

Title (en)  
Process for production of high quality gasoline with low aromatic content

Title (de)  
Verfahren zur Herstellung von Benzin hoher Qualität mit niedrigem Aromatengehalt

Title (fr)  
Procédé pour la production d'essence de haute qualité à faible teneur en aromatiques

Publication  
**EP 1357167 A1 20031029 (EN)**

Application  
**EP 03006545 A 20030324**

Priority  
DK PA200200576 A 20020418

Abstract (en)  
A two-stage process for production of high-octane gasoline from a hydrocarbon stream comprising C4-C12 hydrocarbon mixtures of paraffins, optionally including cycloalkanes, aromatics and olefins is disclosed. During the first step linear molecules are activated and converted predominantly to mono-branched isomers. Present cyclic molecules and olefins are hydrogenated, but conversion must be sufficiently low to avoid ring opening. Only such (low) amount of multi-branched isomers is formed in the first reaction zone that extent of cracking is still acceptable. Concentration of multi-branched isomers is consecutively increased in the second step. Reaction of mono-branched isomers requires lower activation energy than cracking and isomerisation of linear molecules. Monomethyl-paraffins readily react to their multi-branched counterparts with a high selectivity under mild reaction conditions with catalysts having a Hammet acidity value lower than -10 at temperature of maximum 100 DEG C and at least 50 DEG C lower than in the first step. These conditions effectively isomerise hydrocarbon molecules containing tertiary carbon, while other feed components are little effected. The combination of both steps utilising different catalysts and conditions is essential to achieve a high selectivity. Both reaction steps can be combined with separation of low octane number paraffin molecules by a suitable separation process.  
<IMAGE>

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IPC 8 full level  
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**C10G 59/02** (2013.01 - EP US); **C10G 2400/02** (2013.01 - EP US)

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