

Title (en)
RAIL THERMAL TREATMENT PROCESS

Title (de)
VERFAHREN ZUM WÄRMEBEHANDELN VON SCHIENEN

Title (fr)
PROCEDE DE TRAITEMENT THERMIQUE DE RAILS

Publication
EP 0610460 B1 19991020 (DE)

Application
EP 93914544 A 19930709

Priority
• AT 145592 A 19920715
• AT 9300116 W 19930709

Abstract (en)
[origin: US6406569B1] A method for the thermal treatment of rails, in particular of the rail head, in which cooling is carried out in a cooling agent that contains a synthetic cooling agent additive, starting at temperatures above 720° C. The treatment is carried out by immersion in the cooling agent until withdrawal of the immersed areas, courses, at a surface temperature between 450 and 550° C. results without temperature equalization across the whole of the cross-section, section, there by avoiding hardening of the rail web whilst maintaining an optimal cooling rate for the rail head.

IPC 1-7
C21D 9/04

IPC 8 full level
C21D 9/04 (2006.01); **C21D 1/60** (2006.01); **C21D 1/63** (2006.01)

CPC (source: EP US)
C21D 9/04 (2013.01 - EP US); **C21D 1/60** (2013.01 - EP US); **C21D 1/63** (2013.01 - EP US); **C21D 2221/02** (2013.01 - EP US)

Designated contracting state (EPC)
AT BE CH DE DK ES FR GB GR IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 9402652 A1 19940203; AT 399346 B 19950425; AT A145592 A 19940915; AT E185845 T1 19991115; BR 9305583 A 19960102; CA 2116216 A1 19940203; CA 2116216 C 20010918; CN 1040232 C 19981014; CN 1085258 A 19940413; CZ 283571 B6 19980513; CZ 56394 A3 19940615; DE 59309839 D1 19991125; EP 0610460 A1 19940817; EP 0610460 B1 19991020; ES 2139661 T3 20000216; HR P931054 A2 19950630; HR P931054 B1 20000229; KR 0134900 B1 19980615; LT 3008 B 19940825; LT IP797 A 19940325; LV 11192 A 19960420; LV 11192 B 19960620; MD 940198 A 19960131; PL 175451 B1 19981231; PL 302766 A1 19940822; RU 94019951 A 19960410; SK 281598 B6 20010510; SK 29494 A3 19941109; TW 259818 B 19951011; UA 26282 C2 19990719; US 2001023724 A1 20010927; US 6406569 B1 20020618; US 6547897 B2 20030415

DOCDB simple family (application)
AT 9300116 W 19930709; AT 145592 A 19920715; AT 93914544 T 19930709; BR 9305583 A 19930709; CA 2116216 A 19930709; CN 93109864 A 19930714; CZ 56394 A 19930709; DE 59309839 T 19930709; EP 93914544 A 19930709; ES 93914544 T 19930709; HR P931054 A 19930715; KR 19940070834 A 19940314; LT IP797 A 19930715; LV 930992 A 19930715; MD 940198 A 19940714; PL 30276693 A 19930709; RU 94019951 A 19940314; SK 29494 A 19930709; TW 82105625 A 19930715; UA 94005532 A 19930709; US 53394495 A 19950926; US 86428801 A 20010525