bosfa spiral lead acid battery

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Bosfa Industrial Battery Co., Ltd.

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product introduction:

Brief Introduction about Spiral Battery

The bosfa application of the alloy that can effectively reduce the release of hydrogen, the special technique in manufacturing grid, and the appropriate match of active materials of both negative plates and positive plates, all these enable spiral valve-regulated sealed lead-acid battery (SPB), greatly restrain the release of hydrogen from negative plates, at the same time the generated oxygen, due to overcharge of positive plates, arrive at negative plates through the diaphragm and compose with lead in the negative, thus enable the recombination of gas inside of the battery and prevent the case of water loss so that water addition is free.

Comparing to flat battery, the spiral battery is made at high pressure through the spiral of plates of only 1mm. Special technique fashion characterizes the battery in many aspects:

1. Superior high rate discharge capability, with max. discharge rate of $18C_{10}$
2. Outstanding performance of high/low temperature, able to work under the temperature of -55℃～75℃
3. Steady high work voltage, higher power density
4. Robust structure have excellent performance of shock resistance
5. No floating electrolyte, able to placed at any direction

6. Fast chargeable charge is possible, 95% plus capacity may be charged within 40 minutes
7. Super service life, design float charging service life is more than 8 years
8. Excellent deep discharge performances in low current

Main application:

Instrument, electric tools, physical exercise devices, medical devices, solar light, electricity transferring equipment, standby power supply, Hybrid electric car and the start of the car

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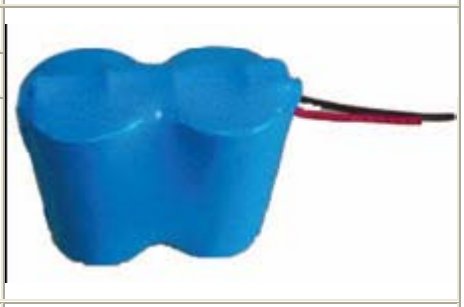
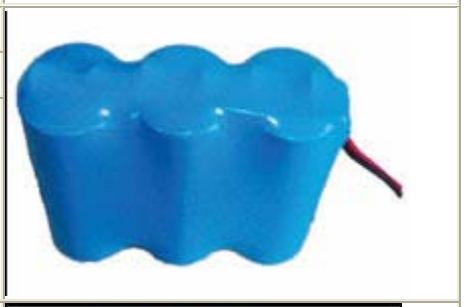
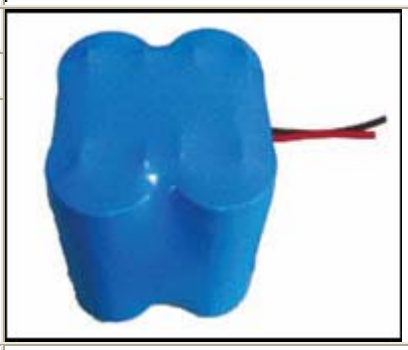
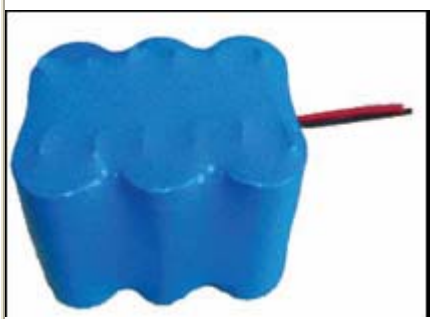
the integrated battery specifications of bosfa SPB series pure lead spiral batteries

type	Serial Number	Nominal voltage(V)	Capacity (C10Ah)	Dimensions(mm)				Weight (kg)	Picture
				Length	width	Height	Total height		
SPB-2.5	S-001	2	2.5	Diameter 34.5		61.2	68.1	0.15	
SPB-5	S-002	2	5	Diameter 44.5		73	81.5	0.29	
SPB-8	S-003	2	8	Diameter 44.5		100	108	0.45	
3-SPB-2.5	M-001	6	2.5	110	44	70	70	0.45	
3-SPB-8	M-002	6	8	135	51	100	100	1.4	
6-SPB-25	M-003	12	25	203	139	164	169	9	
6-SPB-30	M-004	12	30	203	139	164	169	9.6	
6-SPB-50	M-005	12	50	254	173	199	205	19.2	
6-SPB-60	M-006	12	60	254	173	199	205	20.4	

the grouped battery specifications of SPB series pure lead spiral batteries

type	Serial Number	(V) Nominal voltage	Capacity (C10Ah)	(mm)Dimensions				Weight (kg)	Picture
				Length	width	Height	Total height		
2-SPB-2.5	S-004	4	2.5	69	34.5	61.2	66	0.30	
2-SPB-5	S-005	4	5	89	44.5	73	80	0.63	
2-SPB-8	S-006	4	8	89	44.5	100	105	0.95	
3-SPB-2.5	S-007	6	2.5	104	34.5	61.2	66	0.44	
3-SPB-5	S-008	6	5	134	44.5	73	80	0.91	
3-SPB-8	S-009	6	8	134	44.5	100	105	1.43	
4-SPB-2.5	S-010	8	2.5	69	69	61.2	66	0.59	
4-SPB-5	S-011	8	5	89	89	73	80	1.2	
4-SPB-8	S-012	8	8	89	89	100	105	1.9	
6-SPB-2.5	S-013	12	2.5	104	69	61.2	66	0.9	
6-SPB-5	S-014	12	5	134	89	73	80	1.8	
6-SPB-8	S-015	12	8	134	89	100	105	2.8	

6-SPB-2.5	M-007	12	2.5	110	88	70	70	0.9	
6-SPB-8	M-008	12	8	135	102	100	100	2.7	
6-SPB-16	M-009	12	16	135	102	202	202	5.6	

the electrical performance of bosfa SPB series pure lead spiral batteries

type: SPB-2.5(2V2.5Ah)						
	discharge to 1.85V		discharge to 1.75V		discharge to 1.65V	
时间 time	constant current（A）	constant power（W）	constant current（A）	constant power（W）	constant current（A）	constant power（W）
2min	14.8	26.9	18	32	20.8	35.6
5min	9.8	18.3	11	20.1	12.2	21.7
10min	6.8	12.6	7.3	13.7	7.8	14.3
15min	5.1	9.9	5.7	10.7	5.8	10.7
20min	4.2	8.3	4.5	8.6	4.8	9
30min	3.2	6.3	3.3	6.4	3.4	6.6
45min	2.3	4.6	2.4	4.7	2.5	4.8
1h	1.8	3.6	1.84	3.7	1.9	3.7
2h	1	1.95	1.04	2	1.1	2.02
3h	0.75	1.41	0.78	1.56	0.79	1.58
4h	0.57	1.14	0.6	1.2	0.61	1.22
5h	0.46	0.92	0.48	1	0.49	1
8h	0.3	0.6	0.32	0.65	0.32	0.75
10h	0.25	0.5	0.26	0.52	0.26	0.52
20h	0.13	0.27	0.14	0.3	0.14	0.3

type: SPB-5(2V5Ah)						
	discharge to 1.85V		discharge to 1.75V		discharge to 1.65V	
time	time	constant current（A）	constant power（W）	constant current（A）	constant current（A）	constant power（W）
2min	26.2	48.2	33.5	52.7	39.7	56.2
5min	18.3	34.3	21.8	37.7	24.6	39.8
10min	12.6	24	14.5	26.2	15.7	27.5
15min	9.8	18.8	11	20.4	11.7	21.2
20min	8.1	15.6	8.9	16.8	9.4	17.5
30min	6	11.7	6.5	12.5	6.8	13
45min	4.4	8.6	4.7	9.1	4.9	9.4
1h	3.5	6.9	3.7	7.2	3.8	7.4
2h	1.95	3.9	2	4	2.1	4.1
3h	1.5	3	1.5	3	1.6	3.1
4h	1.2	2.3	1.2	2.3	1.2	2.4
5h	0.9	1.9	1	1.9	1	1.9
8h	0.6	1.2	0.6	1.2	0.6	1.2
10h	0.5	1	0.5	1	0.5	1
20h	0.26	0.5	0.3	0.5	0.3	0.5
type: SPB-8(2V8Ah)						
	discharge to 1.85V		discharge to 1.75V		discharge to 1.65V	
time	time	constant current（A）	constant power（W）	constant current（A）	constant current（A）	constant power（W）
2min	33.5	61.7	42.9	67.5	50.8	71.9
5min	26.4	49.4	31.4	54.3	35.4	57.3
10min	20.2	38.4	23.2	41.9	25.1	44
15min	15.7	30.1	17.6	32.6	18.7	34
20min	13	25	14.2	26.9	15	28
30min	9.6	18.7	10.4	20	10.9	20.8
45min	7	13.8	7.5	14.6	7.8	15
1h	5.6	11	5.9	11.5	6.1	11.8
2h	3.1	6.2	3.2	6.4	3.4	6.6
3h	2.4	4.8	2.4	4.8	2.6	4.96
4h	1.92	3.8	1.9	3.8	1.9	3.84
5h	1.44	3	1.6	3	1.6	3
8h	0.96	1.92	0.96	1.9	0.96	1.92
10h	0.8	1.6	0.8	1.6	0.8	1.6
20h	0.42	0.8	0.43	0.8	0.43	0.8

type: 3-SPB-2.5(6V2.5Ah)						
	discharge to 5.55V		discharge to 4.95V		discharge to4.95V	
time	time	constant current（A）	constant power（W）	constant current（A）	constant current（A）	constant power（W）
2min	14.8	80.7	18	96	20.8	106.8
5min	9.8	54.9	11	60.3	12.2	65.1
10min	6.8	37.8	7.3	41.1	7.8	42.9
15min	5.1	29.7	5.7	32.1	5.8	32.1
20min	4.2	24.9	4.5	25.8	4.8	27
30min	3.2	18.9	3.3	19.2	3.4	19.8
45min	2.3	13.8	2.4	14.1	2.5	14.4
1h	1.8	10.8	1.84	11.1	1.9	11.1
2h	1	5.85	1.04	6	1.1	6.06
3h	0.75	4.23	0.78	4.68	0.79	4.74
4h	0.57	3.42	0.6	3.6	0.61	3.66
5h	0.46	2.76	0.48	3	0.49	3
8h	0.3	1.8	0.32	1.95	0.32	2.25
10h	0.25	1.5	0.26	1.56	0.26	1.56
20h	0.13	0.81	0.14	0.9	0.14	0.9

type: 3-SPB-8(6V8Ah)						
	discharge to 5.55V		discharge to 4.95V		discharge to4.95V	
time	time	constant current（A）	constant power（W）	constant current（A）	constant current（A）	constant power（W）
2min	33.5	185.1	42.9	202.5	50.8	215.7
5min	26.4	148.2	31.4	162.9	35.4	171.9
10min	20.2	115.2	23.2	125.7	25.1	132
15min	15.7	90.3	17.6	97.8	18.7	102
20min	13	75	14.2	80.7	15	84
30min	9.6	56.1	10.4	60	10.9	62.4
45min	7	41.4	7.5	43.8	7.8	45
1h	5.6	33	5.9	34.5	6.1	35.4
2h	3.1	18.6	3.2	19.2	3.4	19.8
3h	2.4	14.4	2.4	14.4	2.6	14.88
4h	1.92	11.4	1.9	11.4	1.9	11.52
5h	1.44	9	1.6	9	1.6	9
8h	0.96	5.76	0.96	5.7	0.96	5.76
10h	0.8	4.8	0.8	4.8	0.8	4.8
20h	0.42	2.4	0.43	2.4	0.43	2.4

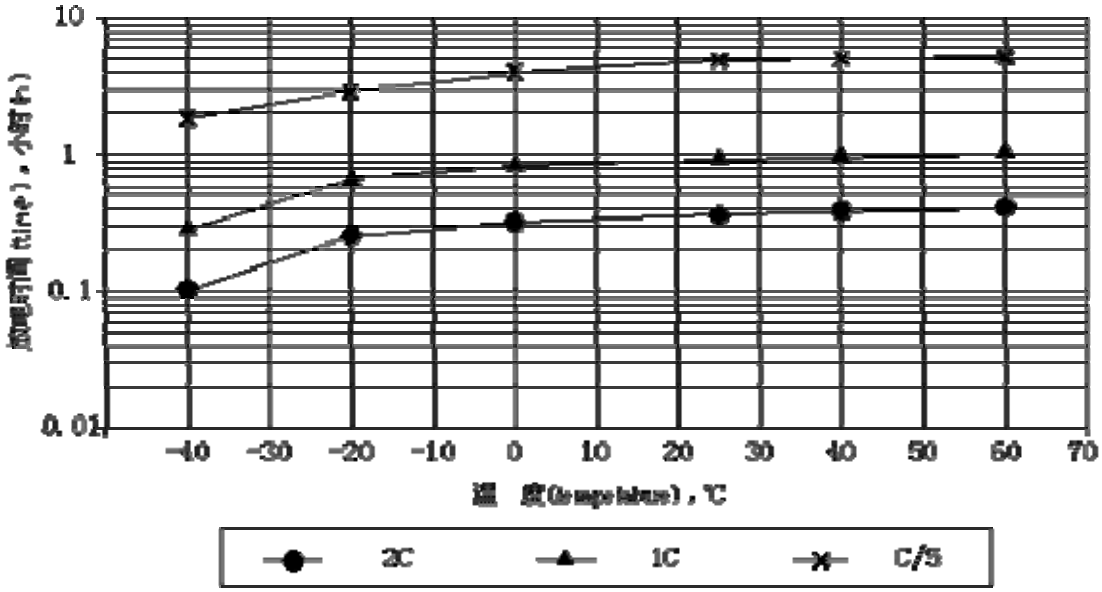
type: 6-SPB-2.5(12V2.5Ah)						
	discharge to 11.1V		discharge to10.5V		discharge to9.9V	
time	time	constant current（A）	constant power（W）	constant current（A）	constant current（A）	constant power（W）
2min	14.8	161.4	18	192	20.8	213.6
5min	9.8	109.8	11	120.6	12.2	130.2
10min	6.8	75.6	7.3	82.2	7.8	85.8
15min	5.1	59.4	5.7	64.2	5.8	64.2
20min	4.2	49.8	4.5	51.6	4.8	54
30min	3.2	37.8	3.3	38.4	3.4	39.6
45min	2.3	27.6	2.4	28.2	2.5	28.8
1h	1.8	21.6	1.84	22.2	1.9	22.2
2h	1	11.7	1.04	12	1.1	12.12
3h	0.75	8.46	0.78	9.36	0.79	9.48
4h	0.57	6.84	0.6	7.2	0.61	7.32
5h	0.46	5.52	0.48	6	0.49	6
8h	0.3	3.6	0.32	3.9	0.32	4.5
10h	0.25	3	0.26	3.12	0.26	3.12
20h	0.13	1.62	0.14	1.8	0.14	1.8

type: 6-SPB-8(12V8Ah)

	discharge to 11.1V)		discharge to10.5V		discharge to9.9V	
time	constant current（A）	constant power（W）	constant current（A）	time	constant current（A）	constant power（W）
2min	33.5	370.2	42.9	405	50.8	431.4
5min	26.4	296.4	31.4	325.8	35.4	343.8
10min	20.2	230.4	23.2	251.4	25.1	264
15min	15.7	180.6	17.6	195.6	18.7	204
20min	13	150	14.2	161.4	15	168
30min	9.6	112.2	10.4	120	10.9	124.8
45min	7	82.8	7.5	87.6	7.8	90
1h	5.6	66	5.9	69	6.1	70.8
2h	3.1	37.2	3.2	38.4	3.4	39.6
3h	2.4	28.8	2.4	28.8	2.6	29.76
4h	1.92	22.8	1.9	22.8	1.9	23.04
5h	1.44	18	1.6	18	1.6	18
8h	0.96	11.52	0.96	11.4	0.96	11.52
10h	0.8	9.6	0.8	9.6	0.8	9.6
20h	0.42	4.8	0.43	4.8	0.43	4.8

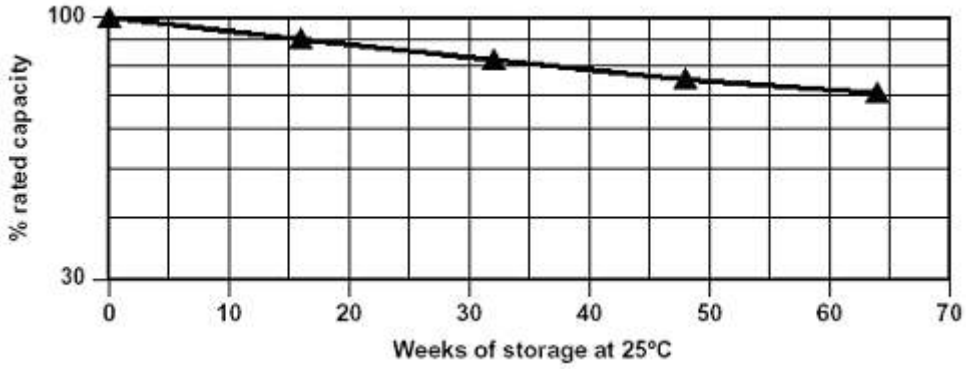
characteristic curve of bosfa SPB series pure lead spiral batteries

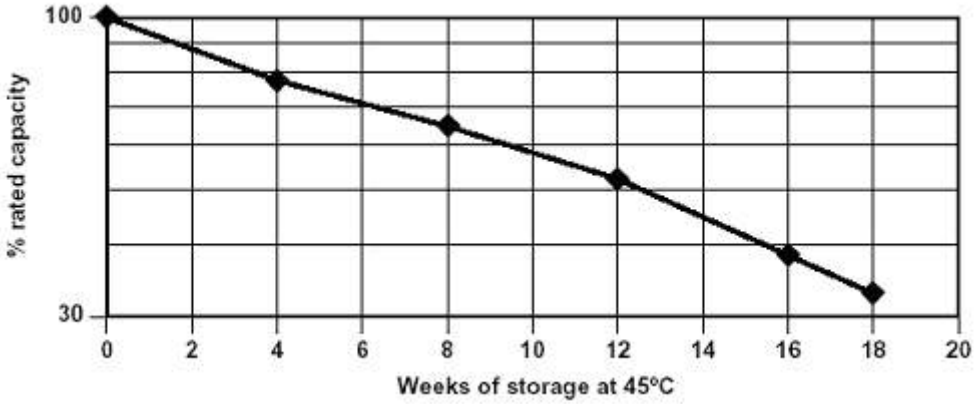
Capacity affected by temperature

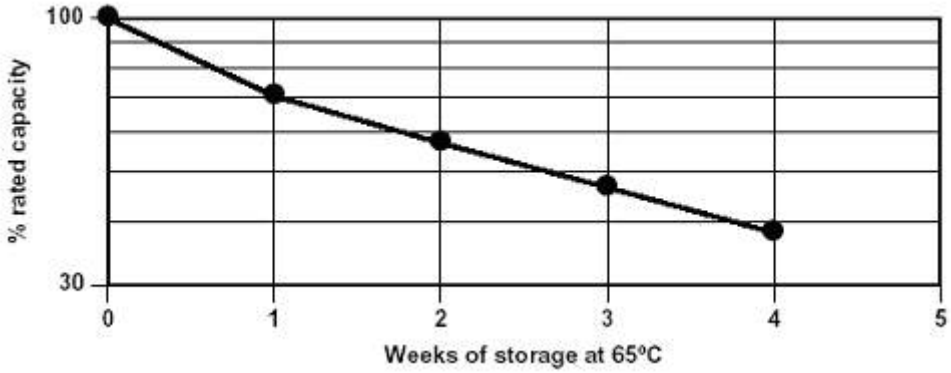


Storage time affected by temperature

Most batteries lose their stored energy when allowed to stand on open circuit due to the fact that the active materials are in a thermodynamically unstable state. The rate of self-discharge is dependent both on the chemistry of the system as well as on the temperature at which the battery is stored.

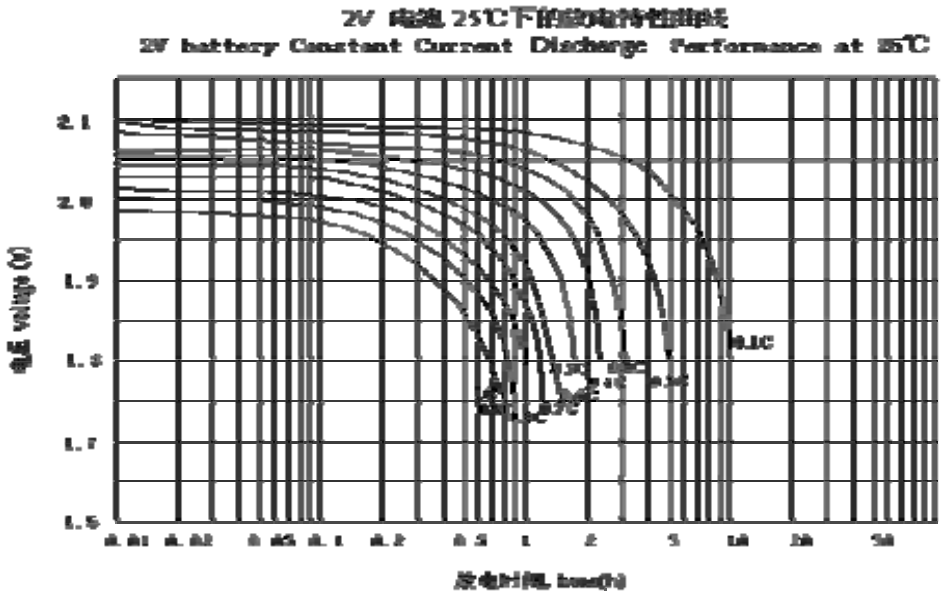


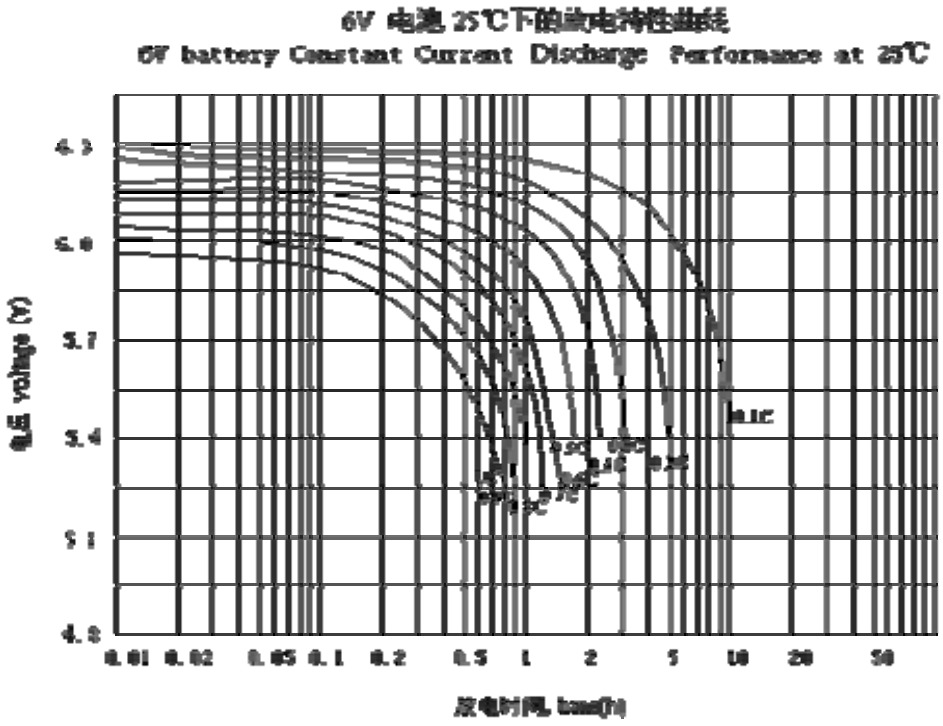




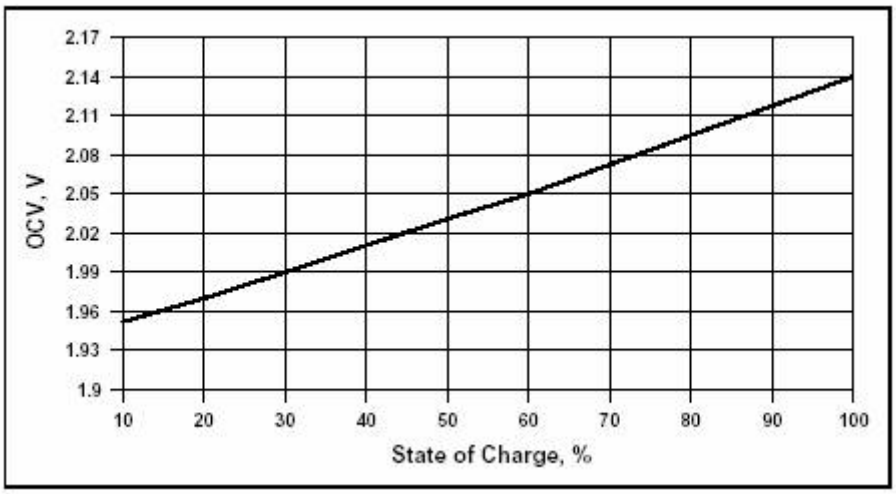
Storage time affected by temperature

4.Discharge characteristic





Open Circuit Voltage Vs. State of Charge



Charge constant voltage

Standby: voltage 2.27～2.35V/cell at 25℃（25℃）

Cycle: initial charging current less than $0.6C_{10}$, voltage 2.45～2.5V /cell at 25℃