

Title (en)

METHOD OF OPTIMIZING AN OXYGEN FREE HEAT TREATING PROCESS

Title (de)

VERFAHREN ZUR OPTIMIERUNG EINES SAUERSTOFFFREIEN WÄRMEBEHANDLUNGSVERFAHRENS

Title (fr)

PROCÉDÉ D'OPTIMISATION D'UN PROCESSUS DE TRAITEMENT THERMIQUE SANS OXYGÈNE

Publication

**EP 1966398 A1 20080910 (EN)**

Application

**EP 07865917 A 20071220**

Priority

- US 2007088352 W 20071220
- US 64544306 A 20061226

Abstract (en)

[origin: US2008149226A1] A method of controlling an oxygen-free heat treating process in an atmospheric pressure furnace is disclosed. The present method employs an oxygen-free gas atmosphere including hydrogen gas in concentrations between about 1.0 percent to 10.0 percent, a hydrocarbon gas, such as propylene, in concentrations of between about 0.1 percent and 10.0 percent that varies as a function of time, with the balance of the gas atmosphere being nitrogen. The presently disclosed oxygen-free carburization process uses a precisely controlled gas atmosphere to minimize inter-granular oxidation, eliminate the formation of soot and cementite, and avoid hydrogen embrittlement.

IPC 8 full level

**C21D 1/76** (2006.01); **C23C 8/22** (2006.01); **C23C 8/32** (2006.01)

CPC (source: EP US)

**C21D 1/76** (2013.01 - EP US); **C23C 8/22** (2013.01 - EP US); **C23C 8/32** (2013.01 - EP US)

Citation (search report)

See references of WO 2008083031A1

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