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## (54) NONAQUEOUS ELECTROLYTIC SOLUTION AND LITHIUM-ION SECONDARY BATTERY

(57) A nonaqueous electrolytic solution used in a lithium ion secondary battery can provide good output characteristics and cycle characteristics and suppresses deterioration in interface resistance.

A nonaqueous electrolytic solution according to an embodiment is a nonaqueous electrolytic solution including a supporting salt, an aprotic solvent, a copolymer represented by general formula (1) and having a weight-average molecular weight of 200,000 or more and 600,000 or less, and vinylene carbonate, but not including 4-fluoro-1,3-dioxolan-2-one. The content of the copolymer is 0.5 to 2.5 mass% relative to the total amount of the supporting salt, the aprotic solvent, and the copolymer. The content of the vinylene carbonate is 0.5 to 2.5 mass% relative to the total amount of the supporting salt, the aprotic solvent, and the copolymer.

EP 4 451 407 A8

[Chem. 1]

$$\begin{array}{c|c}
CH_3 \\
CH_2 \\
O
\end{array}$$

$$\begin{array}{c|c}
CH_2 \\
O
\end{array}$$

$$\begin{array}{c|c}
CH_2 \\
O
\end{array}$$

$$\begin{array}{c|c}
CH_2 \\
CH_2
\end{array}$$

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