

Title (en)

Process and device for efficient cooling of workpieces

Title (de)

Verfahren und Vorrichtung zur effektiven Abkühlung von Behandlungsgut

Title (fr)

Procédé et dispositif pour le refroidissement efficace de produits

Publication

**EP 0962538 A3 20030924 (DE)**

Application

**EP 99110596 A 19990601**

Priority

DE 19824574 A 19980602

Abstract (en)

[origin: EP0962538A2] The workpiece (2) is cooled to a first critical temperature already in the furnace (1) by means of one or more directed gas streams. The workpiece is then transferred into the cooling chamber (6) without any contact with a damaging atmosphere. In the cooling chamber, the workpiece is subjected to quenching/cooling by means of a pressurized gas stream. An Independent claim is also included for an apparatus which includes a connector flange (3) which surrounds the opening (9) of the cooling chamber, and allows the latter to be docked to the heat treatment furnace. It further includes a workpiece transport unit (5) and a blocking unit (4).

IPC 1-7

**C21D 1/74**; **C21D 1/767**; **C21D 1/613**

IPC 8 full level

**C21D 1/767** (2006.01); **C21D 1/773** (2006.01); **C21D 9/00** (2006.01); **C21D 1/613** (2006.01); **C21D 1/74** (2006.01)

CPC (source: EP)

**C21D 1/767** (2013.01); **C21D 1/773** (2013.01); **C21D 9/0062** (2013.01); **C21D 1/613** (2013.01); **C21D 1/74** (2013.01)

Citation (search report)

- [X] DE 2138363 B1 19730118
- [DXA] EP 0313888 A1 19890503 - DEGUSSA [DE]
- [DA] EP 0727498 A1 19960821 - ALD VACUUM TECHN GMBH [DE]
- [A] DE 3233361 A1 19840315 - VNI PK I T I ELEKTROTERMICESKO [SU]
- [A] SU 601317 A1 19780405 - ELBERT ANATOLIY YA [SU]

Cited by

EP1228828A3; EP1233078A3; US7018584B2; WO2007054398A1; US9303294B2

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

**EP 0962538 A2 19991208**; **EP 0962538 A3 20030924**; DE 19824574 A1 19991209

DOCDB simple family (application)

**EP 99110596 A 19990601**; DE 19824574 A 19980602