

Title (en)
METHOD FOR PRODUCING ACROLEIN BY HETEROGENEOUS CATALYTIC GAS-PHASE PARTIAL OXIDATION OF PROPENE

Title (de)
VERFAHREN ZUR HERSTELLUNG VON ACROLEIN DURCH HETEROGEN KATALYSIERTE GASPHASEN-PARTIALOXIDATION VON PROPEN

Title (fr)
PROCEDE DE FABRICATION D'ACROLEINE PAR OXYDATION PARTIELLE EN PHASE GAZEUSE CATALYTIQUE HETEROGENE DU PROPENE

Publication
EP 1144352 A2 20011017 (DE)

Application
EP 00912429 A 20000115

Priority
• DE 19902562 A 19990122
• EP 0000304 W 20000115

Abstract (en)
[origin: DE19902562A1] A mixture containing propene and oxygen (O₂) is passed at elevated temperature through: (i) a zone containing a first catalyst in the solid aggregate state to oxidize part of the propene to acrolein at a propene/O₂ molar ratio of over 1 and (ii) other zone(s) with solid catalyst, with addition of O₂, so that ≥ 90 mole-% of the propene reacts with ~ 80 mole-% selectivity to acrolein. In the production of acrolein by gas phase partial oxidation of propene with oxygen (O₂) over a heterogeneous catalyst in the solid aggregate state: (i) a mixture containing propene and O₂ in over 1:1 molar ratio is passed at elevated temperature through a first reaction zone containing a first catalyst in the solid aggregate state to oxidize part of the propene to acrolein, then (ii) the reaction mixture is passed at elevated temperature through other reaction zone(s) with a solid catalyst charge, with addition of (gas containing) O₂ in at least one of the later zones to increase the O₂/propene molar ratio, so that ≥ 90 mole-% of the propene fed to zone I reacts with ~ 80 mole-% selectivity to acrolein. Independent claims are also included for (a) the production of acrylic acid from propene, including this process; (b) apparatus for the gas phase oxidation of propene to acrolein; (c) apparatus for the gas phase oxidation of propene to acrolein and then of acrolein to acrylic acid.

IPC 1-7
C07C 45/35

IPC 8 full level
C07C 45/35 (2006.01); **C07C 51/25** (2006.01)

CPC (source: EP US)
C07C 45/35 (2013.01 - EP US); **C07C 51/252** (2013.01 - EP US)

Citation (search report)
See references of WO 0043341A2

Designated contracting state (EPC)
BE DE

DOCDB simple family (publication)
DE 19902562 A1 20000727; BR 0007601 A 20011030; CN 1336908 A 20020220; EP 1144352 A2 20011017; US 6410785 B1 20020625; WO 0043341 A2 20000727; WO 0043341 A3 20010426

DOCDB simple family (application)
DE 19902562 A 19990122; BR 0007601 A 20000115; CN 00802952 A 20000115; EP 0000304 W 20000115; EP 00912429 A 20000115; US 86929401 A 20010718