

Abstract

Disclosed is a catalytic conversion process and system for producing gasoline and propylene, the process comprising: 1) subjecting a feedstock oil to a first catalytic conversion reaction in a first catalytic conversion reaction device to obtain a first reaction product; 2) separating the first reaction product to obtain a propylene fraction, a gasoline fraction and a fraction comprising C₄ olefin; 3) carrying out an oligomerization reaction on the fraction comprising C₄ olefin in an oligomerization reactor to obtain an oligomerization product comprising C₁₂ olefin, and optionally separating the oligomerization product to obtain a fraction comprising C₁₂ olefin; 4) recycling the C₁₂ olefin-containing oligomerization product or fraction to the first catalytic conversion reaction device, and/or sending the C₁₂ olefin-containing oligomerization product or fraction to a second catalytic conversion reaction device for a second catalytic conversion reaction to obtain a second reaction product comprising propylene. The process and system provide high propylene and gasoline yields.

Fig. 1