86-108109/17 A41 E36 H04 BRPE 18.10.84
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18.10.84-GB-026344 (23.04.86) C01b-03/02

Synthesis gas and hydrocarbon(s) prodn. - in spouting bed reactor using (catalytic) particulate material giving increased unsatd. selectivity with carbon elimination or redn.

C86-046153 E(BE DE FR GB IT NL)

A(1-B2, 1-D13) E(10-J2C3, 31-A1) H(4-E4, 4-E5, 4-F2E)

Process is claimed for the production of synthesis gas and hydrocarbons in which
(a) a satd. hydrocarbon and an oxygen contg. gas having a ratio of hydrocarbon to oxygen of greter than the stoichiometric ratio for complete combustion are introduced together with hydrogen into a bed of particulate material,
(b) the upward flow rate of the gases being sufficiently large to fluidise or to cause a spouting action of the bed material;
(c) the hydrocarbon, oxygen contg. gas and hydrogen being ignited and reacted together; and
(c) the prods. of the reaction being withdrawn.

ADVANTAGE

The injection of steam or water (quenching) reduces the temp. of the prod. gases and stops or reduces further reaction to less useful prods. and/or soot. An alternative method of quenching is the injection of a liqd. satd. hydrocarbon such as propane, butane or gasoline into the hot product gases to increase the content of ligh unsatd. hydrocarbons such as ethylene or acetylene in the prod. gases.

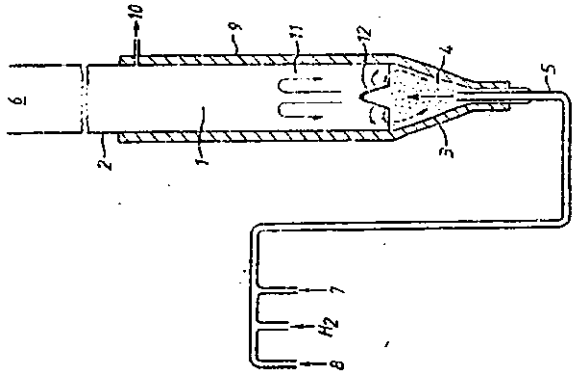
DEVELOPMENT

This application is a development of copending European patent application number 85302279, the apparent development being the use of both the inert particulate matter of the copending application and, in this application, the use of particulate material having catalytic properties, such as alumina, the shape of the particulate material being spherical, cylindrical or amorphous. The claimed particulate material comprises firebrick, quartz, alumina, carborundum, zirconia, silicon carbide, ceramic or forms of carbon.

EXAMPLE

A series of examples show that the use of hydrogen co-feed give increased selectivity to unsaturated C2's and higher hydrocarbons and a decrease or elimination of carbon formation under all the variable tested in the examples. (16pp1684RKMHDwgNo1/1).

(E) ISR: No Search Report



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