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THE CHEMISTRIES

Zinc Chloride

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ADVANTAGES AND APPLICATIONS

Zinc Chloride and Zinc Carbon primary batteries are inexpensive alternatives for low power and intermittent device applications, i.e. flashlights and smoke alarms. In addition to their suitability for infrequent usage applications, Mallory® Super zinc chloride batteries are environmentally-friendly with no added mercury and constructed to be leak resistant.

CHEMISTRY CONSTRUCTION

The can enclosing the cell materials is made of zinc and also functions as the anode. A paste-like sleeve of flour and starch, saturated with electrolyte, lines the inside of the can. The cathode is a core of manganese dioxide and is also infused with electrolyte to ensure adequate contact to the interior. In Zinc Carbon cells the electrolyte solution is made of ammonium chloride and zinc chloride, whereas the Zinc Chloride electrolyte solution is made of zinc chloride only - allowing for better performance characteristics and an added benefit of becoming drier as it discharges. A carbon rod is inserted in the manganese dioxide core and is in direct contact with the cathode material. It acts as the current collector for the cathode. The anode current collector is formed by pressing a metal end closure at the bottom of the zinc can.

PERFORMANCE CHARACTERISTICS

The open circuit voltage of zinc chloride and zinc carbon cells is typically 1.5 Volts and the approximate shelf-life is 1 year.

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