

Title (en)

OPTIMIZING THE HYDROTHERMAL UPGRADING OF HEAVY CRUDE

Title (de)

VERFAHREN ZUR OPTIMIERUNG DER HYDROTHERMALEN AUFWERTUNG VON SCHWEREM ROHÖL

Title (fr)

PROCÉDÉ POUR OPTIMISER LA VALORISATION HYDROTHERMIQUE DU BRUT LOURD

Publication

EP 3119858 B1 20210421 (EN)

Application

EP 15765080 A 20150318

Priority

- US 201414218619 A 20140318
- US 2015021258 W 20150318

Abstract (en)

[origin: WO2015143039A2] A system and method is provided for upgrading a continuously flowing process stream including heavy crude oil (HCO). A reactor receives the process stream in combination with water, at an inlet temperature within a range of about 60 °C to about 200 °C. The reactor includes one or more process flow tubes having a combined length of about 30 times their aggregated transverse cross-sectional dimension, and progressively heats the process stream to an outlet temperature T(max)¹ within a range of between about 260 °C to about 400 °C. The reactor maintains the process stream at a pressure sufficient to ensure that it remains a single phase at T(max)¹. A controller selectively adjusts the rate of flow of the process stream through the reactor to maintain a total residence time of greater than about 1 minute and less than about 25 minutes.

IPC 8 full level

C10G 9/36 (2006.01); **C10G 9/08** (2006.01); **C10G 9/20** (2006.01); **C10G 45/26** (2006.01)

CPC (source: EP RU)

C10G 9/14 (2013.01 - RU); **C10G 9/36** (2013.01 - EP); **C10G 31/08** (2013.01 - RU); **C10G 47/36** (2013.01 - RU)

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

DOCDB simple family (publication)

WO 2015143039 A2 20150924; WO 2015143039 A3 20160114; CA 2943078 A1 20150924; CA 2943078 C 20230919; EP 3119858 A2 20170125; EP 3119858 A4 20171122; EP 3119858 B1 20210421; RU 2016140701 A 20180420; RU 2016140701 A3 20181009; RU 2687072 C2 20190507

DOCDB simple family (application)

US 2015021258 W 20150318; CA 2943078 A 20150318; EP 15765080 A 20150318; RU 2016140701 A 20150318