

Title (en)

WATER-BASE LUBRICANT CONTAINING SULFUR AS COORDINATE ATOM, AND USE THEREOF

Title (de)

SCHWEFEL ALS KOORDINATIONSATOM ENTHALTENDES WASSERBASIERENDES SCHMIERMITTEL UND SEINE ANWENDUNG

Title (fr)

LUBRIFIANT A BASE D'EAU, CONTENANT DU SOUFRE COMME ATOME DE COORDINATION ET LEUR UTILISATION

Publication

EP 0947519 A4 20001220 (EN)

Application

EP 97912498 A 19971118

Priority

- JP 9704197 W 19971118
- JP 30691096 A 19961118

Abstract (en)

[origin: EP0947519A1] An aqueous lubricant is provided which by simple application onto metal surfaces forms lubricating films required for heavy working of metals, and which contains no oil. The aqueous lubricant is prepared by suspending or dispersing a metal chelate compound in water with a surfactant or the like. The metal chelate compound has a polydentate or multidentate chelate ligand, in which at least one of the coordinating atoms is sulfur, coordinated to the coordination site of at least one metal species selected from among zinc, manganese, iron, molybdenum, tin and antimony. When applied onto metal surfaces, the aqueous lubricant forms effective lubricating films on the metal surfaces. The lubricating films contain sulfur as coordinating atoms and therefore, extreme pressure produces sulfur radicals through decomposition by tribo-chemical reactions. The sulfur radicals are highly reactive and react rapidly with the metal surface to produce metal sulfides with a lubricating effect. The sulfur radicals also react with metal ions produced by decomposition of the metal chelate compound, also producing metal sulfides with a lubricating effect. The aqueous lubricants thus exhibit a satisfactory lubricating effect.

IPC 1-7

C07F 3/06; **C07F 7/22**; **C07F 9/90**; **C07F 11/00**; **C07F 13/00**; **C07F 15/02**; **C10M 135/18**; **C10M 139/00**; **C10M 173/00**; **C10M 173/02**; **C23C 22/83**

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CPC (source: EP US)

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Citation (search report)

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- [A] US 4199381 A 19800422 - NITTEL KLAUS-DIETER [DE], et al
- [A] PATENT ABSTRACTS OF JAPAN vol. 007, no. 151 (C - 174) 1 July 1983 (1983-07-01)
- See references of WO 9822472A1

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