

ICS 29.220.10

CCS K 82



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 10077-2026

Replacing GB/T 10077-2008

**Classification, designation and basic characteristics of lithium
primary batteries**

锂原电池分类、型号命名及基本特性

Issued on: July 30, 2026

Implemented on: February 1, 2027

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

This document was issued on 30 July 2026 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 February 2027.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies.

It is classified under ICS 29.220.10 and Chinese classification K 82.

The document runs to 23 pages. The identification, the dates, the classification and the table of contents on this page are taken from the cover and the printed contents of the standard itself.

This document was drafted in accordance with GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document replaces GB/T 10077-2008 "Classification, designation and basic

characteristics of lithium primary batteries". Compared with the 2008 edition, apart from structural adjustments and editorial changes, the main technical changes are as follows:

- the term "cylindrical battery" has been deleted and the terms "button battery" and "prismatic battery" renumbered, with the identifier "F" added for prismatic batteries (see 3.1 and 3.2; 3.1 to 3.3 of the 2008 edition);
- the term "special-shaped battery" has been deleted (see 3.4 of the 2008 edition);
- the terms "nominal voltage", "maximum open-circuit voltage", "maximum continuous discharge current", "standard discharge current" and "standard discharge resistance" have been added (see 3.4, 3.5, 3.7, 3.8 and 3.9), and the terms "initial period of a battery" and "standard ambient conditions" have been deleted;
- the positive electrode material of the lithium-carbon fluoride battery has been changed from "carbon fluoride (CF)_x" to "carbon fluoride polymer (CF)_x" (see Table 1; Table 1 of the 2008 edition);
- the maximum open-circuit voltage of the lithium-iron disulfide battery has been changed to 1.90 V (see Tables 1 and 12; Tables 1 and 11 of the 2008 edition);
- the nominal voltage of the lithium-sulfur dioxide battery has been changed to 3.0 V and its maximum open-circuit voltage to 3.05 V (see Table 1; Table 1 of the 2008 edition);
- the electrochemical system "lithium-sulfuryl chloride battery" has been added (see Table 1);
- the designation system has been extended: P/H for the high capacity high power type, D for the low temperature type, T for the ordinary wide temperature type and HT for the extra wide temperature type (see 5.1), and Figures 1, 2 and 3 have been added;
- the characteristic "resistance/current" has been changed to "standard discharge resistance/current" throughout the tables (see Tables 2, 4, 5, 7, 8, 9, 11 and 12; the corresponding tables of the 2008 edition);
- the basic characteristics of a long list of models have been added or revised, among them BR17335, BR1632, BR2032, BR2330, BR2335, BR2477, CR14250, CR14335, CR14505, CR17250, CR17335, CR17450, CR26500, CR34615, CR920, CR2020, CR2050, CR2325, CR2440, CR3832, CP9V, ER13170, ER14150, ER14250M, ER14335M, ER17335, ER34615 and ER34615M;
- a clause on button lithium-thionyl chloride batteries has been added, with the characteristic data for each model (see 6.3).

1 Scope

GB/T 10077 is the Chinese standard that classifies lithium primary batteries, gives them

their model designations and states their basic characteristics. It is the document behind every code stamped on a lithium cell sold in China: CR2032, BR2477, ER14505, CP9V and the rest. It specifies the classification, the designation and the basic characteristics of lithium primary batteries, and it applies to their design, production, testing and acceptance. Six electrochemical systems are covered: lithium-carbon fluoride, lithium-manganese dioxide, lithium-thionyl chloride, lithium-sulfur dioxide, lithium-iron disulfide and, new in this edition, lithium-sulfuryl chloride. For each model the document fixes the nominal voltage, the maximum open-circuit voltage, the discharge conditions and the minimum average duration, which is what a buyer actually compares. The 2026 edition replaces GB/T 10077-2008, adds a large number of models, extends the designation system to cover high power, low temperature and wide temperature types, and introduces the standard discharge resistance and current as the reference conditions.

2 Normative references

The contents of the following documents constitute indispensable provisions of this document through normative reference in the text. For dated references, only the edition corresponding to that date applies. For undated references, the latest edition, including all amendments, applies.

GB/T 8897.1-2021 Primary batteries - Part 1: General.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 button battery: a cylindrical battery whose overall height is less than its diameter, shaped like a button or a coin. Note: the shape is denoted by the letter R.

3.2 prismatic battery: a battery in the shape of a parallelepiped whose faces are at right angles. Note: the shape is denoted by the letter P or F.

3.3 service output: the discharge time, capacity or energy output of a battery under specified discharge conditions.

3.4 nominal voltage (of a primary battery): a suitable approximate value of the voltage used to identify a battery or an electrochemical system. [SOURCE: GB/T 2900.41-2008, 482-03-31, modified]

3.5 maximum open-circuit voltage: the highest voltage a battery can deliver in the open-circuit condition.

3.6 minimum average duration (MAD): the minimum discharge time, capacity or energy output that a sample battery discharged at the standard discharge resistance or current shall meet. Note: a constant resistance result is expressed in hours (h), a constant current result in ampere-hours (Ah) or milliampere-hours (mAh).

3.7 maximum continuous discharge current: the largest current at which a battery discharged at constant current to the cut-off voltage can still deliver at least 50 % of its nominal capacity.

3.8 standard discharge current: the specified current at which a battery of a given type and model, discharged at constant current, delivers its nominal capacity.

3.9 standard discharge resistance: the specified resistance at which a battery of a given type and model, discharged at constant resistance, delivers its nominal capacity.

5 Designation of lithium primary batteries

Clause 5 is organised as follows: 5.1 Battery designation system; 5.2 Electrochemical system codes.

6 Basic characteristics of lithium primary batteries

Clause 6 is organised as follows: 6.1 Lithium-carbon fluoride batteries; 6.2 Lithium-manganese dioxide batteries; 6.3 Lithium-thionyl chloride batteries; 6.4 Lithium-sulfur dioxide batteries; 6.5 Lithium-iron disulfide batteries; 6.6 Lithium-sulfuryl chloride batteries.