Title (en)

AQUEOUS ELECTROLYTE, REDOX FLOW BATTERY, AND USE OF SAME

Title (de)

WÄSSRIGER ELEKTROLYT, REDOX-FLOW-BATTERIE UND DEREN VERWENDUNG

Title (fr)

ÉLECTROLYTE AQUEUX, BATTERIE A FLUX REDOX ET LEUR UTILISATION

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Application

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Abstract (en)

[origin: WO2020108786A1] The invention relates to an aqueous electrolyte solution having a temperature of at least 30 °C and containing a) an organic compound containing at least one redox-active group of formula (Ia) and hydrochloric acid and/or a salt selected from the group of the ammonium salts having inorganic or organic ions, the salts having tetrafluoroborate anions or the salts of trifluoromethanesulfonic acid, (formula Ia) and/or containing b) an organic compound containing at least one redox-active group of formula (Ib) and/or containing c) an organic compound containing at least one redox-active group of formula (Ic), wherein R1, R2, R3 and R4 mean alkyl or R1 and R2 and R3 and R4 each form a cycloaliphatic or heterocyclic moiety together with the common carbon atom, X means -O or -S, Y is -CH2-, -O-, -S-, -SO-, -SO2-, -NR5- or -N +R5R6- (Anm-)1/m, Q means -O-, -S-, -NH-, -NR6a -NR6aR6b +- (Anm-)1/m, -PR6a- or -SiR6aR6b-, or -Q- represents a covalent bond, R5, R6, R6a and R6b are monovalent organic moieties, An means an inorganic or organic anion having a valence of m, and m represents an integer between 1 and 4. The electrolyte can be used in redox flow batteries and is characterized by high stability of the redox-active compounds at elevated temperatures.

IPC 8 full level

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