

Title (en)
STEEL MATERIAL AND PRODUCTION METHOD THEREFOR

Title (de)
STAHLMATERIAL UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
MATÉRIAU EN ACIER ET SON PROCÉDÉ DE FABRICATION

Publication
EP 3835446 A1 20210616 (EN)

Application
EP 19859087 A 20190904

Priority
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• JP 2019034830 W 20190904

Abstract (en)
Provided are a steel material and a method of producing the same. The steel material has a chemical composition containing, in mass%, C: 0.10-2.50 %, Mn: 8.0-45.0 %, P: ≤ 0.300 %, S: ≤ 0.1000 %, Ti: 0.10-5.00 %, Al: 0.001-5.000 %, N: ≤ 0.5000 %, and O: ≤ 0.1000 %, where C, Ti, and Mn satisfy $25([C] - 12.01[Ti]/47.87) + [Mn] \geq 25$ ([C], [Ti] and [Mn] are a content of each element in mass%), with the balance being Fe and inevitable impurities, and a microstructure containing ≥ 90 % of an austenite phase and ≥ 0.2 % of Ti carbides in area ratio. Such a microstructure can be obtained by heating the steel material having the chemical composition to a temperature of ≥ 950 °C, and then cooling the steel material at a cooling rate of > 1 °C/s in a temperature range between 900-500 °C. A steel material excellent in wear resistance is thus obtained. By adjusting the hardness of the austenite phase to ≥ 200 HV, the impact wear resistance is remarkably improved.

IPC 8 full level
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