Title (en)

METHOD OF DESULPHURATING OLEFIN GASOLINES COMPRISING AT LEAST TWO DISTINCT HYDRODESULPHURATION STEPS

Title (de)

VERFAHREN ZUR RAFFINATION VON OLEFINISCHEN BENZINSTOFFEN MIT MINDESTENS ZWEI VERSCHIEDENEN PHASEN DER HYDRORAFFINATION

Title (fr)

PROCÉDÉ DE DÉSULFURATION D'ESSENCES OLÉFINIQUES COMPRENANT AU MOINS DEUX ÉTAPES DISTINCTES D'HYDRODÉSULFURATION

Publication

EP 1849850 B1 20220330 (FR)

Application

EP 07290436 A 20070410

Priority

FR 0603630 A 20060424

Abstract (en)

[origin: EP1849850A1] The process of producing petrol with low sulfur and mercaptans content, comprises parallely hydrodesulfurizing (HDS1 and HDS2) the petrol having a charge resulting from a catalytic cracking unit, and purifying and recycling the excess hydrogen obtained during the hydrodesulfurization. Flow of hydrogen in the hydrodesulfurization (HDS2) is lower than a flow of hydrogen in the hydrodesulfurization (HDS1). The hydrogen necessary for intervening reactions is allowed to pass through the hydrodesulfurization (HDS2) step. A purge gas of the hydrodesulfurization is passed to a purification treatment. The process of producing petrol with low sulfur and mercaptans content, comprises parallely hydrodesulfurizing (HDS1 and HDS2) the petrol having a charge resulting from a catalytic cracking unit, and purifying and recycling the excess hydrogen obtained during the hydrodesulfurization. Flow of hydrogen in the hydrodesulfurization (HDS2) is lower than a flow of hydrogen in the hydrodesulfurization (HDS1). The hydrogen necessary for intervening reactions is allowed to pass through the hydrodesulfurization (HDS2) step. A purge gas of the hydrodesulfurization is passed to a purification treatment. A ratio of the flow of hydrogen in hydrodesulfurization (HDS1 and HDS2) units to flow of charge at standard conditions is 50-1000 Nm 3>/m 3> and 30-800 Nm 3>/m 3> respectively. The charge is distilled in a light fraction corresponding to a fraction of petrol whose boiling point is lower than 100[deg] C, in a heavy fraction corresponding to a fraction of petrol whose boiling point is higher than 160[deg] C, and in a core fraction corresponding to an intermediate fraction between the light and heavy fractions. A mixture having the light fraction of petrol and intermediate fraction is treated during the hydrodesulfurization (HDS1) step in a reactor using a catalyst for producing selective hydrodesulfurization with a rate of hydrogenation (lower than 60%) of mono-olefins. The heavy fraction of petrol is treated during hydrodesulfurization (HDS2) step in a reactor using a catalyst for producing selective hydrodesulfurization with a rate of hydrogenation (lower than 90%) of mono-olefins. The charge is pre-treated to hydrogenate diolefins and mono-olefins, and to transform the light sulfur compound saturated with sulfides or heavier mercaptans to a reaction with mono-olefins. The catalyst has an amorphous and porous support, a metal, a non-metal, an average pore diameter of lower than 22 nm, and a surface density of 2x 10 -> 4> to 4x 10 -> 3>.

IPC 8 full level

C10G 65/16 (2006.01); **C10G 45/02** (2006.01)

CPC (source: EP KR US)

C10G 45/02 (2013.01 - EP KR US); **C10G 45/08** (2013.01 - KR); C10G 2400/02 (2013.01 - EP US)

Cited by

FR3013724A1; FR3013722A1; RU2666589C1; WO2015078675A1; US10072221B2; WO2015078674A1

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