

Title (en)
Apparatus and method for producing aqueous emulsions or suspensions

Title (de)
Vorrichtung und Verfahren zur Herstellung wässriger Emulsionen oder Suspensionen

Title (fr)
Appareil et procédé de production d'émulsions ou de suspensions aqueuses

Publication
EP 2992949 A1 20160309 (EN)

Application
EP 14183318 A 20140903

Priority
EP 14183318 A 20140903

Abstract (en)
The present invention proposes an apparatus (20) for mixing a first liquid (12) and at least a second liquid (14) by producing shear and/or cavitation. Said apparatus (20) comprises a premixing chamber (38), wherein a first liquid (12) and at least a second liquid (14) are mixed to form a premix (44), said premixing chamber (38) comprising an inlet (40) from a feed line (32) for a first liquid (12) and at least one inlet (42) from a feed line (34) for at least a second liquid (14). The apparatus (20) further comprises a spray element (64) with an orifice (66) therein forming the outlet (68) of the premixing chamber (38), wherein said orifice (66) is configured to discharge the premix (44) from the premixing chamber (38) in a jet (70) and produce shear or cavitation in the premix jet (70). The apparatus (20) further comprises a mixing chamber (72) with an outlet (74), the mixing chamber (72) collecting the jet (70) exiting the premixing chamber (38) as a mix (24) and discharging the mix (24) through the outlet (74). The feed line (32) for the first liquid (12) at least partially comprises a material (36) with a specific thermal conductivity of less than 15 W/(m*K). The present invention also proposes to use the apparatus (20) to produce an aqueous emulsion or suspension. The present invention further proposes a method for the production of an aqueous emulsion or suspension.

IPC 8 full level
B01F 3/08 (2006.01); **B01F 5/06** (2006.01); **B01F 11/02** (2006.01); **B01F 13/10** (2006.01); **B01F 15/02** (2006.01)

CPC (source: EP)
B01F 23/41 (2022.01); **B01F 23/4111** (2022.01); **B01F 25/4521** (2022.01); **B01F 31/81** (2022.01); **B01F 33/821** (2022.01); **B01F 35/7174** (2022.01); **B01F 35/71755** (2022.01)

Citation (applicant)

- WO 9513787 A2 19950526 - HENKEL KGAA [DE], et al
- US 6479041 B2 20021112 - HUFF RAINER [DE], et al
- US 8517595 B2 20130827 - MORRISON JR LOWEN ROBERT [US], et al
- US 3399031 A 19680827 - MCCARTHY WILLIAM W
- US 4675194 A 19870623 - GAFFNEY BERNARD J [US]
- US 5026167 A 19910625 - BERLINER III SAMUEL [US]
- US 5837272 A 19981117 - FIERRO JR LOUIS ANTHONY [US], et al
- SOFW-JOURNAL, vol. 124, May 1998 (1998-05-01), pages 308 - 313
- SOFW-JOURNAL, vol. 118, May 1992 (1992-05-01), pages 287 - 296
- "International Cosmetic Ingredient Dictionary and Handbook", vol. 2, article "Surfactants"

Citation (search report)

- [XY] US 2010020631 A1 20100128 - GANSMULLER ERICH WILLIAM [US], et al
- [X] US 2011172137 A1 20110714 - COROMINAS FRANCESC [BE], et al
- [Y] US 2010125106 A1 20100520 - KATSUHARA HIDEYA [JP], et al
- [A] WO 2011101637 A1 20110825 - PURSUIT DYNAMICS PLC [GB], et al
- [A] EP 0535781 A1 19930407 - HIDALGO OSCAR MARIO GUAGNELLI [MX]

Cited by
CN109224905A

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)
EP 2992949 A1 20160309

DOCDB simple family (application)
EP 14183318 A 20140903