

Title (en)

METAL MATERIAL COMPOSITION FOR ADDITIVELY MANUFACTURED PARTS

Title (de)

METALLISCHE MATERIALZUSAMMENSETZUNG FÜR ADDITIV HERGESTELLTE TEILE

Title (fr)

COMPOSITION DE MATIÈRE MÉTALLIQUE POUR DES PIÈCES FABRIQUÉES DE MANIÈRE ADDITIVE

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Application

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Abstract (en)

[origin: WO2020177976A1] The invention relates to a method for producing precise components, particularly cutting tools or cold forming tools, cold extrusion punches and dies by laser melting or laser sintering or laser deposit welding or FDM or binder jetting of a powder material, which consists of a mixture of at least two powder elements, wherein the powder mixture is formed by the primary component iron powder and additional powder alloying elements, which are present in elementary, pre-alloyed or partially pre-alloyed form, wherein the powder elements are each added separately or in arbitrary combination in the following quantities according to the DIN standard EN 10027-2 no. 1.33XX or DIN EN 10027-2 no. 1.27XX in particular according to the DIN standard EN 10027-2 no. 1.3343 having the short name HS6-5-2C or DIN EN 10027-2 no. 1.2709, wherein a powder alloy is created from said powder elements over the course of the laser sintering process, the following powder elements, present in elementary, alloyed or pre-alloyed form, each being additionally added to the alloy separately or in arbitrary combination: tungsten, in the range between 35, 10 and 0.7 M.-%, preferably 10 M.-%, titanium in the range between 0.2, 3.2 to 10.7 M.-%, preferably 3.2 M.-%, carbon in the range between 0.08, 1.23 to 4.1 M.-%, preferably 1.23 M.-%, O in the range between 0.00 to 0.02 M.-%, N in the range between 0.00 to 0.02 M.-%, undefined residual materials less than 0.1 M.-%.

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