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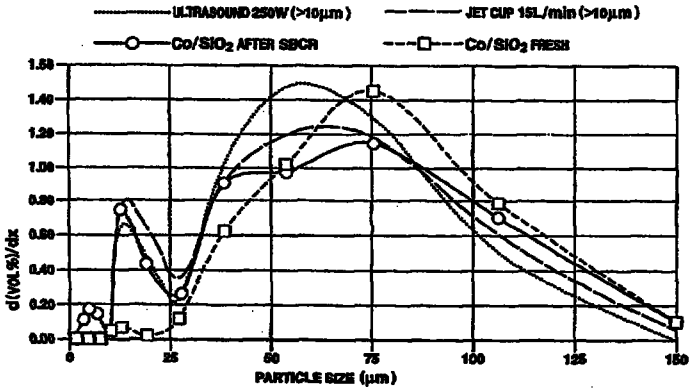
(54) Title: REDUCING FISCHER-TROPSCH CATALYST ATTRITION LOSSES IN HIGH AGITATION REACTION SYSTEMS



(57) Abstract: A method for reducing catalyst attrition losses in hydrocarbon synthesis processes conducted in high agitation reaction systems; a method of producing an attrition-resistant catalyst; a catalyst produced by such method; a method of producing an attrition-resistant catalyst support; and a catalyst support produced by such method. The inventive methods and catalysts have several aspects. In one aspect, the catalyst preferably comprises a γ-alumina support including an amount of titanium effective for increasing the attrition resistance of the catalyst. In another aspect, the catalyst preferably comprises a γ-alumina support which has been treated, after calcination, with an acidic, aqueous solution. In another aspect, the catalyst preferably comprises cobalt on a γ-alumina support wherein the cobalt has been applied to the γ-alumina support by totally aqueous, incipient wetness-type impregnation. In another aspect, the catalyst preferably comprises cobalt on a γ-alumina support with an amount of a lanthana promoter effective for increasing the attrition resistance of the catalyst. In another aspect, the catalyst preferably comprises a γ-alumina support produced from boehmite having a crystallite size, in the 021 plane, in the range of from about 30 to about 55 angstroms. Use of the catalysts in high agitation reaction systems results in reduced catalyst attrition losses.

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