

Encell Battery – Watering Instructions

WARNING

WEAR EYE PROTECTION AND PROTECTIVE CLOTHING WHEN WORKING WITH BATTERIES.

ELECTROLYTE IS HIGHLY CORROSIVE. IF ELECTROLYTE SPLASHES INTO THE EYES OR ONTO THE SKIN, RINSE WITH PLENTY OF CLEAR WATER AND SEEK IMMEDIATE MEDICAL ADVICE.

FOLLOW THE SAFETY DATA SHEET (SDS) FOR ADDITIONAL INFORMATION INCLUDING HAZARDS IDENTIFICATIONS, ELECTROLYTE FIRST AID MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE.

The following provides the recommended watering instructions for the cells. Cells should be filled with **ONLY** deionized (DI) water using the instructions below for best performance. Using other liquids will cause permanent damage to the cells. **FAILURE TO FOLLOW THIS PROCEDURE WILL VOID THE MANUFACTURERS WARRANTY.**

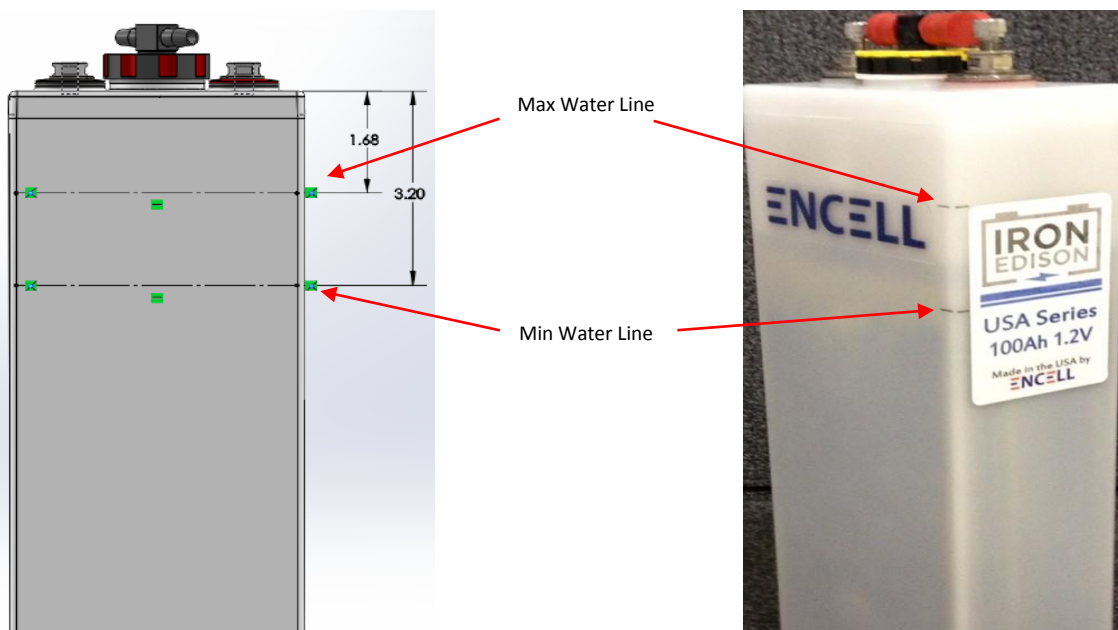
General Information

Electrolyte levels of the cells should be monitored periodically. There are two fill lines indicated on each cell representing a minimum and maximum fill line (see Figure 1).

- The minimum fill line is located at 3.2 inches below the top of the cell jar. The minimum fill line indicates the electrolyte level, at the end of discharge cycle, that would trigger a watering during subsequent charge cycle.
- The maximum fill line is 1.68 inches below the top of the cell jar. The maximum line indicates where the automatic stop valve will stop the flow of DI water when using the automatic watering system. Note: only use automatic watering system at the end of a charge cycle.

Frequency of filling cells will be dependent on the charge current and amount of charge input of the battery application. Increased current and charge input will increase the frequency of filling cells. During conditioning/maintenance cycling, electrolyte levels will require more frequent monitoring/filling.

Figure 1: Cell Diagram with Minimum and Maximum Fill Lines



Detailed Cell Watering Instructions

1. Electrolyte levels of all cells should be monitored for the need for filling at the end of a discharge cycle on a periodic basis.
2. If the electrolyte level at the end of a discharge cycle is below the minimum fill line on any cell in the battery system, the cells require watering. **DO NOT WATER USING AUTOMATIC WATERING SYSTEM DURING DISCHARGE OR AT REST.**
3. **IMPORTANT:** Watering of the cells using the watering system with automatic stop valves should **ONLY** occur at the end of a charge cycle. The end of a charge cycle represents the highest level the electrolyte will rise during a cycle. Thus, watering during this time using the automatic stop valve will protect against overflow of electrolyte during charge. Filling cells during any other time using the automatic stop valves may cause electrolyte overflow during charge.
4. If visual monitoring during a discharge cycle triggers a watering event due to electrolyte levels being below the minimum fill line, use the automatic watering system during the last hour of the subsequent charge cycle to fill all the cells in the system with DI water.
 - a. Connect the Water Hand Pump to a source of DI water.
 - b. Connect the Water Hand Pump to the ¼" Barb Male Coupler with Dust Protector that connects to the watering system.
 - c. Pump DI water through the system until the cells are full. The watering valves are equipped with an automatic stop valve which will stop the flow of DI water when the cells have reached the maximum fill line. The water pump will exhibit pressure when all cells are full. Do not apply additional pressure to the system once the cells are full.
5. If the electrolyte level rises above the maximum fill line, the watering valve requires maintenance. Use the valve wrench to remove the valve and rinse the valve with DI water.