

Title (en)

USE OF AN IRON-BASE ALLOY IN THE MANUFACTURE OF SINTERED PARTS WITH A HIGH CORROSION RESISTANCE, A HIGH WEAR RESISTANCE AS WELL AS A HIGH TOUGHNESS AND COMPRESSION STRENGTH, ESPECIALLY FOR USE IN THE PROCESSING OF SYNTHETIC MATERIALS

Publication

EP 0348380 B1 19921119 (DE)

Application

EP 89890163 A 19890614

Priority

AT 159988 A 19880621

Abstract (en)

[origin: EP0348380A1] Use of an iron-based alloy for the production of sintered parts of high corrosion resistance, high wear resistance, high toughness and high compressive strength, in particular for processing plastics, having a composition, in % by weight, chromium 16.0-29.0, molybdenum 0.4-2.5, tungsten 0.3-2.0, vanadium 3.0-10.0, titanium up to 5.0, aluminium up to 1.0, boron up to 0.05, nitrogen 0.01-0.18, niobium up to 5.0, iron and preparation-related impurities as the remainder, the value formed from $(\% \text{ of Cr} - 13) + 4.4 \times (\% \text{ of V} - 3) + 2 \times (\% \text{ of Nb}) + 4.2 \times (\% \text{ of Ti})$ being greater than 8.8, and the minimum carbon content of the alloy corresponding to the correlation $C_{\min} = 0.3 + [(\% \text{ of Cr} - 13) \times 0.06] + [(2 \times \% \text{ of Mo} + W) \times 0.03] + (\% \text{ of V} \times 0.24) + (\% \text{ of Nb} \times 0.13) + (\% \text{ of Ti} \times 0.25)$ and the maximum carbon content of the alloy corresponds to the correlation $C_{\max} = 0.7 + [(\% \text{ of Cr} - 13) \times 0.06] + [(2 \times \% \text{ of Mo} + W) \times 0.03] + (\% \text{ of V} \times 0.24) + (\% \text{ of Nb} \times 0.13) + (\% \text{ of Ti} \times 0.25)$, with the proviso that the matrix has a chromium content of at least 13% after hardening and annealing, and the carbide content is at least 25% by volume, the carbide grain size being less than 14 μm and at least 5 % by volume of the carbides being in the form of MC carbides.

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IPC 8 full level

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CPC (source: EP)

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Cited by

EP0721995A3; US5900560A; EP0378925A1; CN111850427A; AT501794A1; AT501794B1; GB2298869A; GB2298869B; CN102905831A; US5936169A; US5679908A; EP3428300A1; US7442338B2; WO2006112912A1; WO03069004A1; WO0073527A1; WO2011115547A1

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