Title (en)

Treatment process comprising the anodizing of copper-containing aluminium alloys

Title (de)

Behandlungsverfahren mit Anodisieren von Kupfer-enthaltenden Aluminiumlegierungen

Title (fr)

Procédé de traitement avec anodisation d'alliages d'aluminium contenant du cuivre

Publication

EP 2682502 A1 20140108 (FR)

Application

EP 13174807 A 20130702

Priority

FR 1256393 A 20120704

Abstract (en)

The method comprises: providing a part (50) made of aluminum alloy containing 0.1-10 wt.% of copper; performing electrochemical pretreatment of the part in a first electrolyte bath (10) containing sulfuric acid and a first oxidizer compound, where a first potential difference is established between a first cathode (11) and a first anode dipped in the first bath, and the concentration of the first oxidizer compound is such that a corrosion potential of the aluminum alloy is greater than +100 mV relative to a hydrogen normal electrode; and anodizing the part in a second electrolyte bath (20). The method comprises: providing a part (50) made of aluminum alloy containing 0.1-10 wt.% of copper; performing electrochemical pretreatment of the part in a first electrolyte bath (10) containing sulfuric acid and a first oxidizer compound, where a first potential difference is established between a first cathode (11) and a first anode dipped in the first bath, the part is the first anode, and the concentration of the first oxidizer compound is such that a corrosion potential of the aluminum alloy is greater than +100 mV relative to a hydrogen normal electrode; and anodizing the part in a second electrolyte bath (20) containing sulfuric acid and a second oxidizer compound, where a second potential difference is established between a second cathode (21) and a second anode dipped in the second bath, and the part is the second anode. The first potential difference is 3-12 V. The anodizing step is performed in the same bath as the first bath of the pretreatment step without extracting the part from the first bath. The method further comprises rinsing the part between the pretreatment step and the anodizing step. The rinsing is constituted by rinsing the part in a static rinsing bath, and then rinsing the part in a running rinsing bath with softened water.

Abstract (fr)

L'invention concerne un procédé de traitement d'une pièce (50) en alliage d'aluminium contenant du cuivre en proportion massique de 0,1% à 10%. Le procédé comprend les étapes suivantes : (a) On fournit la pièce (50), (b) On effectue un prétraitement électrochimique de la pièce (50) dans un premier bain (10) d'électrolyte contenant de l'acide sulfurique et un premier composé oxydant, une première différence de potentiel #V1 étant établie entre une première cathode (11) et une première anode trempées dans le premier bain (10), la pièce (50) étant la première anode, la concentration en ce premier composé oxydant étant telle que le potentiel de corrosion de cet alliage d'aluminium est supérieur à +100 mV par rapport à l'Electrode Normale à Hydrogène, (c) Après l'étape (b), on effectue une anodisation de la pièce (50) dans un second bain (20) d'électrolyte contenant de l'acide sulfurique et un second composé oxydant, une seconde différence de potentiel #V2 étant établie entre une seconde cathode (21) et une seconde anode trempées dans le second bain, la pièce (50) étant la seconde anode.

IPC 8 full level

C25D 11/08 (2006.01); **C25D 11/16** (2006.01); **C25F 1/00** (2006.01)

CPC (source: EP US)

C25D 11/08 (2013.01 - EP US); **C25D 11/16** (2013.01 - EP US)

Citation (search report)

- [A] US 5635084 A 19970603 - MANSFELD FLORIAN B [US], et al
- [A] US 5362569 A 19941108 - BAUMAN ALBERT J [US]
- [A] US 4336113 A 19820622 - WALLS JOHN E, et al
- [A] FR 897693 A 19450328

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 2682502 A1 20140108; **EP 2682502 B1 20150916**; FR 2992979 A1 20140110; FR 2992979 B1 20140808; US 2014008236 A1 20140109

DOCDB simple family (application)

EP 13174807 A 20130702; FR 1256393 A 20120704; US 201313933988 A 20130702