



[12] Patent

[11] Patent No.: GC 0000305	Number of the Decision to Grant the Patent: 5/1513
[45] Date of Publishing the Grant of the Patent: 01/11/2006 6/2006	Date of the Decision to Grant the Patent: 12/12/2005
[21] Application No.: GCC/P/2001/1640 [22] Filing Date: 25/09/2001 [30] Priority: [31] Priority No. [32] Priority date [33] State 0023781.8 28/09/2000 GB [72] Inventor: John Richard Hensman [73] Owner: Kvaerner Process Technology Limited, 20 Eastbourne Terrace, London W2 6LE, United Kingdom [74] Agent: Suleiman Ibrahim Al-Ammar	[51] Int. Cl. ⁷ : B01J 23/74; C07C 1/04, 1/06 [56] Cited Documents: - EP 0450861 A2 (EXXON RESEARCH AND ENGINEERING COMPANY) 09 October 1991 - US 4624967 A (FIATO et al.) 25 November 1986

[54] PRECESS FOR PRODUCING A LIQUID HYDROCARBON
PRODUCT BY A FISCHER TROPSCH PROCESS

[57] Abstract: A process for producing a liquid hydrocarbon product from hydrogen and carbon monoxide comprises: (a) providing a reaction vessel containing a slurry of particles of a particulate Fischer Tropsch catalyst in a liquid medium comprising a hydrocarbon, the particles of catalyst having a particle size range such that no more than about 10% by weight of the particles of catalyst have a particle size which lies in an upper particle size range extending up to a maximum particle size, (b) supplying hydrogen and carbon monoxide to the reaction vessel, (c) maintaining In the reaction vessel reaction conditions effective for conversion of hydrogen and carbon monoxide to a liquid hydrocarbon product by the Fischer Tropsch reaction, (d) maintaining mixing conditions in the reaction vessel sufficient to establish a circulation pattern throughout the reaction vessel including an up flowing path for slurry and a down flowing path for slurry, the upward velocity of the slurry in the up flowing slurry path being greater than about 75% of the mean downward velocity of the particle5 of catalyst of the upper particle size range when measured in stagnant liquid medium, the reaction vessel being substantially devoid of stagnant zones wherein the catalyst particles can settle out of the slurry, (e) recovering from the reaction vessel a liquid stream comprising the liquid hydrocarbon product; and (f) recovering from the reaction vessel an off gas stream comprising methane as well as un reacted hydrogen 2nd carbon monoxide.

No. of claims: 19

No. of figures: 3

