

Title (en)  
TWO-STAGE METHOD FOR PRODUCING BUTANE DIOL WITH INTERMEDIATE SEPARATION OF SUCCINIC ANHYDRIDE

Title (de)  
ZWEISTUFIGES VERFAHREN ZUR HERSTELLUNG VON BUTANDIOL MIT ZWISCHENABTRENNUNG VON BERNSTEINSÄUREANHYDRID

Title (fr)  
PROCEDE EN DEUX ETAPES POUR PRODUIRE DU BUTANDIOL AVEC SEPARATION INTERMEDIAIRE D'ANHYDRIDE D'ACIDE SUCCINIQUE

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Application  
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Abstract (en)  
[origin: WO03104175A1] The invention relates to a method for producing optionally alkyl substituted 1,4 butane diol by the two-stage catalytic hydrogenation of C4 dicarboxylic acids and/or their derivatives in the gaseous phase. Said method comprises the following steps: (a) introduction of a gaseous stream of a C4 dicarboxylic acid or a derivative thereof at between 200 and 300 DEG C and between 2 and 60 bar into a first reactor and a catalytic gaseous phase hydrogenation to form a product containing gamma -butyrolactone that is optionally alkyl-substituted; (b) separation of succinic anhydride from the product obtained in step (a), preferably to achieve a residual content of < approx. 0.3 to 0.2 wt. %, (c) introduction of the product stream obtained in step (b) into a second reactor at a temperature of between 150 DEG C and 240 DEG C and pressure of between 15 and 100 bar and a catalytic gaseous phase hydrogenation to obtain optionally alkyl-substituted 1,4-butane diol; (d) separation of the desired product from the intermediate products, by-products and optionally the non-converted educt; (e) optional return of the non-converted intermediate products to one or both hydrogenation stages, whereby a respective catalyst containing = 95 wt. %, preferably 5 to 95 wt. % and in particular 10 to 80 wt. % CuO and = 5 wt. %, preferably 5 to 95 wt. % and in particular 20 to 90 wt. % of an oxidic support, is used in both hydrogenation stages and in the second reactor a higher pressure prevails than in the first reactor.

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