

Title (en)  
METHOD FOR PROCESSING A GASEOUS COMPOSITION

Title (de)  
VERFAHREN ZUR AUFBEREITUNG EINES GASFÖRMIGEN STOFFGEMISCHES

Title (fr)  
PROCÉDÉ DE TRAITEMENT D'UNE COMPOSITION GAZEUSE

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Application  
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Abstract (en)  
[origin: WO2021043560A1] The present invention relates to a process of preparing alcohols with at least two C atoms by catalytic reaction of syngas to a mixture that contains alkanes, alkenes and alcohols, alkenes contained in said mixture being reacted to the corresponding alcohols in a subsequent step. According to said method, the alkenes are reacted to alcohols in at least one subsequent step by hydrating the alkenes. The method according to the invention preferably provides for at least one step to be carried out prior to the hydration of the alkenes to the corresponding alcohols and after the catalytic reaction of the syngas, during which step the product mixture obtained by the reaction is separated into a gas phase and a liquid phase. The use of specific catalysts having a considerably higher selectivity for alkenes than for alkanes is preferred, these catalysts comprising 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  $\omega$ , 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  $\omega$  satisfy the following relation:  $4.5 d_p / \omega > D \geq 0.25 d_p / \omega$ .

IPC 8 full level  
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**B01D 3/145** (2013.01 - US); **B01D 3/36** (2013.01 - US); **B01D 3/40** (2013.01 - US); **B01D 53/1418** (2013.01 - US); **B01D 53/1425** (2013.01 - US); **B01D 53/1487** (2013.01 - EP US); **B01D 53/229** (2013.01 - US); **B01D 61/362** (2013.01 - US); **C07C 1/043** (2013.01 - US); **C07C 1/0485** (2013.01 - EP US); **C07C 7/005** (2013.01 - US); **C07C 7/06** (2013.01 - US); **C07C 7/08** (2013.01 - US); **C07C 7/11** (2013.01 - EP US); **C07C 7/144** (2013.01 - US); **C07C 27/06** (2013.01 - EP); **C07C 27/08** (2013.01 - US); **C07C 29/04** (2013.01 - EP US); **C07C 29/151** (2013.01 - EP); **C07C 29/76** (2013.01 - EP); **C10G 2/332** (2013.01 - EP); **C10G 53/08** (2013.01 - US); **B01D 2252/205** (2013.01 - EP US); **B01D 2256/16** (2013.01 - EP); **B01D 2256/20** (2013.01 - EP); **B01D 2256/22** (2013.01 - EP); **B01D 2256/245** (2013.01 - EP); **B01D 2257/7022** (2013.01 - EP); **B01D 2311/2626** (2013.01 - US); **B01D 2311/2669** (2013.01 - US); **C07C 2521/18** (2013.01 - US); **C07C 2523/46** (2013.01 - EP); **C07C 2523/63** (2013.01 - EP); **C07C 2523/72** (2013.01 - US); **C07C 2523/75** (2013.01 - EP US); **C07C 2523/889** (2013.01 - US); **C10G 2400/20** (2013.01 - US); **Y02P 20/50** (2015.11 - EP)

C-Set (source: EP)  
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6. **C07C 29/76 + C07C 31/04**  
7. **C07C 29/76 + C07C 31/08**  
8. **C07C 29/76 + C07C 31/10**  
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