

Title (en)

USE OF LIQUIDS CONTAINING 1,1,1,3,3-PENTAFLUOROBUTANE AS COOLING AGENTS OR HEAT CARRIERS

Title (de)

VERWENDUNG VON GEMISCHEN, DIE 1,1,1,3,3-PENTAFLUORBUTAN ENTHALTEN, ALS KÄLTEMITTEL ODER WÄRMETRÄGER

Title (fr)

UTILISATION DE MELANGES RENFERMANT DU 1,1,1,3,3-PENTAFLUOROBUTANE COMME AGENT REFRIGERANT OU COMME CALOPORTEUR

Publication

EP 1339810 A1 20030903 (DE)

Application

EP 01996585 A 20011109

Priority

- DE 10056606 A 20001115
- EP 0112957 W 20011109

Abstract (en)

[origin: WO0240613A1] The invention relates to the use of liquids containing 1,1,1,3,3-Pentafluorobutane (R365mfc) and at least one other partly fluorized hydro carbon from the 1,1,1,2-Tetrafluoroethane (R134a), Pentafluoroethane (R125), 1,1,1,3,3-Pentafluoropropane (R245fa) and 1,1,1,2,3,3-Heptafluoropropane (R227ea) groups as the operating liquid in high temperature heat pumps. Cooling liquids used according to the invention are characterised by a high temperature drift.

IPC 1-7

C09K 5/04

IPC 8 full level

F25B 1/00 (2006.01); **C09K 5/04** (2006.01)

CPC (source: EP KR US)

C09K 5/04 (2013.01 - KR); **C09K 5/045** (2013.01 - EP US)

Citation (search report)

See references of WO 0240613A1

Citation (examination)

- EP 0940382 A1 19990908 - ATOCHEM NORTH AMERICA ELF [US]
- WO 9201762 A1 19920206 - DU PONT [US]
- GB 2327427 A 19990127 - RHODIA LIMITED [GB]

Designated contracting state (EPC)

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

DOCDB simple family (publication)

WO 0240613 A1 20020523; WO 0240613 A8 20020620; AU 2069002 A 20020527; CN 1220748 C 20050928; CN 1444637 A 20030924;
DE 10056606 A1 20020523; EP 1339810 A1 20030903; HK 1057575 A1 20040408; JP 2004514047 A 20040513; KR 20030058961 A 20030707;
MX PA02012918 A 20030922; US 2004031948 A1 20040219; US 6814884 B2 20041109

DOCDB simple family (application)

EP 0112957 W 20011109; AU 2069002 A 20011109; CN 01813247 A 20011109; DE 10056606 A 20001115; EP 01996585 A 20011109;
HK 04100318 A 20040115; JP 2002543612 A 20011109; KR 20027018089 A 20021231; MX PA02012918 A 20011109; US 43826903 A 20030515