

ABSTRACT

PROCESS FOR CONVERTING GASEOUS ALKANES TO OLEFINS AND LIQUID HYDROCARBONS

A process for converting gaseous alkanes to olefins and liquid hydrocarbons wherein a gaseous feed containing alkanes is reacted with a dry bromine vapor to form alkyl bromides and hydrobromic acid vapor. The mixture of alkyl bromides and hydrobromic acid are then reacted over a synthetic crystalline alumino-silicate catalyst, such as an X or Y type zeolite, at a temperature of from about 250° C. to about 500° C. so as to form olefins, higher molecular weight hydrocarbons and hydrobromic acid vapor. Various methods are disclosed to remove the hydrobromic acid vapor from the higher molecular weight hydrocarbons and to generate bromine from the hydrobromic acid for use in the process.

Figure 2