

<p>88-037705/06 E36 H08 SHEL 05.08.86 SHELL INT RES MIJ BV *EP -255-748-A 05.08.86-GB-019076 (10.02.88) C01b-03/36 Partial oxidn. of hydrocarbon fuel using concentric burner - arrangement having 3 oxygen channels and 1 fuel channel, giving in situ fine atomisation and long burner lifetime on residue fuels C88-016725 R(BE DE ES FR GB IT NL SE)</p>	<p>E(31-A1) H(4-E4)</p>
<p>Process for partial oxidn. of a hydrocarbon-contg. fuel comprises supplying it and an O<sub>2</sub>-contg. gas through a concentric burner arrangement to a gasification zone, with autothermic prodn. of synthesis gas, and specifically supplying the central channel of the concentric burner arrangement with the O<sub>2</sub>-contg. gas at 21-42 m/sec., the 1st concentric channel (surrounding the central channel) with O<sub>2</sub>-contg. gas at 60-120 m/sec., the 2nd concentric channel with fuel at 3.0-3.8 m/sec., and the 3rd (outer) concentric channel with O<sub>2</sub>-contg. gas at 60-120 m/sec.</p> <p><u>USE/ADVANTAGE</u> The process is useful for liq. fuels, for which in situ fine atomization is obt'd. There is good and rapid mixing of O<sub>2</sub> and fuel, and preignition or flame-flash-back is prevented. (Heavy) residue may be gasified, with economic process</p>	<p>conditions (e.g. reduced moderator gas supply and reduced soot prodn.) for a sufficiently long burner lifetime (longer than 8000 h.).</p> <p><u>STREAM VELOCITIES</u> The above velocities are pref. measured at the outlet of the respective channels.</p> <p><u>OPERATING PRESSURE</u> The pressure is pref. 0.1-12 MPa.</p> <p><u>OXIDANT GAS</u> The O<sub>2</sub>-contg. gas may contain a moderator, pref. steam or CO<sub>2</sub>. Pref. 5-40 wt.% of the O<sub>2</sub>-contg. gas is supplied through the central channel.</p> <p><u>INERT GAS</u> The burner lifetime can be increased by supplying a gas which does not react exothermically (e.g. H<sub>2</sub>O, CO<sub>2</sub> or CH<sub>4</sub>) through a 4th concentric channel, surrounding the 3rd. This can cause the flame to lift and the heat flux to decrease.</p> <p><u>EXAMPLE</u> Tests have been carried out with fuel of s.g. 980-1018 EP-255748-A*</p>

kg/m<sup>3</sup> at 15°C and viscosity at the channel outlet 0.02-0.2 Pa.s, contg. 86.7-87.4 wt.% C and 10.2-10.8 wt.% H, and with typically 252 ppm.V, 82 ppm. Ni and 27 ppm.Fe and 23 wt.% Conradson carbon residue.(4pp1492RKMHDwgNo0/0).  
(E) ISR: No Search Report.

EP-255748-A