

ABSTRACT

COMBINED HEAVY REFORMATE DEALKYLATION-TRANSALKYLATION PROCESS FOR MAXIMIZING XYLENES PRODUCTION

A method of forming mixed xylenes from a heavy reformate using a dealkylation-transalkylation system includes the step of introducing both a heavy reformate containing methyl ethyl benzenes and tri-methyl benzenes and that is sufficiently free of toluene and a hydrogen-containing material into the dealkylation stage such that the heavy reformate and the hydrogen -containing material intermingle and contact the hydrodealkylation catalyst. The dealkylation-transalkylation system includes dealkylation, non-aromatic product gas separations and transalkylation stages. Toluene forms from the reaction of methyl ethyl benzenes and hydrogen in the presence of the hydrodealkylation catalyst. The method also includes the step of introducing a dealkylated heavy reformate into the transalkylation stage such that the dealkylated heavy reformate contacts a transalkylation catalyst, forming a transalkylation stage product mixture includes mixed xylenes.

FIG. 1