

15394

<p>16394C/09 GULF OIL CORP 13.12.78-US-969160 (19.02.80) C10g-01/04</p>	<p>H09 13.12.78-US-969160 (19.02.80) C10g-01/04</p>	<p>GULO 13.12.78 *US 4189-374</p>	<p>H(9-A1). ● 7</p>
<p>Coal liquefaction process with internal heat transfer - with hydrogen addition only after preheating stage</p>			<p>stream to the preheater vessel in step (d) to be quenched and simultaneously heat the slurry, and (i) venting vapour from the preheater independently from slurry removal.</p>
<p>A coal liquefaction process comprises (a) passing wet coal to a predrying zone, (b) passing the partially dried coal together with a recycle slurry (comprising normally solid dissolved coal, liquid coal and mineral residue) to a back-mixed feed slurry mixing vessel operated at below process pressure, (c) venting vapour from the vessel independently from slurry removal, (d) pressurising the effluent slurry from the mixing vessel to process pressure and passing it to a preheater in which it is heated to a level at which at least part of the coal dissolves, (e) passing the slurry, together with H₂, to a dissolver zone for hydrocracking to produce liquid coal and hydrocarbon gases, (f) passing the dissolver zone effluent through a high-pressure vapour-liquid separator where an overhead vapour stream (comprising H₂, hydrocarbon gases and naphtha) and a slurry (comprising liquid coal and normally solid dissolved coal and suspended mineral residue) are obtained, (g) recycling a portion of the separator slurry to step (b), (h) passing the overhead vapour</p>			<p><u>ADVANTAGES</u> The hydrogenation and hydrocracking reactions are initiated by a heated part of the H₂ introduced into the dissolver to act as a trigger; thereafter the process generates its own heat via exothermic reactions. The fact that the H₂ is not introduced into the preheater allows the hot dissolver vapours to be vented through the preheater to permit heat recovery by direct heat transfer thus compounding the heat economy effect realised by the H₂ heat trigger.</p> <p><u>DETAILS</u> Pref. 5-90 (esp. 30-70) wt. % of the moisture content of the feed coal is removed in the predrying zone. The temp. of the recycle slurry (about 825°F) is pref. above that of the mixing vessel (300-500°F), and the residence time of the slurry in the mixing vessel is 5-30 minutes. The quench of the overhead vapour stream in the preheater induces condensation and accumulation of H-donor solvent liquid.(6pp920).</p>

US4189374