Title (en)

ELECTROCHEMICAL GAS PRODUCTION CELL, IN PARTICULAR A MERCURY-FREE HYDROGEN PRODUCTION CELL

Title (de)

ELEKTROCHEMISCHE GASENTWICKLUNGSZELLE, INSBESONDERE QUECKSILBERFREIE WASSERSTOFFENTWICKLUNGSZELLE

Title (fr)

CELLULE GÉNÉRATRICE DE GAZ ÉLECTROCHIMIQUE, EN PARTICULIER CELLULE GÉNÉRATRICE D'HYDROGÈNE SANS MERCURE

Publication

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Application

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Priority

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- EP 2019085689 W 20191217

Abstract (en)

[origin: WO2020148058A1] The problem addressed by the present invention is that of providing an electrochemical cell, and in particular a mercury-free hydrogen production cell, which is free of Raney nickel and can correspond to the electrochemical gas production cells that have hitherto been produced using Raney nickel in terms of a blank gassing rate and the other electrochemical characteristics. The problem is solved according to the invention by means of an electrochemical gas production cell (2), in particular a mercury-free hydrogen production cell, which comprises a metal anode (10), an electrolyte (14) and a gas diffusion electrode (20). The gas diffusion electrode (10) has, as a metal-containing main component, a steel alloy and/or a catalytic inorganic metal compound and/or platinum powder or palladium powder, and all the aforementioned materials are free of Raney nickel. Avoiding Raney nickel provides increased industrial safety. The identified substitute materials have significantly fewer risks with regard to transportation, fire hazard and toxicology. The necessary preventative measures therefore require substantially less outlay. The amount of nickel used (in the event that a nickel-containing compound is used) is at least 2 factors lower or tends towards zero. The identified substitute materials exhibit good to very good electrochemical activity and result in hydrogen production cells of which the efficiency of hydrogen production and stability are as adequate as cells which are fitted with a cathode containing Raney nickel.

IPC 8 full level

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Citation (search report)

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