

Title (en)
PROCESS FOR PREPARING ALKENES

Title (de)
VERFAHREN ZUR HERSTELLUNG VON ALKENEN

Title (fr)
PROCÉDÉ DE PRÉPARATION D'ALCÈNES

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Application
EP 20757272 A 20200813

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Abstract (en)
[origin: WO2021043556A1] The present invention relates to a process for preparing alkenes by catalytic reaction of syngas to a first mixture containing alkenes and alcohols, alcohols contained in this mixture being reacted to the corresponding alkenes in at least one subsequent step by dehydration. According to the invention, at least one alkene having two to four C atoms is obtained as an isolated product from the product mixture by processing and/or separating the mixture either prior to or after the step of dehydration of the alcohols. During the catalytic reaction of the syngas a catalyst is preferably used that comprises non-graphitic carbon grains with cobalt nanoparticles dispersed therein, the cobalt nanoparticles having an average diameter d_p in the range of 1 nm to 20 nm and the average distance D between individual cobalt nanoparticles in the non-graphitic carbon grains being in the range of 2 nm and 150 nm, and ω , the combined total mass fraction of the metal in the non-graphitic carbon grains, is in a range of 30 wt.% to 70 wt.% of the total mass of the non-graphitic carbon grains, and d_p , D and ω satisfy the following relation: $4.5 d_p / \omega > D \geq 0.25 d_p / \omega$. By way of the process of the invention a higher proportion of alkenes can be obtained with comparatively little effort and specific alkenes can be isolated by specific processing and/or steps of separation, and these alkenes can for example be used as reactants in other syntheses in industrial processes.

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