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Text of the abstract

The present invention provides an aqueous electrolyte for use in rechargeable zinc-halide storage batteries that possesses improved stability and durability and improves zinc-halide battery performance (e.g., energy efficiency, Coulombic efficiency, and/or the like). One aspect of the present invention provides an electrolyte for use in a secondary zinc bromine electrochemical cell comprising from about 30.00 wt% to about 50.00 wt% of ZnBr_2 ; from about 22.50 wt% to about 40.00 wt% of H_2O ; from about 3.00 wt% to about 9.50 wt% of KBr ; from about 7.75 wt% to about 14.00 wt% of KCl ; from about 0.25 wt% to about 2.25 wt% of Poly(ethylene glycol) dimethyl ether (MPEG) 2000; and from about 0.075 wt% to about 1.25 wt% of Poly(ethylene glycol) dimethyl ether (MPEG) 1000.