

Title (en)

MIXING DEVICE FOR TWO-PHASE CONCURRENT VESSELS

Title (de)

MISCHVORRICHTUNG FÜR ZWEIPHASEN-PARALLELSTROMBEHÜLTER

Title (fr)

DISPOSITIF DE MELANGE A ECOULEMENT BIPHASE DANS UN REACTEUR CATALYTIQUE

Publication

**EP 1562697 A1 20050817 (EN)**

Application

**EP 03769259 A 20031105**

Priority

- DK 0300757 W 20031105
- DK PA200201718 A 20021108

Abstract (en)

[origin: WO2004041426A1] Vapor and liquid flows concurrently through a vertical vessel in a catalytic reactor (1). A horizontal flow obstructing mixing box (8) is located within the vessel and forces the vapor and liquid to pass in a vertical direction through one or more entrances to the horizontal mixing box. The mixing box consists of circular top (13) and bottom (14) walls and a cylindrical side wall (15). Inside the mixing box vertical flow baffles (18, 19, 20) are provided. These flow baffles form one or more mixing orifices (21, 22). The entire process stream is flowing through each mixing orifice at high flow velocity. Each mixing orifice is followed by a tee where the process stream is divided into two lower velocity streams. In the transition from high flow velocity in the mixing orifice to lower flow velocity in the divided streams, turbulent flow conditions are generated. In the lower velocity divided streams hold-up time is provided to allow for heat and mass transfer. The flow inside the mixing box is mainly in the horizontal plane. The outlet stream from the mixer equilibrated regarding temperature and chemical composition.

IPC 1-7

**B01J 8/04**; **B01F 3/04**; **C10G 49/00**

IPC 8 full level

**B01D 3/20** (2006.01); **B01F 3/04** (2006.01); **B01F 5/06** (2006.01); **B01J 8/04** (2006.01); **C10G 49/00** (2006.01)

CPC (source: EP)

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Citation (search report)

See references of WO 2004041426A1

Citation (examination)

US 4233269 A 19801111 - KAYE LARRY A, et al

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CN113412152A; WO2020163671A1

Designated contracting state (EPC)

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DOCDB simple family (application)

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