精馏板式塔-作图法-第5次 返回

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一.简答题 (共1题,100.0分)

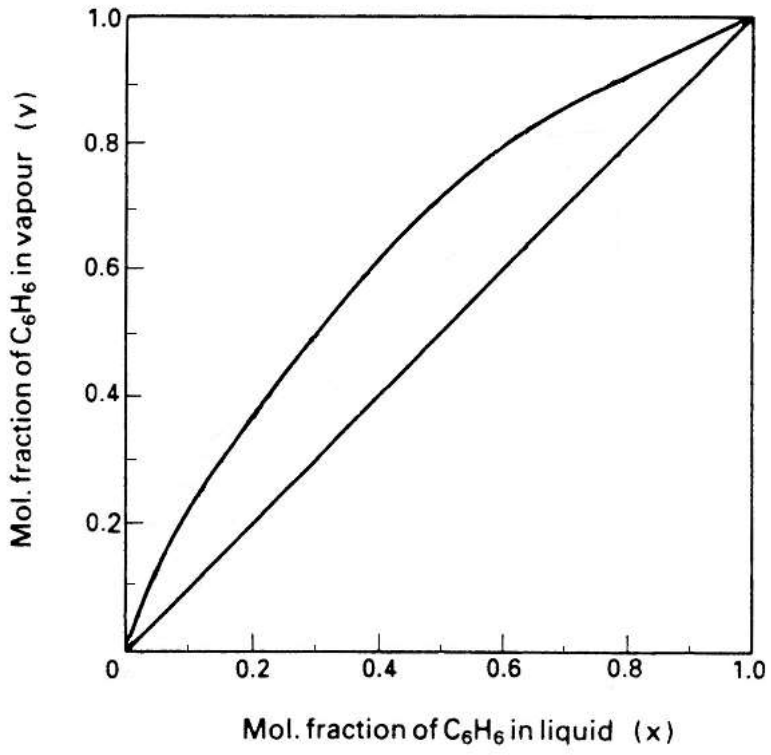
1 A distillation coloumn is used to separate a binary mixture. The top of the tower is equipped with a full condenser and with bubble point reflux. The bottom of the tower is heated by indirect steam, and the feed into the tower is 50kmol/h with a light component content of 0.25 (molar fraction). The bubble point feed is used, and the overhead distillation rate is 0.2 (molar flow rate ratio). The light component content at the overhead of the product would be 0.98 (molar fraction). The y~x phase equilibrium relationship of the system is shown as the figure. The actual reflux ratio for operation is 4.9. Try to find:

(1) Quantity of tower bottom product: W and concentration Xw (10 points)

(2) Please write the equation for the operating line of the rectification section (20 points)

(3) Please write the equation for the operating line of the stripping section (30 points)

(4) Draw on the figure to show how many theoretical plates are there in the rectification and stripping sections? (40 points)



Students who want to use "TD1 ELEVES.xlsx" can use next data

x	y
0	0

8.8	21.2
20	37
30	50
39.7	61.8
48.9	71
59.2	78.9
70	85.3
80.3	91.4
90.3	95.7
95	97.9
100	100

我的答案：