

DERWENT PUBLICATIONS LTD.

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 Liquefaction of coal in successive hydrogenation zones - at increasing temps. to increase conversion and liquid yield

H(9-A1).

and used as the hydrogen-donor solvent after separating gaseous products.

Two liquefaction zones are used, and reaction is in presence of hydrogen-contg. gas. Total dwell time in all zones, except the last, is over 65 mins. The first zone is at 366-388 °C and the last zone at 427-471 °C. Sufficient liquefaction occurs in the first zone to produce at least 10 wt.%, based on the dry solid raw material, of liquids with b.pt. below 538 °C.(32pp195).

Liquefaction of coal in presence of hydrogen-donor solvent comprises passing through a number of reaction zones in series, with an increase in temp. in each zone and total dwell time in all zones, except the last, sufficient to increase the liquid yield above that from a single-stage process.

USES

Conversion of coal to low-boiling hydrocarbon mixts. is provided.

ADVANTAGES

Bituminous, sub-bituminous and brown coals may be processed. Yield of hydrogenated, liquid products boiling at 538 °C is increased. Pretreatment of the coal by stirring in solvent at 260-371 °C to improve dispersion is unnecessary.

PREFERRED PROCESS

A high-boiling liquid fraction is separated from the product of the last zone, hydrogenated in presence of catalyst,

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