

Pyrolysis of Western Canadian coals in a spouted bed.

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Abstract

Coal pyrolysis was studied to det. conditions giving max. liq. yields from some Western Canadian coals. Gas, tar, and char yields were detd. for 4 coals in a 12.8-cm (diam.) reactor. A characteristic temp. for max. tar yield existed for each coal at a fixed feed rate and particle size. A steady increase in tar yield was obsd. as the av. coal particle size decreased from 2.28 to 0.65 mm. Compn. of gas and ultimate analyses of tar and char are presented as functions of operating temp. A simple first-order devolatilization model describes the effects of coal feed rate, reaction time, and temp. on the yield of volatiles, but is insufficient to describe particle-size effects.