

Title (en)

LUBRICANT COATED SHEET METAL WITH IMPROVED DEFORMATION PROPERTIES

Title (de)

SCHMIERSTOFFBESCHICHTETES METALLBLECH MIT VERBESSERTEN UMFORMEIGENSCHAFTEN

Title (fr)

TOLE METALLIQUE A REVETEMENT LUBRIFIANT ET A PROPRIETES DE DEFORMATION AMELIOREES

Publication

**EP 1567623 A2 20050831 (DE)**

Application

**EP 03782275 A 20031202**

Priority

- DE 10256639 A 20021203
- EP 0313557 W 20031202

Abstract (en)

[origin: WO2004050808A2] The invention relates to sheet metal or a sheet metal blank provided with a lubricant coating, especially an anti-corrosion oil of the Pre-Lube or Dry Lube variety. The sheet metal or sheet metal blank comprises a layer which is formed by applying a solution containing an organic phosphoric acid ester to the metal surface of the sheet metal. Sheet metal provided with said coating has excellent tribological properties.

IPC 1-7

**C10M 137/04**; B21D 22/20; C10M 173/02; B21C 9/00

IPC 8 full level

**B21D 22/20** (2006.01); **C10M 137/04** (2006.01); **C10M 173/02** (2006.01); **C23C 22/60** (2006.01); **C23C 22/68** (2006.01)

CPC (source: EP KR US)

**B21C 9/00** (2013.01 - KR); **B21D 22/20** (2013.01 - KR); **B21D 22/201** (2013.01 - EP US); **C10M 137/04** (2013.01 - KR); **C10M 173/02** (2013.01 - EP KR US); **C23C 22/60** (2013.01 - EP US); **C23C 22/68** (2013.01 - EP US); **C10M 2201/08** (2013.01 - EP US); **C10M 2201/085** (2013.01 - EP US); **C10M 2201/087** (2013.01 - EP US); **C10M 2215/04** (2013.01 - EP US); **C10M 2215/042** (2013.01 - EP US); **C10M 2219/068** (2013.01 - EP US); **C10M 2219/104** (2013.01 - EP US); **C10M 2219/106** (2013.01 - EP US); **C10M 2223/04** (2013.01 - EP US); **C10M 2223/0405** (2013.01 - EP US); **C10N 2030/06** (2013.01 - EP US); **C10N 2040/24** (2013.01 - EP US); **C10N 2050/02** (2013.01 - EP US); **C10N 2050/023** (2020.05 - EP US); **C10N 2070/00** (2013.01 - EP US); **C10N 2080/00** (2013.01 - EP US)

Citation (search report)

See references of WO 2004050808A2

Citation (examination)

- US 5650097 A 19970722 - WYSONG ERNEST BYRON [US], et al
- EP 1123969 A1 20010816 - MOBIL OIL FRANCE [FR]
- US 4880552 A 19891114 - GUESNET PATRICE [FR], et al

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

**WO 2004050808 A2 20040617**; **WO 2004050808 A3 20050224**; AU 2003289934 A1 20040623; AU 2003289934 B2 20100218; CA 2508716 A1 20040617; CA 2508716 C 20120717; CN 100572511 C 20091223; CN 1742074 A 20060301; DE 10256639 A1 20040624; EP 1567623 A2 20050831; EP 2311928 A2 20110420; EP 2311928 A3 20110907; KR 101177088 B1 20120827; KR 20050101312 A 20051021; RU 2005120742 A 20060610; RU 2343223 C2 20090110; UA 86583 C2 20090512; US 2006100112 A1 20060511; US 7727942 B2 20100601

DOCDB simple family (application)

**EP 0313557 W 20031202**; AU 2003289934 A 20031202; CA 2508716 A 20031202; CN 200380109065 A 20031202; DE 10256639 A 20021203; EP 03782275 A 20031202; EP 10180973 A 20031202; KR 20057010208 A 20031202; RU 2005120742 A 20031202; UA 2005005309 A 20031202; US 53744605 A 20051109