

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

Title (de)

Verwendung einer Eisenbasislegierung zur pulvermetallurgischen Herstellung von Teilen mit hoher Korrosionsbeständigkeit, hoher Verschleissfestigkeit sowie hoher Zähigkeit und Druckfestigkeit, insbesondere für die Kunststoffverarbeitung

Title (fr)

Utilisation d'un alliage à base de fer pour la fabrication de pièces frittées, présentant une haute résistance à la corrosion, une haute résistance à l'usure ainsi qu'une haute tenacité et résistance à la compression et destinées, en particulier, au travail des matières synthétiques

Publication

**EP 0348380 B2 19960417 (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  $C_{\min} = 0.3 + [(\% \text{ of Cr} - 13) \times 0.06] + [(2 \times \% \text{ of Mo} + \text{W}) \times 0.03] + (\% \text{ of V} \times 0.24) + (\% \text{ of Nb} \times 0.13) + (\% \text{ of Ti} \times 0.25)$  and the maximum carbon content of the alloy corresponds to the correlation  $C_{\max} = 0.7 + [(\% \text{ of Cr} - 13) \times 0.06] + [(2 \times \% \text{ of Mo} + \text{W}) \times 0.03] + (\% \text{ of V} \times 0.24) + (\% \text{ of Nb} \times 0.13) + (\% \text{ of Ti} \times 0.25)$ , 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  $\mu\text{m}$  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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Cited by

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

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