

Title (en)

COMPOSITION AND PROCESS FOR LUBRICATED PLASTIC WORKING OF METALS

Title (de)

ZUSAMMENSETZUNG UND VERFAHREN ZUR BESCHICHTUNG VON METALLEN MIT SCHMIERKUNSTSTOFFEN

Title (fr)

COMPOSITION ET PROCEDE POUR L'ENROBAGE DE METAUX AVEC UN PLASTIQUE LUBRIFIE

Publication

EP 1093510 A4 20020605 (EN)

Application

EP 99927194 A 19990609

Priority

- JP 17660298 A 19980609
- US 9912364 W 19990609

Abstract (en)

[origin: WO9964544A1] A lubricant composition for the plastic working of metals that does not require a phosphate undercoating, is waterborne, requires only a simple application process of immersion or spraying followed by drying, and provides an excellent lubricating performance comprises synthetic resin, water-soluble inorganic salt, and water. The weight ratio of the content of salt to that of synthetic resin is from 0.25:1 to 9:1. This composition can also contain liquid and/or solid lubricating agent(s) and extreme pressure additive.

IPC 1-7

C10M 173/02

IPC 8 full level

C10M 111/04 (2006.01); **C10M 169/04** (2006.01); **C10M 173/00** (2006.01)

CPC (source: EP KR)

C10M 111/04 (2013.01 - EP); **C10M 169/04** (2013.01 - EP); **C10M 173/00** (2013.01 - EP KR); **C10M 2201/00** (2013.01 - EP); **C10M 2201/02** (2013.01 - EP); **C10M 2201/041** (2013.01 - EP); **C10M 2201/042** (2013.01 - EP); **C10M 2201/06** (2013.01 - EP); **C10M 2201/065** (2013.01 - EP); **C10M 2201/066** (2013.01 - EP); **C10M 2201/08** (2013.01 - EP); **C10M 2201/081** (2013.01 - EP); **C10M 2201/082** (2013.01 - EP); **C10M 2201/084** (2013.01 - EP); **C10M 2201/087** (2013.01 - EP); **C10M 2201/102** (2013.01 - EP); **C10M 2201/18** (2013.01 - EP); **C10M 2205/022** (2013.01 - EP); **C10M 2205/024** (2013.01 - EP); **C10M 2205/14** (2013.01 - EP); **C10M 2205/16** (2013.01 - EP); **C10M 2205/17** (2013.01 - EP); **C10M 2205/18** (2013.01 - EP); **C10M 2207/125** (2013.01 - EP); **C10M 2207/126** (2013.01 - EP); **C10M 2207/129** (2013.01 - EP); **C10M 2209/04** (2013.01 - EP); **C10M 2209/06** (2013.01 - EP); **C10M 2209/062** (2013.01 - EP); **C10M 2209/08** (2013.01 - EP); **C10M 2209/084** (2013.01 - EP); **C10M 2209/101** (2013.01 - EP); **C10M 2209/11** (2013.01 - EP); **C10M 2209/111** (2013.01 - EP); **C10M 2209/112** (2013.01 - EP); **C10M 2211/044** (2013.01 - EP); **C10M 2211/06** (2013.01 - EP); **C10M 2211/08** (2013.01 - EP); **C10M 2217/024** (2013.01 - EP); **C10M 2217/028** (2013.01 - EP); **C10M 2217/042** (2013.01 - EP); **C10M 2217/043** (2013.01 - EP); **C10M 2217/044** (2013.01 - EP); **C10M 2217/045** (2013.01 - EP); **C10M 2217/06** (2013.01 - EP); **C10M 2219/022** (2013.01 - EP); **C10M 2219/024** (2013.01 - EP); **C10M 2219/062** (2013.01 - EP); **C10M 2219/066** (2013.01 - EP); **C10M 2219/068** (2013.01 - EP); **C10M 2219/082** (2013.01 - EP); **C10M 2223/04** (2013.01 - EP); **C10M 2223/042** (2013.01 - EP); **C10M 2223/045** (2013.01 - EP); **C10N 2010/02** (2013.01 - EP); **C10N 2010/04** (2013.01 - EP); **C10N 2010/06** (2013.01 - EP); **C10N 2010/12** (2013.01 - EP); **C10N 2040/24** (2013.01 - EP); **C10N 2040/241** (2020.05 - EP); **C10N 2040/242** (2020.05 - EP); **C10N 2040/243** (2020.05 - EP); **C10N 2040/244** (2020.05 - EP); **C10N 2040/245** (2020.05 - EP); **C10N 2040/246** (2020.05 - EP); **C10N 2040/247** (2020.05 - EP); **C10N 2050/01** (2020.05 - EP); **C10N 2050/02** (2013.01 - EP)

Citation (search report)

- [X] EP 0303734 A2 19890222 - AKAD WISSENSCHAFTEN DDR [DD]
- [X] GB 1322838 A 19730711 - PYRENE CHEMICAL SERVICES LTD
- [X] US 2957825 A 19601025 - HENRICKS JOHN A
- [X] US 3974674 A 19760817 - OROZCO GILBERT H, et al
- [A] DE 4212667 A1 19930121 - HANANO CORP [JP]
- [A] WO 9614947 A1 19960523 - ECOFORM UMFORMTECHNIK GMBH [DE], et al
- [A] EP 0412788 A1 19910213 - NIHON PARKERIZING [JP]
- See references of WO 9964544A1

Cited by

EP3309855A1; IT202200006158A1

Designated contracting state (EPC)

AT BE DE ES FI FR GB IT SE

DOCDB simple family (publication)

WO 9964544 A1 19991216; AT E321831 T1 20060415; AU 4416299 A 19991230; AU 763155 B2 20030717; CA 2334716 A1 19991216; CA 2334716 C 20090818; CN 1148437 C 20040505; CN 1243150 A 20000202; DE 69930628 D1 20060518; DE 69930628 T2 20070201; EP 1093510 A1 20010425; EP 1093510 A4 20020605; EP 1093510 B1 20060329; ES 2257053 T3 20060716; IN 192718 B 20040515; KR 20000006017 A 20000125; TW 444056 B 20010701

DOCDB simple family (application)

US 9912364 W 19990609; AT 99927194 T 19990609; AU 4416299 A 19990609; CA 2334716 A 19990609; CN 99109715 A 19990609; DE 69930628 T 19990609; EP 99927194 A 19990609; ES 99927194 T 19990609; IN 412BO1999 A 19990603; KR 19990021225 A 19990608; TW 88109556 A 19990608