

Title (en)

Process for boronizing articles made of metal or cermet, and articles provided with a boronized surface.

Title (de)

Verfahren zum Borieren metallischer oder metallkeramischer Gegenstände und mit einer borierten Oberfläche versehene Gegenstände.

Title (fr)

Procédé de boruration de pièces en métal ou cermet et pièces borurées en surface.

Publication

EP 0015813 A1 19800917 (FR)

Application

EP 80400252 A 19800222

Priority

FR 7904991 A 19790227

Abstract (en)

[origin: US4289545A] The invention relates to a process and apparatus for boronizing pieces made of metal or cermet and to surface-boronized pieces. The pieces are placed in a chamber at between 850 DEG and 1,150 DEG C. and they are subjected, in the presence of boron carbide, to a gaseous stream of trifluoroboroxole (BOF)3. The boron carbide is advantageously pulverulent and out of contact with the pieces to be boronized.

Abstract (fr)

L'invention concerne un procédé et un dispositif de boruration de pièces en métal ou cermet et des pièces borurées en surface. On dispose les pièces dans une enceinte 3 entre 850 et 1150°C et on les soumet, en présence de carbure de bore, à un courant gazeux de boroxole trifluoré (BOF)3. Le carbure de bore est avantageusement pulvérulent et hors de contact des pièces à borurer.

IPC 1-7

C23C 11/08; **C23C 9/04**

IPC 8 full level

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Citation (search report)

- FR 1213586 A 19600401 - BERGHAUS ELEKTROPHYSIK ANST
- GB 1436945 A 19760526 - BORAX CONS LTD
- DD 119273 A1 19760412
- US 3936327 A 19760203 - FICHTL WALTER, et al
- US 3673005 A 19720627 - KUNST HELMUT
- FR 2099641 A1 19720317 - BOPP ANTON
- FR 585507 A 19250303
- FR 1221455 A 19600602 - METALLIC SURFACES RES LAB LTD
- US 2887407 A 19590519 - WALTER KOCH
- US 2844492 A 19580722 - ERICH FITZER
- FR 1040863 A 19531019
- FR 2404681 A1 19790427 - SANDVIK AB [SE]
- CHEMICAL ABSTRACTS, Vol. 89. No. 26, Decembre 1978, ref 218580y Columbus Ohio, US T. KATAGIRI et al.: "Application of iron-iron boride (Fe2B) eutectic reaction to surface hardening" page 196 & Kinzoku Hyomen Gijutsu 1978. 29(5) 256-60 * Resume *
- THIN SOLID FILMS, Vol. 45, 1977, S.C. SINGHAL: "A hard diffusion boride coating for ferrous materials", pages 321-329.

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