

Title (en)  
HARD METAL OR CERMET BODY AND METHOD FOR PRODUCING THE SAME

Title (de)  
HARTMETALL- ODER CERMETKÖRPER UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)  
CORPS EN METAL DUR OU EN CERMET ET PROCEDE DE FABRICATION

Publication  
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Application  
**EP 04732930 A 20040514**

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Abstract (en)  
[origin: WO2005026400A1] The invention relates to a hard metal or cermet body comprising a single or several adjoining surfaces. A first layer with a thickness of between 2-100  $\mu\text{m}$  is located beneath the single surface or at least one of the surfaces, said layer comprising an auxiliary metal fraction of between 2 and 25 mass % and up to 25 volume % nitrides or carbonitrides of one or more metals of the IVa group of the periodic table and/or up to 10 volume % carbides and/or carbonitrides of the elements V, Nb, Ta and/or Cr, with WC making up the residual amount. A second layer with a thickness of between 2 and 40  $\mu\text{m}$  is located beneath the first layer, said second layer having a higher nitrogen fraction than the first layer and consisting essentially of nitrides and/or carbonitrides of metals of the IVa group of the periodic table, in addition to containing phase fractions of up to 10 volume % of carbides, nitrides, carbonitrides or oxycarbonitrides of the elements W, Mo, V, Ta, Nb, Cr and/or fractions that are dissolved in the hard substance phase amounting to up to 5 mass % V, Nb, Ta and up to 2 mass % Cr, Mo, W and also containing up to 15 mass % binding agents. A transition zone with a thickness of between 2 and 100  $\mu\text{m}$  is located beneath the second layer, the composition changing gradually to a homogeneous composition in the interior core of the hard metal or cermet body in said zone. To produce said sequence of layers, after being subjected to thermal treatment to produce a layer rich in an auxiliary metal, the body is treated in a nitrogen atmosphere under a nitrogen pressure of  $5 \times 10^{-3}$  Pa to  $10^{-7}$  Pa below the eutectic.

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