

Title (en)  
Lubricant for metal deformation.

Title (de)  
Schmiermittel für die Umformung metallischer Werkstoffe.

Title (fr)  
Lubrifiant pour la déformation des métaux.

Publication  
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Application  
**EP 88104991 A 19880328**

Priority  
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Abstract (en)  
The invention relates to lubricants for the deformation of metallic materials which are suitable for cold-forming, in particular for drawing elongate formed material, and for hot-forming, in particular for drop-forging. The lubricant for cold-forming contains (A) 0.01 to 15% by mass of alkaline earth metal soaps, (B) 0.05 to 15% by mass of alkali metal borate or ammonium borate, (C) 0 to 14% by mass of alkali metal phosphate or ammonium phosphate, (D) 0 to 10% by mass of polymeric organic compounds and (E) 0.005 to 10% by mass of reaction products of components A to D, which have been formed in aqueous solution at a pH above 6.9 and at temperatures below 95 DEG C, the total of the proportions of components A to E being less than 35% by mass. The lubricant for hot-forming contains, in water, (A) 0.25 to 10% by mass of alkaline earth metal soaps, (B) 0.05 to 3% by mass of alkali metal borate or ammonium borate, (C) 0.05 to 8% by mass of alkali metal phosphate or ammonium phosphate, (D) 0.01 to 2% by mass of polymeric organic compounds and (E) 0.005 to 8% by mass of reaction products of components A to D, which have formed in aqueous solution at a pH above 6.9 and at temperatures below 80 DEG C, the total of the proportion of components A to E being less than 20% by mass. The lubricants are environmentally compatible, stable for a long time, highly effective and cheap.

Abstract (de)  
Die Erfindung betrifft Schmiermittel für die Umformung metallischer Werkstoffe, die sich für die Kaltumformung, insbesondere für das Ziehen von strangförmigem Umformgut sowie für die Warmumformung, insbesondere für das Gesenkschmieden, eignen. Das Schmiermittel für die Kaltumformung enthält (A) 0,01 bis 15 Masse-% Erdalkaliseifen, (B) 0,05 bis 15 Masse-% Alkali- oder Ammoniumborat, (C) 0 bis 14 Masse-% Alkali- oder Ammoniumphosphat, (D) 0 bis 10 Masse-% polymere organische Verbindungen und (E) 0,005 bis 10 Masse-% in wässriger Lösung bei einem pH-Wert über 6,9 und bei Temperaturen unter 95 °C entstandene Reaktionsprodukte der Komponenten A bis D, wobei die Summe der Anteile der Komponenten A bis E kleiner als 35 Masse-% ist. Das Schmiermittel für die Warmumformung enthält in Wasser (A) 0,25 bis 10 Masse-% Erdalkaliseifen, (B) 0,05 bis 3 Masse-% Alkali- oder Ammoniumborat, (C) 0,05 bis 8 Masse-% Alkali- oder Ammoniumphosphat, (D) 0,01 bis 2 Masse-% polymere organische Verbindungen und (E) 0,005 bis 8 Masse-% in wässriger Lösung bei einem pH-Wert über 6,9 und bei Temperaturen unter 80 °C entstandene Reaktionsprodukte der Komponenten A bis D, wobei die Summe der Anteile der Komponenten A bis E kleiner als 20 Masse-% ist. Die Schmiermittel sind umweltfreundlich, langzeitstabil, hochwirksam und billig.

IPC 1-7  
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