

Title (en)
CERMET AND METHOD OF PRODUCING IT

Title (de)
CERMET UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)
CERMET ET SON PROCEDE DE PRODUCTION

Publication
EP 0689617 A1 19960103 (DE)

Application
EP 94904953 A 19940122

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Abstract (en)
[origin: US5670726A] PCT No. PCT/DE94/00048 Sec. 371 Date Sep. 1, 1995 Sec. 102(e) Date Sep. 1, 1995 PCT Filed Jan. 22, 1994 PCT Pub. No. WO94/21835 PCT Pub. Date Sep. 29, 1994 In order to improve the toughness characteristics of a cermet alloy, while retaining high resistance to wear, a composition is disclosed which contains 30 to 60% by weight of Ti, 5 to 20% by weight of W, 5 to 15% by weight of Ta, in which up to 70% of the Ta can be replaced by Nb, and 5 to 25% by weight of Ni and/or Co binder with more than 80 mole %, relative to the above transition elements of carbon and nitrogen. The composition is prepared by grinding, compressing and sintering a solid, powder-form mixture containing (Ti,W,Ta,Nb)C powder, Ti(C,N) powder, and WC powder, each powder having a particle size <1.5 μ m, plus Ni powder and/or Co powder. The mixture includes the following ingredients: (a) (Ti,W,Ta,Nb)C with a mean particle size <1.5 μ m, this mixed carbide containing 20 to 50% by weight of TiC, 20 to 40% by weight of WC, and 20 to 40% by weight of (Ta, Nb)C; (b) Ti(C,N), with a mean particle size <1.5 μ m and an N/(C+N) ratio <0.7; WC with a mean particle size <1.5 μ m; and (d) nickel and/or cobalt.

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