CLAIMS

1. A process for oligomerizing one or more hydrocarbons, comprising:

A) providing a feed comprising one or more C3 and C4 hydrocarbons to a separation zone;

B) separating at least a portion of C3 olefins;

C) sending the C3 olefins to a first oligomerization zone for producing one or more C9 hydrocarbons; and

D) returning at least a portion of an effluent from the first oligomerization zone to the separation zone.

2. The process according to claim 1, wherein the separation zone comprises a divided wall column.

3. The process according to claim 2, wherein the divided wall column provides a first stream comprising a part of the C3 olefins and a second stream comprising another part of the C3 olefins to the first oligomerization zone.

4. The process according to one of the proceeding claims, wherein the first stream comprises at least 40%, by weight, of the C3 olefins based on the weight of the first stream.

5. The process according to one of the proceeding claims, wherein the second stream comprises no more than 10%, by weight, of the C3 olefins based on the weight of the second stream.

6. The process according to one of the proceeding claims, wherein at least a portion of the second stream is provided to the first oligomerization zone as a quench.

7. The process according to one of the proceeding claims, further comprising withdrawing a side-stream comprising one or more C4 olefins.

8. The process according to one of the proceeding claims, further comprising withdrawing a bottom stream comprising one or more C4 olefins.

9. The process according to claim 1, 2, 3, 4, 5, 6, or 7, further comprising withdrawing a bottom stream comprising one or more $C9^+$ olefins.

10. The process according to claim 8, further comprising sending at least a portion of the bottom stream to a second separation zone.

CLAIMS

1. A process for oligomerizing one or more hydrocarbons, comprising:

A) providing a feed comprising one or more C3 and C4 hydrocarbons to a separation zone;

B) separating at least a portion of C3 olefins;

C) sending the C3 olefins to a first oligomerization zone for producing one or more C9 hydrocarbons; and

D) returning at least a portion of an effluent from the first oligomerization zone to the separation zone.

2. The process according to claim 1, wherein the separation zone comprises a divided wall column.

3. The process according to claim 2, wherein the divided wall column provides a first stream comprising a part of the C3 olefins and a second stream comprising another part of the C3 olefins to the first oligomerization zone.

4. The process according to one of the proceeding claims, wherein the first stream comprises at least 40%, by weight, of the C3 olefins based on the weight of the first stream.