Title (en)

METHOD FOR MANUFACTURING HIGH STRENGTH STEEL SHEETS WITH EXCELLENT RESISTANCE TO DELAYED FRACTURE AFTER FORMING

Title (de)

HERSTELLUNGSVERFAHREN FÜR HOCHFESTES DÜNNES STAHLBLECH MIT HERVORRAGENDER BESTÄNDIGKEIT GEGENÜBER VERZÖGERTEM BRUCH NACH DEM UMFORMEN

Title (fr)

PROCEDE DE PREPARATION DE TOLE MINCE EN ACIER A RESISTANCE ELEVEE PRESENTANT UNE RESISTANCE EXCELLENTE A LA RUPTURE DIFFEREE APRES FORMATION

Publication

EP 1637618 B1 20100714 (EN)

Application

EP 03817075 A 20030527

Priority

JP 0306617 W 20030527

Abstract (en)

[origin: EP1637618A1] Steel sheets containing residual austenite of not more than 7 vol.%, crystallized and/or precipitated compounds with particle diameters of 0.01 to 5.0 μm of 100 to 100000 particle/mm 2 and C of 0.05 to 0.3 mass%, Si of not more than 3.0 mass%, Mn of 0.01 to 3.0 mass %, P of not more than 0.02 mass%, S of not more than 0.02 mass%, Al of 0.01 to 3.0 mass%, N of not more than 0.01 mass% and Mg of 0.0002 to 0.01 mass%, with the remainder comprising iron and unavoidable.impurities.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 9/46** (2006.01); **C22C 38/06** (2006.01)

CPC (source: EP US)

C21D 9/46 (2013.01 - EP US); **C22C 1/06** (2013.01 - EP US); **C22C 38/004** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP US); **C22C 38/14** (2013.01 - EP US); **C22C 38/16** (2013.01 - EP US); C21D 2211/00 (2013.01 - EP US); C21D 2211/004 (2013.01 - EP US)

Cited by

CN102031457A; EP3269836A4; EP2455507A1; EP2216422A4; US8679265B2; US10655201B2; WO2015185956A1; US10612107B2; US11047020B2

Designated contracting state (EPC)

BE DE FR GB

DOCDB simple family (publication)

EP 1637618 A1 20060322; **EP 1637618 A4 20061018**; **EP 1637618 B1 20100714**; AU 2003235443 A1 20050121; DE 60333400 D1 20100826; US 2007006948 A1 20070111; US 2011120598 A1 20110526; WO 2004106571 A1 20041209

DOCDB simple family (application)

EP 03817075 A 20030527; AU 2003235443 A 20030527; DE 60333400 T 20030527; JP 0306617 W 20030527; US 55857905 A 20051128; US 92831010 A 20101207