

Title (en)
MULTI-PHASE STEEL SHEET EXCELLENT IN HOLE EXPANDABILITY AND METHOD OF PRODUCING THE SAME

Title (de)
MEHRPHASEN-STAHBLECH MIT VERBESSERTER TIEFZIEHFÄHIGKEIT UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)
TOLE D'ACIER A PLUSIEURS PHASES PRESENTANT UN TRES BON POUVOIR D'EXPANSION DE TROU ET PROCEDE POUR PRODUIRE CETTE TOLE D'ACIER

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Application
EP 02751696 A 20020725

Priority
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Abstract (en)
[origin: WO03010351A1] The present invention provides a steel sheet excellent in both a balance between strength and elongation and a balance between strength and hole expandability, in other words, a multi-phase steel sheet having an excellent balance between strength and hole expandability. The present invention is a multi-phase steel sheet excellent in hole expandability characterized in that: the steel sheet contains, as chemical components in mass, C: 0.03 to 0.15%, P: not more than 0.010%, S: not more than 0.003%, and either one or both of Si and Al in a total amount of 0.5 to 4%, and one or more of Mn, Ni, Cr, Mo and Cu in a total amount of 0.5 to 4%, with the balance consisting of Fe and unavoidable impurities; the microstructure at a section of the steel sheet is composed of either one or both of retained austenite and martensite which account(s) for 3 to 30% in total in area percentage and the balance consisting of either one or both of ferrite and bainite; the maximum length of the crystal grains in the microstructure is not more than 10 microns; and the number of inclusions 20 microns or larger in size at a section of the steel sheet is not more than 0.3 piece per square millimeter.

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IPC 8 full level
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Citation (search report)
See references of WO 03010351A1

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CN107922983A; US10465260B2; US10480042B2; WO2015120205A1; WO2016164788A1

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