

Title (en)

METHOD AND APPARATUS FOR LIQUEFYING A GAS RICH IN CARBON DIOXIDE

Title (de)

VERFAHREN UND VORRICHTUNG ZUR VERFLÜSSIGUNG EINES KOHLENDIOXIDREICHEN GASES

Title (fr)

PROCÉDÉ ET APPAREIL DE LIQUÉFACTION D'UN GAZ RICHE EN DIOXYDE DE CARBONE

Publication

EP 4337901 A1 20240320 (FR)

Application

EP 22727842 A 20220504

Priority

- FR 2105037 A 20210512
- EP 2022062037 W 20220504

Abstract (en)

[origin: WO2022238212A1] A method for liquefying a CO₂-rich gas flow containing at least 90mol% of CO₂ involves the following steps: compressing (C2, C3) the CO₂-rich gas flow, liquefying (L) and separating in order to produce a first liquid flow at a first pressure MP and a first temperature T1. Extracting part of the first liquid flow at the first pressure and the first temperature by way of first product, supercooling part of the first liquid flow down to a temperature below the first temperature by indirect exchange of heat in a heat exchanger, expanding the liquid supercooled down to the second temperature T2 until it reaches a second pressure lower than the first pressure, the second pressure being equal to or greater than the equilibrium pressure of the expanded liquid, and extracting part of the expanded liquid by way of second product and evaporating another part of the liquid in the heat exchanger by exchange of heat with the part of the first flow in order to produce a vaporized liquid.

IPC 8 full level

F25J 1/00 (2006.01)

CPC (source: EP)

F25J 1/0027 (2013.01); **F25J 1/0045** (2013.01); **F25J 1/0202** (2013.01); **F25J 1/0254** (2013.01); **F25J 1/0274** (2013.01); **F25J 2220/82** (2013.01); **F25J 2240/40** (2013.01); **F25J 2245/90** (2013.01); **F25J 2290/34** (2013.01); **F25J 2290/62** (2013.01)

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2022238212 A1 20221117; AU 2022272446 A1 20231123; EP 4337901 A1 20240320; FR 3122918 A1 20221118; FR 3122918 B1 20230609

DOCDB simple family (application)

EP 2022062037 W 20220504; AU 2022272446 A 20220504; EP 22727842 A 20220504; FR 2105037 A 20210512