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- (71) Applicant (for all designated States except US): **EVEREADY BATTERY COMPANY, INC.** [US/US]; 533 Maryville University Drive, St. Louis, MO 63141 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WEBBER, Andrew, A.** [GB/US]; 32611 Greenwood Dr., Avon Lake, OH 44012 (US). **KAPLIN, David, A.** [US/US]; 1167 Bonnie Lane, Mayfield Heights, OH 44124 (US).
- (74) Agent: **TOYE, Russell, H, Jr.**; Eveready Battery Company, Inc., 25225 Detroit Road, Westlake, OH 44145 (US).
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(54) Title: LOW TEMPERATURE Li/FeS₂ BATTERY

(57) **Abstract:** The invention is an electrochemical battery cell, such as a Li/FeS₂ cell, with a nonaqueous liquid electrolyte having a solvent with a high ether content and a solute including LiI and one or more additional salts, preferably LiCF₃SO₃, that can avoid a sharp drop in voltage on high rate and high power discharge at low temperatures, while still providing reasonable capacity on high rate and high power discharge at room temperature. The electrolyte solvent includes 1,3-dioxolane and 1,2-dimethoxyethan in a volume ratio greater than 45 : 55 and less than 85 : 15. When the total solute concentration in the electrolyte is low (0.40 to 0.65 mol/l solvent), the solute contains at least 35 mole percent LiI, and when the total solute concentration in the electrolyte is high (greater than 0.65 to 2.0 mol/l solvent), the solute contains less than 35 mole percent LiI.



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