

Sodium Battery Dry Cell Product Specification

Product Model: CU-PO-S1-10H101

Version: V1.0

Release Date: 2025-09-15

1. Basic Product Information

Item	Specification
Cell Model	425868
Nominal Voltage	2.9V
Nominal Capacity	≥950mAh (0.2C)
Dimensions (L × W)	130mm × 75mm
Electrochemical System	NFM/HC
Active Material Ratio	NFM 95.5% / HC 95.5%
Coating Density (mg/cm ²)	NFM 13.84 / HC 6.42
Electrode Compaction Density (g/cc)	NFM 2.70 / HC 0.95
Cell Structure	Stacked
Recommended Electrolyte Filling Amount	6g
Recommended Electrolyte	KLD-NF96F

2. Charge and Discharge Parameters

Charge Voltage: 3.9 V

Standard Charge Current:0.5C

Discharge Cut-off Voltage: 1.50 V

Standard Discharge Current: 1.0C

3. Environmental Adaptability

Charging Temperature: 0°C ~ 45°C

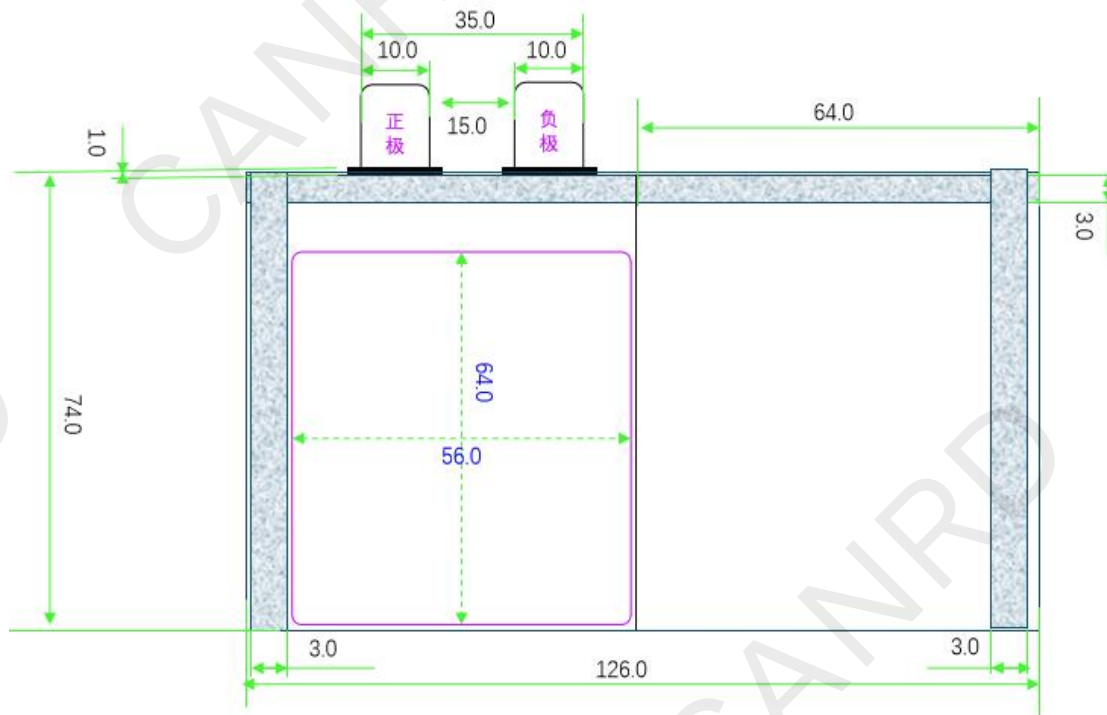
Discharging Temperature: -20°C ~ 45°C

Storage Temperature: 25°C (Recommended)

Relative Humidity: ≤85% RH (Non-condensing)

4. Illustrations

Refer to the original drawing for dimensions and tab positions.



5. Post-Processing Procedure for Dry Cell

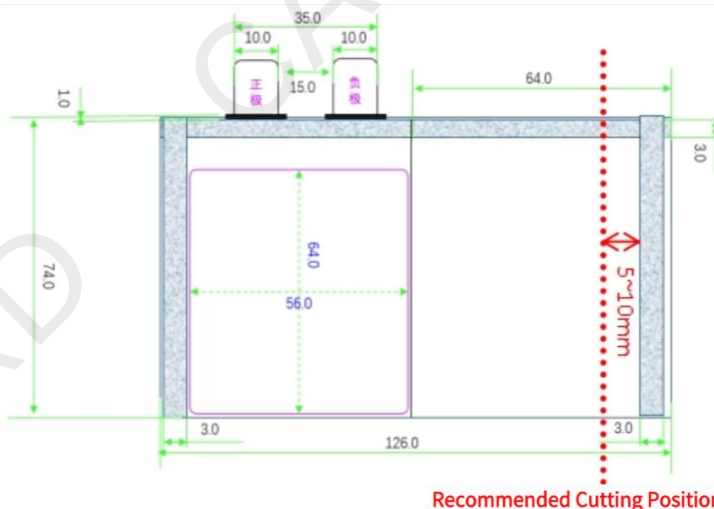
The following operating instructions **use manual electrolyte injection as an example and must be carried out in a dry room or glove box**. The cell orientation shown in the figure below is regarded as the front side of the cell.

1) Inspection: Before operation, visually inspect the entire cell for any abnormalities, such as broken tabs, air leakage, or damage to the aluminum-plastic pouch.

2) Creating the Electrolyte Injection Port: Cut an electrolyte injection port at a position 5–10 mm away from the edge of the gas bag.

Note: It is strongly recommended to retain part of the gas bag during the first electrolyte injection.

3) Electrolyte Injection: Using the figure on the right as a reference, rotate the cell 90° counterclockwise so that the cut gas bag opening faces upward (a battery holder may be used for assistance) and place the cell vertically. Then place the cell on a balance and tare it to **zero**. Use a pipette or disposable dropper to inject an appropriate amount of electrolyte through the injection port.



4) Vacuum Resting: Place the cell into a vacuum chamber, apply a vacuum of ≤ -85 kPa, and leave it for 3 minutes.

5) Vacuum Pre-Sealing: Vacuum seal the cell under a vacuum condition of ≤ -85 kPa.

6) Open-Circuit Voltage Measurement After Electrolyte Injection: Measure the open-circuit voltage (OCV) after electrolyte injection. Before any charge/discharge process, the OCV is approximately 0 V. Depending on the electrochemical system, the voltage may be positive or negative.

7) Resting: It is recommended to rest the cell for 48 hours at room temperature or 24 hours at 45°C. Depending on cell size, electrolyte wetting performance, and electrolyte filling amount, customers may reasonably adjust the temperature and duration according to actual requirements.

8) Formation and Capacity Grading After Resting: For the recommended formation and capacity grading procedure (initial charge/discharge activation), please refer to the following section.

6. Recommended Formation and Capacity Grading Procedure

6.1 With Hot-Press Formation and Capacity Grading Conditions

Formation Conditions: 45°C, 0.9 MPa

1) Rest for 60 minutes (until the cell temperature reaches 45°C).

2) Charge at 0.05C constant current for 8 hours.

3) Rest for 1 minute.

4) Charge at 0.1C constant current for 3 hours.

After the cell body cools down to 25°C, perform degassing and secondary sealing. **It is recommended not to completely remove the gas bag and to retain a portion of it.**

Capacity Grading Conditions: 25°C, 0.9 MPa

1) Rest for 3 minutes.

2) Charge using a 0.2C constant current–constant voltage (CC-CV) method to 3.95 V, with a cutoff current of 0.05C.

3) Rest for 3 minutes.

4) Discharge at 0.2C constant current to 1.5V.

(Complete the first charge/discharge cycle and calculate the initial coulombic efficiency.)

6.2 Without Hot-Press Formation and Capacity Grading Conditions

Neware Test System Conditions: 25°C, 0.2 MPa

1) Rest for 3 minutes.

2) Charge at 0.05C constant current to 3.95 V.

3) Rest for 3 minutes.

4) Discharge at 0.2C constant current to 1.50 V.

(Complete the first charge/discharge cycle and calculate the initial coulombic efficiency.)

6.3 Notes

If the cell needs to remain in a **pending-test** condition for an extended period after capacity grading, it is recommended to perform an additional half-charge cycle after the capacity grading process.

