

Title (en)  
PROCESS AND DEVICE FOR STEAM-CRACKING A LIGHT AND A HEAVY HYDROCARBON CHARGE

Title (de)  
VERFAHREN UND VORRICHTUNG ZUM DAMPF-CRACKEN EINER LEICHTEN UND EINER SCHWEREN  
KOHLENWASSERSTOFFBESCHICKUNG

Title (fr)  
PROCEDE ET DISPOSITIF DE VAPOCRAQUAGE D'UNE CHARGE D'HYDROCARBURES LEGERS ET D'UNE CHARGE HYDROCARBURES  
LOURDS

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Application  
**EP 94926242 A 19940906**

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Abstract (en)  
[origin: WO9507959A1] The invention relates to a process and device with a convection zone (A) and a radiation zone (B) in which the process has a first stage for the precracking of a charge of light hydrocarbons (1) and a second stage for the subsequent co-cracking of the mixture of said precracked light charge (7) and a charge of heavy hydrocarbons (2). According to the invention, the process involves: the separate preheating of the two charge streams (1, 2) in the convection zone (A) in which the preheating temperature of each charge stream remains below the respective initial cracking temperatures; the precracking (5) of the preheated light hydrocarbons, mixing the precracked light hydrocarbon stream (7) with the preheated and unprecacked heavy hydrocarbon stream (8) to form a mixed stream (9); strongly heating the mixed stream (9) to a higher temperature than the initial cracking temperature, by feeding the mixture into the radiation zone (B) of the furnace (10); co-cracking in the radiation zone (B) of the furnace (10) and cooling the separated gases outside the furnace (10). The two charge streams (1, 2) are preferably preheated to above 300 DEG C, the preheated light hydrocarbons are precracked (5) at a temperature of 780 and 920 DEG C and the precracked light hydrocarbons (7) are mixed (9) with the preheated heavy charge (8). The quantity and temperature of the two streams (7, 8) are set in such a way that the temperature of the mixture (9) is higher than 400 DEG C and lower than the initial cracking temperature. The mixture (9) may be separated into individual streams (12) before entry into the radiation zone (B). The quantity of the hydrocarbon-containing fraction in the light charge (1) is below 50 %, and preferably between 4 and 45 % and even more preferably between 5 and 35 %, of the total quantity of hydrocarbon-containing fractions in both charges (1, 2). The light hydrocarbons (1) preferably have an average molecular weight from 25 to 60 (preferably C2 to C5) and the heavy hydrocarbons (2) have an average molecular weight from 70 to 500 (preferably vacuum gas oils and distillates).

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