

HYDROCARBON ALKYLATION PROCESS**ABSTRACT OF THE DISCLOSURE**

A hydrocarbon stream is cracked to produce a hot gaseous stream which is compressed and cooled to condense almost all of the hydrocarbons contained in the stream. A noncondensed stream remaining after the condensation step, comprised predominantly of hydrogen and C₁ to C₃ hydrocarbons, is subjected to pressure swing adsorption or temperature swing adsorption at an adsorption temperature of about 0 to about 250° C in a bed of adsorbent which selectively adsorbs ethene and propene, thereby adsorbing substantially all of the ethene and propene from the gas stream. The ethene and/or propene is recovered upon bed regeneration. Higher alkenes are separated from alkanes by various methods.

Fig. 1