Title (en)

ELECTROLYTIC CELL FOR ALUMINIUM ELECTROLYSIS AND ELECTROLYSIS PROCESS USING THE ELECTROLYTIC CELL

Title (de)

ELEKTROLYSEZELLE ZUR ELEKTROLYSE VON ALUMINIUM UND ELEKTROLYSEVERFAHREN MIT DIESER ELEKTROLYSEZELLE

Title (fr)

CELLULE ÉLECTROLYTIQUE POUR L'ÉLECTROLYSE D'ALUMINIUM ET PROCÉDÉ UTILISANT LA CELLULE ÉLECTROLYTIQUE

Publication

EP 2860290 A1 20150415 (EN)

Application

EP 13804286 A 20130530

Priority

- CN 201210188436 A 20120611
- CN 2013076440 W 20130530

Abstract (en)

The present invention discloses an electrolytic cell for aluminum electrolysis, comprising a cell body, wherein an anode and a cathode are arranged inside the cell body, the cell body is further filled with an electrolyte, and at least a part of the anode is immersed in the electrolyte; the anode is arranged above the cell body, the cathode is arranged at the bottom of the electrolytic cell and is covered by a certain amount of aluminum liquid, the electrolyte is located between the anode and the cathode and covers the aluminum liquid; and an insulating layer is arranged on the inner sidewall of the cell body and is used for isolating oxygen or the electrolyte from a carbon block. The electrolytic cell for aluminum electrolysis is characterized in that the anode contains the components including Fe, Cu, Ni and Sn, wherein Fe and Cu serve as primary components; and the electrolyte is composed of 30-38wt% of NaF, 49-60wt% of AlF 3 , 1-5wt% of LiF, 1-6wt% of KF and 3-6wt% of Al 2 O 3 , wherein the molar ratio of NaF to AlF 3 is 1.0-1.52. The electrolytic cell can be used for preparing industrial electrolytic aluminum.

IPC 8 full level

C25C 3/08 (2006.01); **C25C 3/12** (2006.01); **C25C 3/18** (2006.01)

CPC (source: EP KR US)

C25C 3/08 (2013.01 - EP US); **C25C 3/12** (2013.01 - EP KR US); **C25C 3/18** (2013.01 - EP KR US)

Cited by

CN103952723A; EP3287548A4

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2860290 A1 20150415; **EP 2860290 A4 20160210**; **EP 2860290 B1 20190109**; AP 2015008184 A0 20150131; AU 2013275995 A1 20150122; AU 2013275995 B2 20160512; CA 2877591 A1 20131219; CA 2877591 C 20160823; CN 103484891 A 20140101; CN 103484891 B 20160615; EA 030419 B1 20180831; EA 201492226 A1 20150529; HR P20190669 T1 20190614; HU E042500 T2 20190729; IN 216DEN2015 A 20150612; KR 101684813 B1 20161208; KR 20150022993 A 20150304; PL 2860290 T3 20190731; US 2015122664 A1 20150507; WO 2013185538 A1 20131219; ZA 201409512 B 20160831

DOCDB simple family (application)

EP 13804286 A 20130530; AP 2015008184 A 20130530; AU 2013275995 A 20130530; CA 2877591 A 20130530; CN 201210188436 A 20120611; CN 2013076440 W 20130530; EA 201492226 A 20130530; HR P20190669 T 20190409; HU E13804286 A 20130530; IN 216DEN2015 A 20150109; KR 20157000519 A 20130530; PL 13804286 T 20130530; US 201314407289 A 20130530; ZA 201409512 A 20141223