Title (en)

ALLOY-BASED ANODE STRUCTURES FOR ALUMINIUM PRODUCTION

Title (de)

ANODENSTRUKTUREN AUF DER BASIS VON LEGIERUNGEN FÜR DIE HERSTELLUNG VON ALUMINIUM

Title (fr)

STRUCTURES D'ANODES A BASE D'ALLIAGE POUR LA PRODUCTION D'ALUMINIUM

Publication

EP 1448810 A2 20040825 (EN)

Application

EP 02755397 A 20020709

Priority

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- IB 0101275 W 20010713

Abstract (en)

[origin: WO03006716A2] A long-lasting metal-based oxygen-evolving anode (10) for the electrowinning of aluminium from alumina dissolved in a molten electrolyte, has a plurality of electrochemically active anode members (15,15') spaced apart and parallel to one another. Each anode member (15) can comprise a bottom part (15a) which has a substantially constant width over its height and which is extended upwardly by a tapered top part (15b for guiding a circulation of electrolyte (30) thereon. The bottom part (15a) is usually made of a metal alloy with a substantially flat oxide bottom surface (16) which is electrochemically active for the oxidation of oxygen. The metal alloy can comprise an electrically conductive inert structural metal and an active diffusable metal that during electrolysis slowly diffuses to the electrochemically active bottom surface (16) where it is oxidised for maintaining the electrochemically active bottom surface (16) and slowly dissolves into the molten electrolyte (30), in which case the bottom part (15a) forms a long-lasting supply of the active metal diffusable to the electrochemically active bottom surface (16).

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