

Title (en)
LOW COST AMORPHOUS STEEL

Title (de)
KOSTENGÜNSTIGER AMORPHER STAHL

Title (fr)
ACIER AMORPHE ECONOMIQUE

Publication
EP 1794337 A2 20070613 (EN)

Application
EP 05815965 A 20050927

Priority
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• US 61378004 P 20040927

Abstract (en)
[origin: WO2006037093A2] Design and fabrication processes and compositions for iron-based bulk metallic glass materials or amorphous steels. Examples of bulk metallic glasses based on the described compositions may contain approximately 59 to 70 atomic percent of iron, which is alloyed with approximately 10 to 20 atomic percent of metalloid elements and approximately 10 to 25 atomic percent of refractory metals. The compositions can be designed using theoretical calculations of the liquidus temperature to have substantial amounts of refractory metals, while still maintaining a depressed liquidus temperature. The alloying elements are molybdenum, tungsten, chromium, boron, and carbon may be used. Some of the resulting alloys are ferromagnetic at room temperature, while others are non-ferromagnetic. These amorphous steels have increased specific strengths and corrosion resistance compared to conventional high strength steels.

IPC 8 full level
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