

Title (en)

COOLING AND/OR LIQUEFYING METHOD AND SYSTEM

Title (de)

VERFAHREN UND SYSTEM ZUR KÜHLUNG UND / ODER VERFLÜSSIGUNG

Title (fr)

PROCÉDÉ ET INSTALLATION DE REFROIDISSEMENT ET/OU DE LIQUÉFACTION

Publication

EP 4010646 A1 20220615 (FR)

Application

EP 20743082 A 20200708

Priority

- FR 1908950 A 20190805
- EP 2020069182 W 20200708

Abstract (en)

[origin: WO2021023457A1] The invention relates to a method for cooling and/or liquefying a user fluid flow, the method using a cooling and/or liquefying system comprising a low-temperature refrigeration device (1), the refrigeration device (1) comprising a working circuit (10) forming a loop and containing a working fluid, the refrigeration device (1) comprising a cooling exchanger (8) intended to extract heat from the user fluid flow by heat exchange with the working fluid circulating in the working circuit (10), the working circuit (10) forming a cycle comprising, in a series: a compression mechanism (2, 3) a cooling mechanism (5), an expansion mechanism (7), and a reheating mechanism (6), the system comprising a pipe (25) for circulation of the user fluid flow to be cooled in heat exchange with the cooling exchanger (8) of the refrigeration device (1), the method comprising a step of cooling a user fluid flow in the cooling exchanger (8) and, after this cooling step, a step of cleaning impurities solidified in the cooling exchanger (8), the cleaning step comprising stopping of the refrigeration device (1) and, simultaneously, circulation of a user fluid flow in the cooling exchanger (8).

IPC 8 full level

F25J 1/00 (2006.01); **F25B 1/053** (2006.01); **F25B 1/10** (2006.01); **F25B 9/06** (2006.01); **F25B 11/04** (2006.01); **F25B 47/02** (2006.01); **F25B 49/02** (2006.01); **F25J 1/02** (2006.01)

CPC (source: EP KR US)

F25B 1/053 (2013.01 - EP KR); **F25B 9/06** (2013.01 - EP KR); **F25B 11/04** (2013.01 - EP KR); **F25B 47/02** (2013.01 - EP KR); **F25J 1/0022** (2013.01 - US); **F25J 1/0025** (2013.01 - EP KR); **F25J 1/0037** (2013.01 - US); **F25J 1/005** (2013.01 - EP KR US); **F25J 1/0062** (2013.01 - EP KR); **F25J 1/0065** (2013.01 - EP KR); **F25J 1/0067** (2013.01 - EP KR); **F25J 1/0072** (2013.01 - EP KR); **F25J 1/0204** (2013.01 - EP KR); **F25J 1/0212** (2013.01 - EP KR); **F25J 1/0248** (2013.01 - EP KR); **F25J 1/0265** (2013.01 - EP KR); **F25J 1/0277** (2013.01 - EP KR); **F25J 1/0284** (2013.01 - EP KR); **F25J 1/0288** (2013.01 - EP KR US); **F25J 1/0298** (2013.01 - EP KR); **F25B 2400/13** (2013.01 - EP KR); **F25B 2400/14** (2013.01 - EP KR); **F25B 2500/04** (2013.01 - EP KR); **F25B 2500/09** (2013.01 - EP KR); **F25B 2600/0251** (2013.01 - EP KR); **F25J 2205/20** (2013.01 - EP KR US); **F25J 2220/66** (2013.01 - EP KR); **F25J 2230/20** (2013.01 - EP); **F25J 2280/20** (2013.01 - EP KR US); **F25J 2290/34** (2013.01 - EP KR US); **F25J 2290/62** (2013.01 - EP KR US)

Citation (search report)

See references of WO 2021023457A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2021023457 A1 20210211; AU 2020325493 A1 20220224; CA 3145905 A1 20210211; CN 114270112 A 20220401; EP 4010646 A1 20220615; FR 3099817 A1 20210212; FR 3099817 B1 20221104; JP 2022543296 A 20221011; KR 20220042368 A 20220405; US 2022260310 A1 20220818

DOCDB simple family (application)

EP 2020069182 W 20200708; AU 2020325493 A 20200708; CA 3145905 A 20200708; CN 202080056111 A 20200708; EP 20743082 A 20200708; FR 1908950 A 20190805; JP 2022507523 A 20200708; KR 20227003824 A 20200708; US 202017633016 A 20200708