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(54) **RECHARGEABLE LITHIUM BATTERIES**

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(57) **ABSTRACT**

A rechargeable lithium battery includes a positive electrode including a positive electrode active material including lithium cobalt-based oxide, a negative electrode including a carbon-based negative electrode active material and a silicon-based negative electrode active material, a separator between the positive electrode and the negative electrode, and an electrolyte solution. The silicon-based negative electrode active material is included in an amount of about 0.1 wt % to about 10 wt % based on the total amount of the carbon-based negative electrode active material and the silicon-based negative electrode active material. The electrolyte solution includes a non-aqueous organic solvent, a lithium salt, and an additive, and the additive includes a first compound that is a compound represented by Chemical Formula 1, $CsPF_6$, or a combination thereof, where R^1 and R^2 are each independently a fluoro group or a C1 to C4 fluoroalkyl group substituted with at least one fluoro group.

Chemical Formula 1