

Title (en)

BIPOLAR CELL FOR THE PRODUCTION OF ALUMINIUM WITH CARBON CATHODES

Title (de)

BIPOLARE ZELLE MIT KOHLENSTOFF-KATHODEN ZUR HERSTELLUNG VON ALUMINIUM

Title (fr)

CELLULE BIPOLAIRE A CATHODES AU CARBONE SERVANT A LA PRODUCTION D'ALUMINIUM

Publication

EP 1112393 B1 20030312 (EN)

Application

EP 99936904 A 19990817

Priority

- IB 9901438 W 19990817
- IB 9801283 W 19980818

Abstract (en)

[origin: WO0011243A1] A bipolar cell for the electrowinning of aluminium has bipolar electrodes each comprising a carbon cathode body having on one side an active surface on which aluminium is produced and connected on the other side through an oxygen impermeable barrier layer to an electrochemically active anode layer having an oxygen evolving iron oxide-based outer surface. The anode layer may comprise a metal-based anode substrate and a transition metal oxide-based outside layer, in particular an iron oxide-based outside layer, which either is an applied layer or is obtainable by oxidising the surface of the anode substrate which contains iron. During operation, the anode layer can be kept dimensionally stable by maintaining in the electrolyte a concentration of transition metal species which are present as one or more corresponding transition metal oxides in the electrochemically-active layer. The cell operating temperature is sufficiently low so that the required concentration of transition metal species in the electrolyte is limited by the reduced solubility thereof in the electrolyte at the operating temperature. This limits the contamination of the product aluminium by the transition metal species to an acceptable level.

IPC 1-7

C25C 3/08

IPC 8 full level

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CPC (source: EP US)

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