

Title (en)  
TIN-ZINC ALLOY ELECTROPLATING METHOD

Title (de)  
VERFAHREN ZUR GALVANISCHEN ABSCHIEDUNG VON ZINN-ZINK-LEGIERUNG

Title (fr)  
MÉTHODE DE GALVANOPLASTIE À L'ALLIAGE ETAIN-ZINC

Publication  
**EP 1811063 A4 20090304 (EN)**

Application  
**EP 05770802 A 20050810**

Priority  
• JP 2005014648 W 20050810  
• JP 2004233633 A 20040810

Abstract (en)  
[origin: EP1811063A1] The object of the present invention is to provide an electroplating method that enables the high-speed treatment of articles to be plated that was difficult to achieve with the conventional tin-zinc electroplating. The present invention provides a method for electroplating with a tin-zinc alloy that is performed under the following conditions: plating bath temperature 30 to 90 °C, plating bath stirring rate 5 to 300 m/min, and cathode current density 5 to 200 A/dm<sup>2</sup>. Preferably, in the tin-zinc alloy plating bath, the divalent tin ion concentration is 1 to 100 g/L and the zinc ion concentration is 0.2 to 80 g/L.

IPC 8 full level  
**C25D 3/60** (2006.01); **C25D 5/08** (2006.01); **C25D 21/10** (2006.01)

CPC (source: EP KR US)  
**C25D 3/565** (2013.01 - EP US); **C25D 3/60** (2013.01 - EP KR US); **C25D 5/08** (2013.01 - EP US); **C25D 21/10** (2013.01 - EP US)

Citation (search report)  
• [Y] EP 1138805 A2 20011004 - SHIPLEY CO LLC [US]  
• [E] EP 1591563 A1 20051102 - ISHIHARA CHEMICAL CO LTD [JP], et al & WO 2004065663 A1 20040805 - ISHIHARA CHEMICAL CO LTD [JP], et al  
• See references of WO 2006016603A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**EP 1811063 A1 20070725; EP 1811063 A4 20090304; EP 1811063 B1 20141203**; BR PI0514210 A2 20090428; BR PI0514210 B1 20160503; CN 101001982 A 20070718; CN 101001982 B 20100908; ES 2526430 T3 20150112; JP 2006052431 A 20060223; JP 4594672 B2 20101208; KR 100929761 B1 20091203; KR 20070031442 A 20070319; US 2007199827 A1 20070830; WO 2006016603 A1 20060216

DOCDB simple family (application)  
**EP 05770802 A 20050810**; BR PI0514210 A 20050810; CN 200580027125 A 20050810; ES 05770802 T 20050810; JP 2004233633 A 20040810; JP 2005014648 W 20050810; KR 20077002958 A 20050810; US 70480507 A 20070209