

Title (en)

METHOD FOR PRODUCING ACROLEIN AND/OR ACRYLIC ACID FROM PROPANE

Title (de)

VERFAHREN ZUR HERSTELLUNG VON ACROLEIN UND/ODER ACRYLSÄURE AUS PROPAN

Title (fr)

PROCEDE DE PRODUCTION D'ACROLEINE ET/OU D'ACIDE ACRYLIQUE A PARTIR DE PROPANE

Publication

EP 1109774 A1 20010627 (DE)

Application

EP 99941557 A 19990810

Priority

- DE 19837517 A 19980819
- EP 9905793 W 19990810

Abstract (en)

[origin: DE19837517A1] In the production of acrolein and/or acrylic acid from propane, the oxygen required in reaction zone 1 (catalytic dehydrogenation to propene) is supplied as nitrogen-containing modified air containing less N₂ and more O₂ than normal air and some of the N₂ in the off-gas from further zones (propene oxidation) is removed before recycling to zone 1. A process for the production of acrolein (AC) and/or acrylic acid (AA) from propane, involving (a) partial oxydehydrogenation to propene with molecular oxygen in a first reaction zone (1) using homogeneous and/or heterogeneous catalysts, (b) further catalytic gas-phase oxidation of the unseparated product gas mixture in further reaction zone(s) (2) to give AC and/or AA, (c) separation of AC and/or AA and water from the product mixture and (d) recycling unreacted propane to zone 1. In this process, the molecular oxygen required in zone 1 (other than circulating oxygen) is added to the starting gas mixture in the form of nitrogen-containing modified air with a lower N₂ content and a higher O₂ content than normal air, and at least some of the molecular N₂ in the residual gas stream is removed before this stream is recycled to zone 1.

IPC 1-7

C07C 57/05; **C07C 45/35**; **C07C 5/333**

IPC 8 full level

C07C 27/12 (2006.01); **C07B 61/00** (2006.01); **C07C 5/48** (2006.01); **C07C 11/06** (2006.01); **C07C 45/28** (2006.01); **C07C 45/33** (2006.01); **C07C 45/35** (2006.01); **C07C 47/22** (2006.01); **C07C 51/215** (2006.01); **C07C 51/25** (2006.01); **C07C 57/05** (2006.01); **C07C 57/055** (2006.01)

CPC (source: EP US)

C07C 45/33 (2013.01 - EP US); **C07C 45/35** (2013.01 - EP US); **C07C 51/215** (2013.01 - EP US); **C07C 51/252** (2013.01 - EP US)

Citation (search report)

See references of WO 0010961A1

Designated contracting state (EPC)

BE DE FR NL

DOCDB simple family (publication)

DE 19837517 A1 20000224; AU 5512699 A 20000314; BR 9914612 A 20010807; CN 1312788 A 20010912; EP 1109774 A1 20010627; JP 2002523390 A 20020730; MY 133225 A 20071031; US 6426433 B1 20020730; WO 0010961 A1 20000302

DOCDB simple family (application)

DE 19837517 A 19980819; AU 5512699 A 19990810; BR 9914612 A 19990810; CN 99809667 A 19990810; EP 9905793 W 19990810; EP 99941557 A 19990810; JP 2000566235 A 19990810; MY PI9903529 A 19990817; US 76322501 A 20010220