

Title (en)

TRIVALENT CHROMIUM PLATING SOLUTION AND TRIVALENT CHROMIUM PLATING METHOD USING SAME

Title (de)

DREIWERTIGE CHROMPLATTIERUNGSLÖSUNG UND DREIWERTIGES CHROMBESCHICHTUNGSVERFAHREN DAMIT

Title (fr)

SOLUTION DE PLACAGE DE CHROME TRIVALENT ET PROCÉDÉ DE PLACAGE DE CHROME TRIVALENT L'EMPLOYANT

Publication

**EP 3725919 A1 20201021 (EN)**

Application

**EP 18888525 A 20181213**

Priority

- JP 2017239216 A 20171214
- JP 2018121196 A 20180626
- JP 2018045799 W 20181213

Abstract (en)

A trivalent chromium plating solution that does not cause the problems including the occurrence of deposition failure of the plating and color unevenness, such as a brown stripe pattern, in the plating even though a metal impurity is incorporated into the plating solution, and a trivalent chromium plating method are provided by a trivalent chromium plating solution containing a trivalent chromium compound, a chloride as a conductive salt, a pH buffering agent, and a complexing agent, further containing an unsaturated sulfonic acid compound represented by the following general formula (1) (wherein in the formula (1), R<sub>1</sub> represents a hydrocarbon group having a number of carbon atoms of from 1 to 10, hydrogen, or a halogen; R<sub>2</sub> represents nothing or a hydrocarbon group having a number of carbon atoms of from 1 to 10; and X represents hydrogen or an alkali metal), and a trivalent chromium plating method using the same.

$$\text{R}_1\text{SO}_3\text{X} \quad (1)$$

R<sub>1</sub> represents a hydrocarbon group having a number of carbon atoms of from 1 to 10, hydrogen, or a halogen; R<sub>2</sub> represents nothing or a hydrocarbon group having a number of carbon atoms of from 1 to 10; and X represents hydrogen or an alkali metal,

IPC 8 full level

**C25D 3/06** (2006.01)

CPC (source: EP KR US)

**C25D 3/06** (2013.01 - EP KR US); **C25D 3/10** (2013.01 - EP)

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 3725919 A1 20201021; EP 3725919 A4 20210901; CN 111479956 A 20200731; JP WO2019117230 A1 20201217;**  
KR 20200096932 A 20200814; US 2021198797 A1 20210701; WO 2019117230 A1 20190620

DOCDB simple family (application)

**EP 18888525 A 20181213; CN 201880080667 A 20181213; JP 2018045799 W 20181213; JP 2019559193 A 20181213;**  
KR 20207017355 A 20181213; US 201816771066 A 20181213