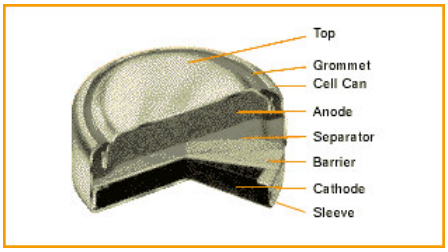
THE CHEMISTRIES

Silver Oxide

OVERVIEW | TECHNICAL BULLETIN



ADVANTAGES AND APPLICATIONS

The DURACELL® zinc/silver oxide cell is noted for its high volumetric energy density and its ability to deliver this energy at relatively high current drains. Silver oxide cells are ideal for miniature devices where space is limited, such as small electronic and photographic equipment. Their relatively high cost limits their usage to specialized applications.

CHEMISTRY

The silver cell uses an amalgamated zinc anode, silver oxide as the cathode material, and a potassium hydroxide electrolyte.

CONSTRUCTION

The silver cell is manufactured in button cell configurations. A typical DURACELL silver button cell is shown above.

RATED CAPACITY

The silver button cell ranges from 14 mAh to 180 mAh.

PERFORMANCE CHARACTERISTICS

Voltage

The open circuit voltage of the silver cell is 1.6 V. Typical median operating voltage is 1.5 to 1.2 V.

Discharge Characteristics

The silver oxide battery system has a flat discharge curve.

Energy Density

60 Wh/lb. (130 Wh/kg); 8.2 Wh/in.3 (500 Wh/l).

Effect of Discharge Load and Temperature

The silver oxide system is capable of discharge at relatively heavy loads. The silver system is best suited for operation from -4°F to 130°F (-20°C to 54°C).

Shelf Life

The charge retention of the silver cell is over 84% after two years of storage at 70°F (21°C).