

Title (en)
SOLVENT DE-ASPHALTING WITH CYCLONIC SEPARATION

Title (de)
LÖSUNGSMITTELENTASPHALTIERUNG MIT ZYKLONENABSCHEIDUNG

Title (fr)
DÉSASPHALTAGE PAR SOLVANT AVEC SÉPARATION CYCLONIQUE

Publication
EP 2760974 B1 20190213 (EN)

Application
EP 11873058 A 20110930

Priority
CA 2011001106 W 20110930

Abstract (en)
[origin: WO2013044346A1] The present invention relates to a method of improving a heavy hydrocarbon, such as bitumen, to a lighter more fluid product and, more specifically, to a final hydrocarbon product that is refinery-ready and meets pipeline transport criteria without the addition of diluent. A solid asphaltene by-product is created for easy handling and further processing. The invention is targeted to enhance Canadian bitumen, but has general application in improving any heavy hydrocarbon. The process comprises: (a) pre-heating a process fluid in a heater to a designed temperature; (b) moving the pre-heated process fluid to a reactor, and optimally converting asphaltenes in the process fluid within the reactor to produce a stream of thermally affected asphaltene-nch fraction(s), and a stream of non-condensable vapour and lighter liquid hydrocarbon(s); (c) deasphalting the thermally affected asphaltene-nch stream with a solvent extraction process into a stream of heavy deasphalted oil (DAO) and a second stream containing concentrated asphaltene; (d) separating dry thermally affected asphaltene solids from the second stream in a separation unit, recovering the process solvent; (e) a produced refinery feedstock comprising at least one of the produced streams.

IPC 8 full level
C10G 1/04 (2006.01); **C10G 9/00** (2006.01); **C10G 21/00** (2006.01); **C10G 55/04** (2006.01)

CPC (source: EP KR)
C10C 3/00 (2013.01 - KR); **C10C 3/08** (2013.01 - KR); **C10C 3/10** (2013.01 - KR); **C10G 1/04** (2013.01 - KR); **C10G 9/00** (2013.01 - EP); **C10G 21/00** (2013.01 - KR); **C10G 21/003** (2013.01 - EP); **C10G 55/04** (2013.01 - EP); **C10G 2300/206** (2013.01 - EP); **C10G 2300/308** (2013.01 - EP)

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 2013044346 A1 20130404; AU 2011378107 A1 20140424; BR 112014007815 A2 20170418; CN 104105780 A 20141015; CN 104105780 B 20170517; EP 2760974 A1 20140806; EP 2760974 A4 20150624; EP 2760974 B1 20190213; ES 2725551 T3 20190924; KR 20140092815 A 20140724; KR 20180064553 A 20180614; MX 2014003951 A 20150414; MX 355399 B 20180418; RU 2014117517 A 20151110; SG 11201401274P A 20140926

DOCDB simple family (application)
CA 2011001106 W 20110930; AU 2011378107 A 20110930; BR 112014007815 A 20110930; CN 201180075179 A 20110930; EP 11873058 A 20110930; ES 11873058 T 20110930; KR 20147010399 A 20110930; KR 20187015333 A 20110930; MX 2014003951 A 20110930; RU 2014117517 A 20110930; SG 11201401274P A 20110930