

<p>04345 K/02 H09 PITT-15.07.81          PITTSBURG &amp; MIDWAY *US 4364-818          15.07.81-US-282731 (21.12.82) C10g-01/06          Coal liquefaction with added pyrite - in amts. controlled according to calcium content of coal</p>	<p>H(9-A) N(2-A) 099</p>
<p><b>C03-014073</b> in the liquefaction of high-Ca (<math>\geq 0.8</math> wt.%) coals by hydrogenating a slurry of the coal in a distillate solvent, pref. in admixture with recycle slurry (dissolved solid coal + mineral residue), the improvement comprises increasing the 5C-900°F boiling liquid product yield by adding pyrite (I) to the feed in inverse proportion to the Ca content of the coal.</p> <p>Pref. (I) is pulverised (20-100 microns) pyrite obtained from the water washing of raw coal and is used in amts. of 1-10 (pref. 1-5, esp. 2-5) wt.% based on the weight (MF) of the feed coal. Addition is pref. controlled in response to measurements of the Ca content of the feed coal and the Fe content of the recycle slurry.</p> <p><b>ADVANTAGES</b>          The amt. of (I) used is minimised, reducing its contribution to the slurry pumping load and disposal problems.</p>	<p><b>DETAILS</b>          Specifically, the amt. of (I) used is less than that required to achieve the same 5C - 900°F liq. yield from a feed coal contg. &lt; 0.6 wt.% Ca.</p> <p>The solvent is pref. a 350-900°F boiling recycle distillate. The recycle slurry pref. contains 20-40 (esp. 25-35) wt.% coal. The reactants are pref. preheated to 700-760°F, and the dissolver is pref. operated at 750-900 (esp. 820-870)°F and a total pressure of 1000-3000 (esp. 1500-2500) psi. The H<sub>2</sub>:coal ratio is pref. 10000-80000 (esp. 20000-50000) scf/ton and the residence time is 0.1-4 (pref. 0.2-2) hrs. (Ipp920).</p> <p>US4367818</p>