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=L1/L1+L2;R≥0.76−0.059×D×10/V−Vγ×0.06; and 1.0≤D≤4.0,where L1 is a total interfacial length between WC grains,L2 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;Vγ is a theoretical volume rate of the γ phases; andR 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)

C22C 29/08 (2013.01); B22F 2005/001 (2013.01); B22F 2998/10 (2013.01); C22C 1/051 (2013.01)

C-Set (source: EP)

B22F 2998/10 + C22C 1/05 + B22F 2009/043 + B22F 3/02 + B22F 3/1017 + B22F 3/1028 + B22F 2201/20 + B22F 2003/247 + B22F 2003/242

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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DOCDB simple family (publication)

EP 4129540 A1 20230208; **EP 4129540 A4 20240403**; JP WO2021193159 A1 20210930; WO 2021193159 A1 20210930

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