

Title (en)
METHOD OF SINTERING BODY HAVING HIGH HARDNESS

Title (de)
VERFAHREN ZUM SINTERN EINES EINE GROSSE HÄRTE AUFWEISENDEN KÖRPERS

Title (fr)
PROCEDE POUR FRITTER UN ELEMENT DE DURETE ELEVEE

Publication
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Application
EP 05721763 A 20050111

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Abstract (en)
[origin: WO2005068113A1] Disclosed is a method of producing a sintered body with high hardness, in which a hard layer of polycrystalline diamond (PCD) is formed on an ultra-hard substrate, which comprises: a step of preparing a raw material powder for sintering, which comprises diamond powder, a step of positioning the raw material powder for sintering onto a WC/Co type ultra-hard substrate; and a step of forming a PCD layer having high hardness on said ultra-hard substrate by charging the ultra-hard substrate with the raw material powder for sintering into a crucible made of a sintered body comprised of: at least one material selected from a group consisting of catalyst transition metals from Period of 4-6 of Group 4A-6A of Periodic table of elements and carbides, nitrides and carbo-nitrides thereof and each solid solution thereof; and at least one binding material selected from Fe, Co and Ni, and then carrying out sintering under the conditions of high temperature and high pressure, where diamond is stable. According to the present invention, it becomes possible to prevent abnormal particle growth of diamond in a PCD layer of a sintered body having high hardness, without adding a powder of a binding material comprising additional materials for inhibiting particle growth, therefore, it is now possible to prepare a sintered body having high hardness, which has excellent machinability and processability.

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