

Title (en)  
METHOD FOR FORMING A LUBRICATIVE FILM FOR COLD WORKING

Title (de)  
VERFAHREN ZUR HERSTELLUNG EINES SCHMIERFILMS ZUM KALTUMFORMEN

Title (fr)  
PROCEDE PERMETTANT DE FORMER UN FILM LUBRIFIANT ADAPTE AU TRAVAIL A FROID

Publication  
**EP 1119652 A4 20050223 (EN)**

Application  
**EP 99946930 A 19990913**

Priority  

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Abstract (en)  
[origin: WO0015879A1] A phosphate conversion coating of 6 to 20 g/m<sup>2</sup> is formed on a metal substrate, using an electrolytic solution containing zinc ions, phosphate ions, and an auxiliary acid, preferably nitric acid, and passing an electric current, with the substrate serving as the cathode, for a few seconds through the substrate, the electrolyte solution, and a counterelectrode. This provides a method for forming a lubricative film suitable for cold working without generating any sludge and at a high level of productivity. Lubrication performance may be checked by means of a backward punching test. The dies (2) are set to bind the circumference of the cylindrical test specimen (1) and the specimen is then subjected to a downward stroke from a punch (3).

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**C25D 11/36**; **C23C 28/00**

IPC 8 full level  
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**C25D 11/36** (2013.01)

Citation (search report)  

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- [X] WO 9217628 A1 19921015 - HENKEL KGAA [DE]
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- See references of WO 0015879A1

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