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Institute of Chemical Power Sources of Light Industry

National Battery Inspection & Testing Center

Battery Testing Laboratory，Institute of Electrochemical Power Sources of Light Industry

TEST REPORT

Report ID (2026)LR03W23

Sample： Alkaline Zn/MnO_2 Battery

Trademark： KELIQI

Designation： LR03

Manufacturer： Xinxiang Xinkeli Power Co., Ltd.

Client： Xinxiang Xinkeli Power Co., Ltd.

Test classification： Sample Provided Test

Date of issue： March 9, 2026

Institute of Chemical Power Sources of Light Industry
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Test Report

Report ID (2026)LR03W23 page 1 of 3

Sample	Alkaline Zn/MnO_2 Battery	**Trademark**	KELIQI
Manufacturer	Xinxiang Xinkeli Power Co., Ltd.	**Designation**	LR03
Client	Xinxiang Xinkeli Power Co., Ltd.	**Date of production**	January 5, 2026
Client address	No.1 workshop, No.10 Gaoxin Road, National Hi-Tech Industrial Development Zone, Xinxiang City, Henan, CHINA		
Explanation	The above information is provided by the client		
Date of receipt	January 23, 2026	**Test period**	From January 23, 2026 to February 26, 2026
Description of sample	Normal	**Test classification**	Sample Provided Test
Test environment	Temp 20℃ ±5℃		
Test instrument	Shock testers, Electrodynamic vibrator testing system, Temperature/humidity chamber, DM-2200A auto-testing system for dry batteries		
Test basis	IEC 60086-5:2021 *Primary batteries - Part 5:Safety of batteries with aqueous electrolyte*		
Test items	Safety performance: Intended use tests (storage after partial use, transportation vibration, transportation shock, climatic-temperature cycling), reasonably foreseeable misuse tests (incorrect installation, overdischarge, external short circuit, free fall test).		
Conclusion	The test results of the test item are in accordance with the specifications in IEC 60086-5:2021. Date of issue: March 9, 2026		
Remark	The test results are only applicable for the sample provided by clients.		

Authorized signer: **Verified by:** 钱君杰 **Chief tester:**

☐Director ☐ Technical Manager

☐Vice Director ☐ Quality Manager

Test Report

1. Test results of safety performance

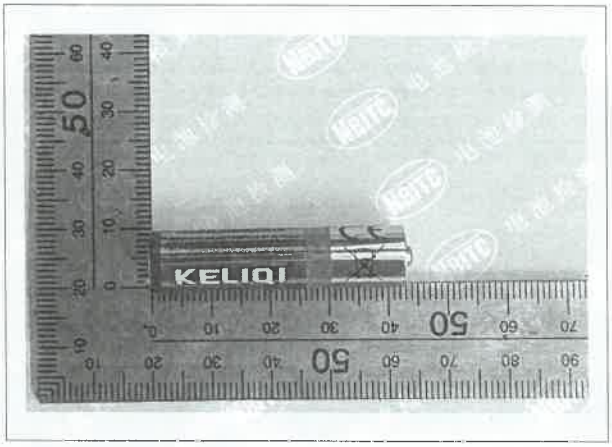
Test item	Specification	Numbers tested	Test result	Verdict Pass/Fail
1 Intended use				P
Storage after partial use Undischarged battery is discharged with 24Ω,15s/min,8h/d discharge for 7.25h, then storage at 45℃±2℃ for 30 days.	No leakage No explosion* No fire	5	None leakage None explosion None fire	P
Transportation vibration （1）Record the batteries's open circuit voltage （2）Simple harmonic motion: Amplitude: ±0.8mm Frequency range: 10 Hz ~55 Hz Varied rate: 1Hz/min Vibration directions: each of three mutually perpendicular axes of the battery Vibration time: 85min~95min （3）Rest the batteries for 1h.	No leakage No explosion No fire	5	None leakage None explosion None fire	P
Transportation shock （1）Record the batteries's open circuit voltage （2）Shock The minimum average acceleration during the first 3ms:75g_n The peak acceleration: 125g_n～175g_n Number of shocks: one shock in each of three mutually perpendicular axes of the battery （3）Rest the batteries for 1h.	No leakage No explosion No fire	5	None leakage None explosion None fire	P
Climatic-temperature cycling （1）Temperature cycling procedure: 70℃, 4h→20℃, 2h→-20℃, 4h→20℃. （2）Interval between two temperatures: ≤30min. （3）Repeat this sequence for 10 cycles. （4）Store the batteries for 7 days.	No explosion No fire	5	None explosion None fire	P
2 Reasonably foreseeable misuse				P
Incorrect installation: Four undischarged batteries connected in series with one of the four batteries reversed (the tested battery). The circuit is completed until the battery case temperature has returned to ambient. The resistance of the inter-connecting circuitry is within 0.1Ω.	No explosion No fire	5	None explosion None fire	P
Overdischarge: One battery is predischarged** until the on-load voltage falls to 0.6V, then the battery is connected with three undischarged batteries and a 20Ω resistor in series. The discharge shall be continued for 24 h.	No explosion No fire	5	None explosion None fire	P
External short circuit: An undischarged battery is subjected to a short-circuit condition with the resistance of the inter-connecting circuitry within 0.1Ω, The circuit is completed until the battery case temperature has returned to ambient.	No explosion No fire	5	None explosion None fire	P
Free fall test Undischarged test batteries are dropped from a height of 1m onto a concrete surface, twice in each of the three axes. Then rest the batteries for 1h.	No explosion No fire	5	None explosion None fire	P

Note: * Definition of battery explosion: an instantaneous release wherein solid matter from any part of the battery is propelled to a distance greater than 25 cm away from the battery.

** Predischarge: 24Ω,15s/min,8h/d discharge, end-point voltage 0.6V.

Test Report

2. Picture



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