

Title (en)
CUTTING TOOL MADE OF WC-BASED CEMENTED CARBIDE

Title (de)
SCHNEIDWERKZEUG AUS ZEMENTIERTEM CARBID AUF WC-BASIS

Title (fr)
OUTIL DE COUPE RÉALISÉ EN CARBURE CÉMENTÉ À BASE DE CW

Publication
EP 4129540 A4 20240403 (EN)

Application
EP 21776329 A 20210312

Priority

- JP 2020056624 A 20200326
- JP 2021010161 W 20210312

Abstract (en)
[origin: EP4129540A1] A cutting tool made of WC-based cemented carbide and having a cutting edge comprises 8.0 to 14.0 mass% Co; 0.1 to 1.4 mass% Cr₃C₂; and 0.6 to 4.0 mass% at least one selected from the group consisting of TaC, NbC, TiC, and ZrC; the balance being WC and incidental impurities, wherein the following expressions hold: $R=L_1/L_1+L_2$; $R\geq 0.76-0.059\times D\times 10/V-V\gamma\times 0.06$; and $1.0\leq D\leq 4.0$, where L_1 is a total interfacial length between WC grains, L_2 is a total interfacial length between the WC grains and binder phases and between the WC grains and γ phases, V is an area rate (%) of the binder phases; D is a mean diameter (μm) of the WC grains; $V\gamma$ is a theoretical volume rate of the γ phases; and R is a WC-WC interfacial length ratio.

IPC 8 full level
C22C 29/08 (2006.01); **B22F 5/00** (2006.01); **C22C 1/051** (2023.01)

CPC (source: EP)
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C-Set (source: EP)
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Citation (search report)

- [XY] JP 2017088999 A 20170525 - MITSUBISHI HITACHI TOOL ENG LTD
- [Y] WO 2019138599 A1 20190718 - SUMITOMO ELECTRIC HARDMETAL CORP [JP]
- [Y] EP 0665308 B1 20000105 - SUMITOMO ELECTRIC INDUSTRIES [JP]
- See also references of WO 2021193159A1

Designated contracting state (EPC)
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