

Title (en)

MIXED REFRIGERANT LIQUEFACTION SYSTEM AND METHOD WITH PRE-COOLING

Title (de)

VERFLÜSSIGUNGSSYSTEM UND -VERFAHREN FÜR GEMISCHTES KÄLTEMITTEL MIT VORKÜHLUNG

Title (fr)

SYSTÈME ET PROCÉDÉ DE LIQUÉFACTION DE RÉFRIGÉRANT MIXTE AVEC PRÉ-REFROIDISSEMENT

Publication

EP 3781885 A1 20210224 (EN)

Application

EP 19722343 A 20190416

Priority

- US 201862660518 P 20180420
- US 2019027634 W 20190416

Abstract (en)

[origin: US2019323769A1] A system for cooling a gas includes a pre-cool heat exchanger and a liquefaction heat exchanger. The pre-cool heat exchanger uses a pre-cool refrigerant to pre-cool a feed gas stream prior to the stream being directed to a liquefaction heat exchanger. The liquefaction heat exchanger uses a mixed refrigerant to further cool the pre-cooled gas. The pre-cool heat exchanger also pre-cools the liquefaction mixed refrigerant used by the liquefaction heat exchanger.

IPC 8 full level

F25J 1/00 (2006.01); **F25J 1/02** (2006.01)

CPC (source: EP KR US)

F25J 1/0022 (2013.01 - EP KR US); **F25J 1/004** (2013.01 - US); **F25J 1/0042** (2013.01 - EP KR); **F25J 1/0052** (2013.01 - EP); **F25J 1/0055** (2013.01 - EP KR US); **F25J 1/0087** (2013.01 - EP KR US); **F25J 1/009** (2013.01 - EP KR); **F25J 1/0092** (2013.01 - US); **F25J 1/0097** (2013.01 - EP KR); **F25J 1/0212** (2013.01 - EP KR US); **F25J 1/0214** (2013.01 - EP KR US); **F25J 1/0215** (2013.01 - EP KR); **F25J 1/0216** (2013.01 - EP KR US); **F25J 1/0219** (2013.01 - US); **F25J 1/0227** (2013.01 - EP KR); **F25J 1/0238** (2013.01 - US); **F25J 1/0244** (2013.01 - EP); **F25J 1/0262** (2013.01 - EP KR); **F25J 1/0267** (2013.01 - US); **F25J 1/0268** (2013.01 - EP KR US); **F25J 1/0279** (2013.01 - US); **F25J 1/0283** (2013.01 - EP KR); **F25J 1/029** (2013.01 - EP KR); **F25J 1/0292** (2013.01 - EP KR); **F25J 1/0297** (2013.01 - EP KR); **F25J 3/0209** (2013.01 - US); **F25J 2200/78** (2013.01 - US); **F25J 2210/04** (2013.01 - US); **F25J 2220/60** (2013.01 - US); **F25J 2230/24** (2013.01 - US); **F25J 2230/30** (2013.01 - US); **F25J 2230/60** (2013.01 - US); **F25J 2240/40** (2013.01 - EP KR); **F25J 2245/02** (2013.01 - US); **F25J 2250/02** (2013.01 - EP KR); **F25J 2270/90** (2013.01 - EP KR); **F25J 2270/906** (2013.01 - EP KR)

Citation (search report)

See references of WO 2019204277A1

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)

US 2019323769 A1 20191024; AR 115345 A1 20201223; AU 2019255212 A1 20201126; BR 112020019239 A2 20210518; CA 3095583 A1 20191024; CN 112368532 A 20210212; EP 3781885 A1 20210224; JP 2021522463 A 20210830; JP 2023109864 A 20230808; KR 20210021288 A 20210225; MX 2020010525 A 20201106; PE 20210785 A1 20210422; TW 202004108 A 20200116; TW I729379 B 20210601; WO 2019204277 A1 20191024

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US 201916385269 A 20190416; AR P190101035 A 20190417; AU 2019255212 A 20190416; BR 112020019239 A 20190416; CA 3095583 A 20190416; CN 201980027080 A 20190416; EP 19722343 A 20190416; JP 2020557338 A 20190416; JP 2023079824 A 20230515; KR 20207033320 A 20190416; MX 2020010525 A 20190416; PE 2020001512 A 20190416; TW 108113381 A 20190417; US 2019027634 W 20190416