

86-162933/26 E36 H09 J01 SHEL 17.12.84  
 SHELL INT RES MIJ BV \*DE 3445-986-A  
 17.12.84-DE-445986 (19.06.86) C01b-03/50 C10k-01/02  
 Sepn. of fly ash from synthesis gas - by fluidising fly ash  
 concentrate with inert gas and separating to give product with  
 low synthesis gas content  
 C86-069706

Process for sepg. a syngas/fly ash mixt. (I) includes  
 contacting the mixt. with inert gas followed by separately  
 withdrawing (a) fly ash and (b) an inert gas/syngas mixt.  
 These steps are pref. preceded by a step in which an  
 original syngas/fly ash mixt. is sepd. by a cyclone and/or  
 filter(s) into (c) the bulk of the syngas and (d) the mixt.  
 (I).

#### USE/ADVANTAGE

Fly ash is removed from syngas, esp. that produced  
 from coal, in a form with syngas content less than 0.01 Nl/  
 kg. The fly ash can then be processed, transported and  
 stored without explosion risk from associated H<sub>2</sub> or health  
 risk from associated CO.

#### PROCESS

The inert gas is pref. N<sub>2</sub> or CO<sub>2</sub>, and it may be con-

E(11-Q2, 31-A1, 31-H3, 31-N5C) H(9-D) J(1-G2)

tacted with the mixt. (I) at 0.5-30 bar, esp. at atmospheric  
 pressure. The preceding sepn. of the mixt. (I) from syngas  
 may be effected at 5-40 bar. Inert gas and (I) are pref.  
 contacted in a separator in which the fly ash is fluidised by  
 the inert gas. The lines for supplying inert gas to this  
 separator and for removing the inert gas/syngas mixt. from  
 it can be provided with devices to prevent ingress of fly  
 ash. Pref. the lines for supplying (I) to this separator and  
 removing the inert gas/syngas mixt. from it join the  
 separator at a high point thereof; and the lines for supply-  
 ing inert gas and removing fly ash join the separator at a  
 low point thereof. The sepn. of the invention may be (dis)  
 continuous or semicontinuous.

#### EMBODIMENT

Syngas from coal gasification at 5-40 bar is sepd. in a  
 cyclone separator and/or filter into syngas for further use  
 and the mixt. (I), which passes to a collection vessel, all  
 at gasification pressure. The collection vessel is discharged,  
 e.g. batchwise, to a letdown vessel, where the pressure of  
 (I) is reduced to atmospheric. (I) is conveyed from the

DE3445986-A+

letdown vessel by a carrier gas to a separator, in which the fly ash component is fluidised by a stream of inert gas, and from which streams of fly ash and inert gas/syngas are withdrawn. (14pp1492RKMHDwgNo0/1)