

Separations System for Recovering Hydrocarbons from Synthesis of Polyethylene Polymers

Abstract

The present disclosure provides for a separations system for separating ethylene, 2-methylbutane and at least one unsubstituted (C_6 - C_{12}) hydrocarbon in a multi-component condensate mixture. The separations system includes a feed conduit in fluid communication with a source of the multi-component condensate mixture, a stripper column in fluid communication with the feed conduit, where the stripper column separates the multi-component condensate mixture into a heavies component mixture with at least one unsubstituted (C_6 - C_{12}) hydrocarbon, and a top mixture having a medium component(s) that include at least the 2-methylbutane and a light component(s) that include at least the ethylene. The separations system further includes a flash drum that separates the top mixture into the medium component(s) and the light component(s). The separations system does not include a distillation column disposed between the source of the multi-component condensate mixture and the flash drum.

[Fig. 1]