

Title (en)
GAS REPLACEMENT METHOD

Title (de)
GASERSATZVERFAHREN

Title (fr)
PROCÉDÉ DE REMPLACEMENT DE GAZ

Publication
EP 4056886 A4 20230118 (EN)

Application
EP 20902565 A 20200908

Priority
• JP 2019229388 A 20191219
• JP 2020033891 W 20200908

Abstract (en)
[origin: EP4056886A1] This gas replacement method includes: a step in which an inactive gas having a larger specific gravity than a first gas is supplied to a tank filled with the first gas, and a separation layer resulting from the inactive gas is formed below the first gas; and a step in which a second gas having a larger specific gravity than the inactive gas is supplied to a lower part of the tank, and the first gas and the separation layer are sequentially discharged from an upper part of the tank.

IPC 8 full level
F17C 13/00 (2006.01); **B63B 25/12** (2006.01); **B63J 2/08** (2006.01); **F17C 9/00** (2006.01)

CPC (source: EP KR)
B63B 25/16 (2013.01 - KR); **F17C 9/00** (2013.01 - EP KR); **F17C 13/00** (2013.01 - KR); **B63B 25/16** (2013.01 - EP); **F17C 2201/0109** (2013.01 - EP); **F17C 2201/0128** (2013.01 - EP); **F17C 2201/035** (2013.01 - EP); **F17C 2201/054** (2013.01 - EP); **F17C 2205/013** (2013.01 - EP); **F17C 2221/013** (2013.01 - EP); **F17C 2223/0153** (2013.01 - EP); **F17C 2223/0161** (2013.01 - EP); **F17C 2223/033** (2013.01 - EP); **F17C 2223/045** (2013.01 - EP); **F17C 2225/047** (2013.01 - EP); **F17C 2227/0121** (2013.01 - EP); **F17C 2227/0135** (2013.01 - EP); **F17C 2227/0192** (2013.01 - EP); **F17C 2227/04** (2013.01 - EP); **F17C 2227/041** (2013.01 - EP); **F17C 2227/044** (2013.01 - EP KR); **F17C 2260/042** (2013.01 - EP); **F17C 2265/015** (2013.01 - EP); **F17C 2270/0105** (2013.01 - EP)

Citation (search report)
• [A] JP 2001032998 A 20010206 - ISHIKAWAJIMA HARIMA HEAVY IND
• [A] JP 4781032 B2 20110928
• [A] WO 2018222230 A1 20181206 - EXXONMOBIL UPSTREAM RES CO [US], et al
• [A] US 4604115 A 19860805 - BONNETON MICHEL [FR], et al
• See also references of WO 2021124621A1

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

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EP 4056886 A1 20220914; **EP 4056886 A4 20230118**; **EP 4056886 B1 20231101**; **EP 4056886 C0 20231101**; AU 2020408428 A1 20220630; AU 2020408428 B2 20231207; CN 114787550 A 20220722; CN 114787550 B 20231222; ES 2963128 T3 20240325; JP 2021095092 A 20210624; JP 2023181287 A 20231221; KR 20220092600 A 20220701; WO 2021124621 A1 20210624

DOCDB simple family (application)
EP 20902565 A 20200908; AU 2020408428 A 20200908; CN 202080083800 A 20200908; ES 20902565 T 20200908; JP 2019229388 A 20191219; JP 2020033891 W 20200908; JP 2023180460 A 20231019; KR 20227018757 A 20200908