

Title (en)

Method of heat treating in vacuum furnaces.

Title (de)

Verfahren zur Wärmebehandlung in Vakuumöfen.

Title (fr)

Procédé pour le traitement thermique dans un four à vide.

Publication

EP 0495151 B1 19940622 (DE)

Application

EP 91105103 A 19910328

Priority

DE 4100989 A 19910115

Abstract (en)

[origin: EP0495151A1] The invention relates to the heat treatment of workpieces in a vacuum furnace, using hydrogen. For convective heating and for high-pressure gas-quenching of the workpieces, usually nitrogen and helium are used. To achieve shorter heating and/or cooling times, the use of hydrogen is desirable, but this raises safety engineering problems. The risks are here considerably reduced if, according to the invention, a space which surrounds at least a part of the vacuum furnace and is insulated gas-tight is flushed with an inert gas and continuously checked for its hydrogen content and oxygen content.

IPC 1-7

C21D 1/773

IPC 8 full level

C21D 1/773 (2006.01)

CPC (source: EP)

C21D 1/773 (2013.01)

Citation (examination)

DE 52162 C

Cited by

EP1767660A1; FR2863628A1; US6692593B2; EP0869189A1; EP1233078A3; WO2005066376A1

Designated contracting state (EPC)

AT DE FR GB

DOCDB simple family (publication)

EP 0495151 A1 19920722; EP 0495151 B1 19940622; AT E107707 T1 19940715; DE 4100989 A1 19920716; DE 59102016 D1 19940728

DOCDB simple family (application)

EP 91105103 A 19910328; AT 91105103 T 19910328; DE 4100989 A 19910115; DE 59102016 T 19910328