lead and other heavy compounds. These items are transported for recycling. However, any interaction with the contents of the battery will leave its mark in one way or another. Environmental damage can be minimized by reviving batteries. In fact, this technology is environmentally friendly, because the battery is not disassembled and its electrolyte is not spilled. After a full recovery, the battery will continue to work again.

Benefits of Battery Reconditioning

Reusing a sealed battery can significantly save on the purchase of a new battery (see battery recycling cost) and thus reduce the maintenance costs of an autonomous power plant, UPS, wind farm or solar energy system. In other words, it is useful for any device that contains a high-capacity sealed battery.

Conclusion

Effective use of renewable energy sources and their production, as well as production and localization of import-substituting and competitive AKB is one of the pressing issues facing us.

Taking into account the above, today's young scientists should be focused on conducting scientific research and research in the localization of AKB types and creating new types of accumulators, for the development of the electrochemical field.

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