Title (en)

Process and installation for the selective hydrogenation of catalytic cracking gasoline

Title (de)

Verfahren und Anlage für die selektive Hydrierung von katalytischen Crackbenzinen

Title (fr)

Procédé et installation pour le traitement par hydrogénation sélective d'une essence de craquage catalytique

Publication

EP 0685552 B1 20000209 (FR)

Application

EP 95401244 A 19950529

Priority

FR 9406708 A 19940601

Abstract (en)

[origin: EP0685552A1] A new method is used for the selective hydrogenation of petrol, obtd. from a catalytic cracking process, with a di-olefin content less than 5%, cyclopentadiene less than 1%, mercaptans 1-300 ppm. The petrol cut C5 - 210 degrees C is contacted with a catalyst comprising 0.1-1% Pd deposited on a support contg. at least 50% Al2O3, at 4-25 bar, 80-200 degrees C and LHSV of 1-10h<-1>. Figures (1) and (2) illustrate the nature of the process. In figure (1), a C3-180 degrees C cut is delivered to the de-butaniser (3) to separate the C3-C4 fraction. The C5-180 degrees C (or C5-160 degrees C or C5-210 degrees C, where applicable), i.e. the C5 + petrol cut from catalytic cracking is introduced in a zone (4) of selective hydrogenation and H2 in also introduced (5). The hydrogenated cut passes into (6) of sepn. which is a de-pentaniser (C5 sepn.) or de-hexaniser (C5 + C6 sepn.). Thus a C5 or C5 + C6 fraction is obtd., sent to an etherification unit and a C7+ fraction sent to a petrol stock. The catalytic hydrogenation reactor, shown in figure (2), (10) is arranged in two catalytic zones (11) and (12); the first is traversed by the liq. charge and some H2 (less than the stoichiometric amt. necessary to convert all diolefins to mono olefins). In this zone the sweetening process also takes place. The second zone receives the charge from the first zone (and the remainder of the H2 required to convert diolefin to olefins and to isomerise prim. and sec. olefins to tert olefins). The proportion (vol.) of the first zone is at most 50% of the sum of the two zones (pref. 15-30%). The hydrogenation unit operates at pressures lower than the de-butaniser, and the de-pentaniser (or de-hexaniser) requires only 13-15 bar. Charge circulation can thus be effected by a slight de-pressurisation at the exit of the hydrogenation unit. The high temp. at the base of the de-butaniser and the high activity of the hydrogenation catalyst allows the unit (4) to be operated without further pre-heating of the charge.

IPC 1-7

C10G 45/40; C10G 69/04

IPC 8 full level

C10G 45/40 (2006.01); **C10G 69/04** (2006.01)

CPC (source: EP)

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Cited by

EP3317238A4; CN104560135A; EP0884373A1; FR2764299A1; US6118034A; EP0832958A1; FR2753717A1; US6007704A; CN114763493A; EP0884102A1; FR2764210A1; EP0831140A1; FR2753718A1; US6709639B1; US6838060B1; WO2012022849A1; US6686309B1; US6187173B1; EP2161076A1

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