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(54) Title: PROCESS FOR PRODUCING PROPYLENE AND HEXENE FROM C₄ OLEFIN STREAMS

(57) Abstract: A C₃ to C₆ hydrogen cut from a cracking unit is processed for the conversion of olefins to propylene and hexene via autometathesis. The autometathesis of a mixed normal butenes feed in the presence of a metathesis catalyst operates without any ethylene in the feed mix to the metathesis reactor. Some fraction of the 2-butene feed may be isomerized to 1-butene and the 1-butene formed plus the 1-butene in the feed react rapidly with the 2-butene to form propylene and 2-pentene. The feed to the reactor also includes the recycle of the 2-pentene formed in the reactor with unreacted butenes to simultaneously form additional propylene and hexene. In one embodiment, some or all of the 3-hexene formed in the reaction is isomerized to 1-hexene. In another embodiment, some portion of the 3-hexene produced in the main metathesis reaction is reacted with ethylene to produce 1-butene without the need for superfractionation. In another embodiment, the 3-hexene product is hydrogenated and recycled back to the cracking heaters.



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