

Title (en)

Cooling process and cooling apparatus for refrigerated vehicles

Title (de)

Kühlverfahren und Kühlvorrichtung für Kühlfahrzeuge

Title (fr)

Procédé de refroidissement et dispositif de refroidissement pour des véhicules frigorifiques

Publication

EP 1659355 A3 20080213 (EN)

Application

EP 05025113 A 20051117

Priority

DE 102004055526 A 20041117

Abstract (en)

[origin: EP1659355A2] The invention relates to a cooling process for cooling at least one refrigeration chamber (3, 4) of a refrigerated vehicle, having at least one first heat exchanger (5) in a first refrigeration chamber (3), and at least one second heat exchanger (6), the first heat exchanger (5) being flow-connected to the second heat exchanger (6), and a first stream of coolant (1), in particular of liquid and/or gaseous nitrogen, flowing firstly through the first heat exchanger (5) and then through the second heat exchanger (6), the first stream of coolant (1) releasing a refrigeration content to the refrigeration chambers (3, 4) and then itself being discharged into the open air as a waste gas, in which process a second stream of coolant (2), in particular liquid and/or gaseous nitrogen, is fed to the first stream of coolant (1) downstream of the first heat exchanger (5) and upstream of the second heat exchanger (6), and to a cooling apparatus which is suitable for carrying out the process according to the invention. The invention is distinguished by the fact that it realizes operationally safe and reliable, accurately controllable, indirect, highly efficient cooling in a simple way, which can be used in particular in refrigerated vehicles, even in the event of extreme fluctuations in the outside temperature.

IPC 8 full level

F25D 7/00 (2006.01); **F25D 3/10** (2006.01)

CPC (source: EP)

F25D 3/105 (2013.01); **F25D 7/00** (2013.01)

Citation (search report)

- [XY] US 5267443 A 19931207 - ROEHRICH ROLAND L [US], et al
- [Y] US 3959982 A 19760601 - DENIS JOSEPH HERBERT, et al
- [Y] US 4862698 A 19890905 - MORGAN PHILLIP [US], et al
- [XA] US 3705500 A 19721212 - JEHLE WILLIAM ROBERT
- [A] US 2002174666 A1 20021128 - VIEGAS HERMAN H [US], et al
- [A] US 2002129613 A1 20020919 - VIEGAS HERMAN H [US], et al
- [A] US 5396777 A 19950314 - MARTIN PATRICK S [US]
- [A] EP 0038673 A2 19811028 - UNION CARBIDE CORP [US]
- [A] WO 0153764 A1 20010726 - PEDOLSKY HOWARD [US]

Cited by

WO2011151548A1; DE102017008210A1; DE102017008210B4; JP2013015308A; FR2960952A1; FR2991757A1; EP3147600A1; CN111148931A; WO2007116382A3; WO2007116380A3; WO2013182766A1; EP2711601A2; DE102012018461A1; DE102017008211A1; DE102017008211B4; DE102021003305A1; WO2022269090A1; WO2019042714A1; EP3686524A1; WO2020156736A1; US11300248B2; US11878572B2

Designated contracting state (EPC)

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

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

EP 1659355 A2 20060524; EP 1659355 A3 20080213

DOCDB simple family (application)

EP 05025113 A 20051117