

Title (en)

MULTI-LAYER NON-CARBON METAL-BASED ANODES FOR ALUMINIUM PRODUCTION CELLS

Title (de)

MEHRSCHICHTIGE, KOHLENSTOFFFREIE ANODEN AUF BASIS VON METALLEN FÜR ALUMINIUM-ELEKTROGEWINNUNGSZELLEN

Title (fr)

ANODES MULTICOUCHES NON CARBONEES A BASE DE METAL POUR CELLULES DE PRODUCTION D'ALUMINIUM

Publication

EP 1109952 A1 20010627 (EN)

Application

EP 99931413 A 19990730

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Abstract (en)

[origin: WO0006800A1] A composite, high-temperature resistant, non-carbon metal-based anode of a cell for the electrowinning of aluminium comprises a metal-based core structure of low electrical resistance, for connecting the anode to a positive current supply, coated with a series of superimposed, adherent, electrically conductive layers. These layers consist of at least one layer on the core structure constituting a barrier substantially impervious to monoatomic oxygen and molecular oxygen; one or more intermediate, protective layers on the oxygen barrier layer(s) which remain inactive in the reactions for the evolution of oxygen gas; and an electrochemically active layer for the oxidation reaction of oxygen ions present at the anode/electrolyte interface into nascent monoatomic oxygen, as well as for subsequent reaction for the formation of gaseous biatomic oxygen. The active layer comprises at least one transition metal and/or an oxide thereof (excluding the lanthanides and actinides and their oxides alone).

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