Title (en)

ALUMINIUM ELECTROWINNING CELLS WITH METAL-BASED ANODES

Title (de)

ALUMINIUM-ELEKTROGEWINNUNGSZELLEN MIT ANODEN AUF BASIS VON METALLEN

Title (fr)

CELLULES D'EXTRACTION ELECTROLYTIQUE DE L'ALUMINIUM AVEC ANODES A BASE DE METAL

Publication

EP 1554416 B1 20120201 (EN)

Application

EP 03751166 A 20031017

Priority

- IB 0304649 W 20031017
- IB 0204059 W 20021018

Abstract (en)

[origin: WO2004035871A1] A cell for the electrowinning of aluminium comprises a metal-based anode (10) containing at least one of nickel, cobalt and iron, for example an anode made from an alloy consisting of 50 to 60 weight% in total of nickel and/or cobalt; 25 to 40 weight% iron; 6 to 12 weight% copper; 0.5 to 2 weight% aluminium and/or niobium; and 0.5 to 1.5 weight% in total of further constituents. The anode (10) may have an applied hematite-based coating and optionally a cerium oxyfluoride-based outermost coating. The cell contains a fluoride-containing molten electrolyte (5) at a temperature below 940 DEG C, in which the anode is immersed and which consists of: 5 to 14 weight% dissolved alumina; 35 to 45 weight% aluminium fluoride; 30 to 45 weight% sodium fluoride; 5 to 20 weight% potassium fluoride; 0 to 5 weight% calcium fluoride; and 0 to 5 weight% in total of one or more further constituents. A nickel-containing anode stem (14b) can be used to suspend the anode (10) in the electrolyte facing a cathode (21,21A,25) that has an aluminium-wettable surface (20), in particular a drained horizontal or inclined surface.

IPC 8 full level

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CPC (source: EP US)

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