

Title (en)  
LOW-ALLOY STEEL SHEET HAVING EXCELLENT STRENGTH AND DUCTILITY AND MANUFACTURING METHOD THEREFOR

Title (de)  
NIEDRIG LEGIERTES STAHLBLECH MIT AUSGEZEICHNETER FESTIGKEIT UND DUKTILITÄT UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)  
TÔLE D'ACIER FAIBLEMENT ALLIÉ POSSÉDANT UNE RÉSISTANCE ET UNE DUCTILITÉ EXCELLENTE ET PROCÉDÉ DE FABRICATION S'Y RAPPORTANT

Publication  
**EP 3674435 A4 20200701 (EN)**

Application  
**EP 18857908 A 20180920**

Priority  
• KR 20170123412 A 20170925  
• KR 2018011097 W 20180920

Abstract (en)  
[origin: EP3674435A1] The disclosure is to provide a low alloy steel sheet with high strength, high yield strength and high ductility by minimizing the addition of alloying elements, and manufacturing method thereof. In accordance with an aspect of the disclosure, a low alloy steel sheet with excellent strength and ductility, includes: by weight percent, C: 0.05-0.15%, Si: 0.7-2.5%, Mn: 8-9.9%, Cr: 13-15.0%, Cu: more than 0 and 1.0% or less, N: 0.1-0.2%, Al: more than 0 and 0.25% or less, Sn: more than 0 and 0.05% or less, the remainder of iron (Fe) and other inevitable impurities, and the microstructure of the low alloy steel sheet includes martensite phase at a volume fraction of 20% or less, and the remainder includes an austenite phase.

IPC 8 full level  
**C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/06** (2006.01); **C22C 38/34** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/58** (2006.01); **C22C 38/60** (2006.01)

CPC (source: EP KR)  
**C21D 8/02** (2013.01 - EP); **C21D 8/0205** (2013.01 - EP); **C21D 8/0226** (2013.01 - EP KR); **C21D 8/0236** (2013.01 - EP KR); **C21D 8/0263** (2013.01 - KR); **C21D 9/46** (2013.01 - EP KR); **C22C 38/00** (2013.01 - EP); **C22C 38/001** (2013.01 - EP); **C22C 38/008** (2013.01 - EP); **C22C 38/06** (2013.01 - EP); **C22C 38/34** (2013.01 - EP KR); **C22C 38/42** (2013.01 - EP KR); **C22C 38/44** (2013.01 - EP KR); **C22C 38/58** (2013.01 - EP KR); **C22C 38/60** (2013.01 - EP KR); **C21D 2211/001** (2013.01 - EP KR)

Citation (search report)  
• [I] US 4946644 A 19900807 - SCHUMACHER WILLIAM J [US], et al  
• [A] GB 1323919 A 19730718 - NISSHIN STEEL CO LTD  
• [A] JP S61124556 A 19860612 - KAWASAKI STEEL CO  
• [A] US 3756807 A 19730904 - HOSHINO K, et al  
• [A] US 2013039802 A1 20130214 - TALONEN JUHO [FI], et al  
• [A] JP S4827920 A 19730413  
• See references of WO 2019059660A1

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 3674435 A1 20200701**; **EP 3674435 A4 20200701**; CN 111133122 A 20200508; CN 111133122 B 20220816; KR 101952818 B1 20190228; WO 2019059660 A1 20190328

DOCDB simple family (application)  
**EP 18857908 A 20180920**; CN 201880062303 A 20180920; KR 20170123412 A 20170925; KR 2018011097 W 20180920