

51598 K/22 H09 ITCO-05.10.81
 INT COAL REFINING *AU 8284-657
 05.10.81-US-308639 (14.04.83) C10g-01/06
 Solvent refining of coal - using preheater and two dissolvers in series

H(9 A1)

001

C83-050184 Solvent refining of coal is effected by passing a slurry of finely ground coal in recycle solvent through a preheater and then through 2 dissolvers in series in the presence of an H₂-rich gas at elevated temp. and pressure, the 1st dissolver being operated at a higher temp. than the 2nd.

ADVANTAGES

The use of a 2nd dissolver operating at low temp. increases distillate yields and improves hydrogen incorporation into the recycle solvent without a significant increase in overall H₂ consumption.

DETAILS

The preheater outlet temp. is pref. lower than the outlet temp. of the 1st dissolver. The temp. in the 1st dissolver is pref. at least 840°F and the temp. in the 2nd dissolver is pref. 25°C lower than that in the 1st dissolver.

The 1st dissolver is pref. smaller in cross-sectional flow area than the 2nd and thus has a shorter residence time. The lower temp. in the 2nd dissolver may be achieved by passing the effluent from the 1st dissolver through an intermediate heat exchanger and/or adding cool H₂ to the effluent. The effluent from the 1st dissolver may be passed through a gas separator to remove spent gas before adding the fresh H₂. The effluent from the 2nd dissolver may be passed through at least one more dissolver. (24pp367).

AU8284657