

HOMEWORK #6
CHE 321

QUESTION

A depropanizer is used to make separation of paraffins. Using the conditions below, make a process flow diagram using Chemcad to achieve the separation required.

Feed1: C2, C3, nC4, nC5, nC6 (0.03, 0.2, 0.37, 0.35 0.05)

Conditions: T= 225 F, P=250 psia, F= 1000lbmoles/hr.

Thermo Package: SRK

Unit Operation: Distillation column

Condenser: Partial, P=248 psia, RR=5.0, vapor rate=711, $\Delta P=0$

Reboiler: P= 252psia, $\Delta P=0$, Butane bottom recovery=36.5

Use the Shortcut column to find:

- A. the number of stages for separation
- B. the heat loads on the condenser and reboiler

Change the Reflux Ratio from 5 to 18 by steps of 2, then plot the number of stages that you get versus Reflux Ratio. What can you deduce from this?