

Title (en)

A free machining steel bearing bismuth and sulfur with superior high temperature ductility, and manufacturing method therefor

Title (de)

Wismut und Schwefel enthaltenden zerspanbaren Stahl mit ausgezeichneter Dehnbarkeit bei hohen Temperaturen und Herstellungsverfahren dafür

Title (fr)

Acier de decolletage contenant du bismuth et du soufre et présentant de ductilité excellent à haut température, et son procédé de fabrication

Publication

EP 1054074 A3 20010627 (EN)

Application

EP 99303965 A 19990521

Priority

EP 99303965 A 19990521

Abstract (en)

[origin: EP1054074A2] A bismuth-sulfuric (to be called "Bi-S" below) free-machinable steel showing a superior high temperature ductility, and a manufacturing method therefor, are disclosed, in which surface defects do not occur at a low rolling temperature. The Bi-S free-machinable steel with a superior high temperature ductility includes: in wt%, 0.05-0.15% of C, 0.5-2.0% of Mn, 0.15-0.40% of S, 0.01-0.10% of P, 0.003-0.020% of O, 0.03-0.30% of Bi, 0.01% or less of Si, 0.0009% or less of Al, and a balance of Fe and other unavoidable impurities; an MnS inclusion with MnS and Bi absorbed into it; and a metallic Bi inclusion. In another aspect, the free machinable steel includes 0.02-0.1% of Ti and 0.0030-0.0100% of N in addition to the above elements. In still another aspect, the free machinable steel includes 0.0050-0.0150% of B and 0.0070% or less of N in addition to the above elements.

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CPC (source: EP)

C21D 8/06 (2013.01); **C22C 38/002** (2013.01); **C22C 38/04** (2013.01); **C22C 38/60** (2013.01)

Citation (search report)

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- [A] CHEMICAL ABSTRACTS, vol. 125, no. 20, 11 November 1996, Columbus, Ohio, US; abstract no. 254479, CHO, SAM-KYU: "Effect of hot rolling and bismuth content on the hot ductility in free machining steel with bismuth and manganese sulfide" XP002119884 & TAEHAN KUMSOK HAKHOECHI (1996), 34(7), 823-829
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