CHE213 Simulation 5

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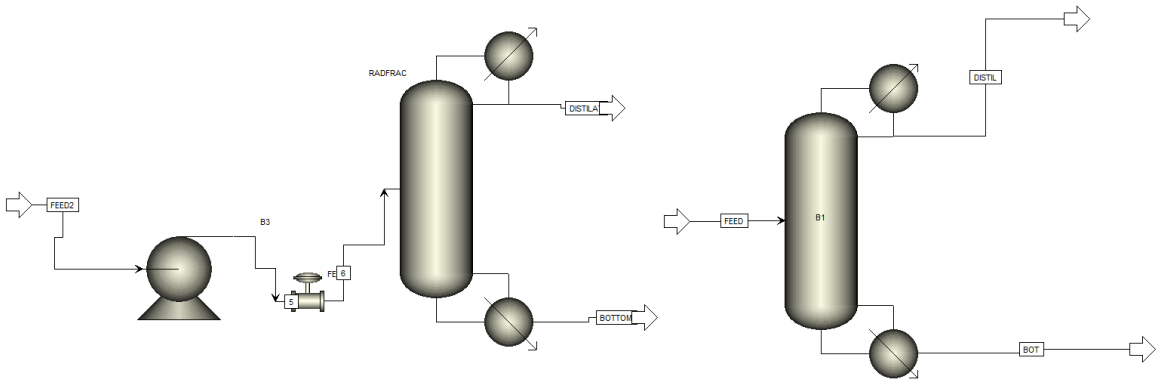
220227

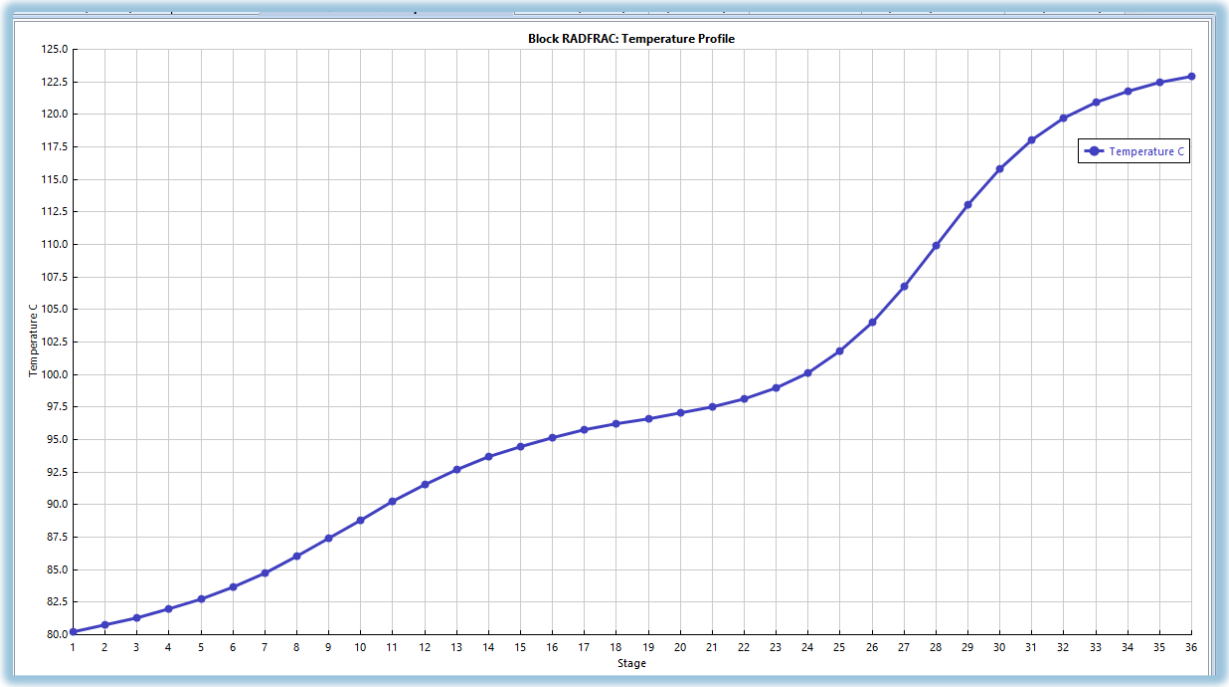


Data:

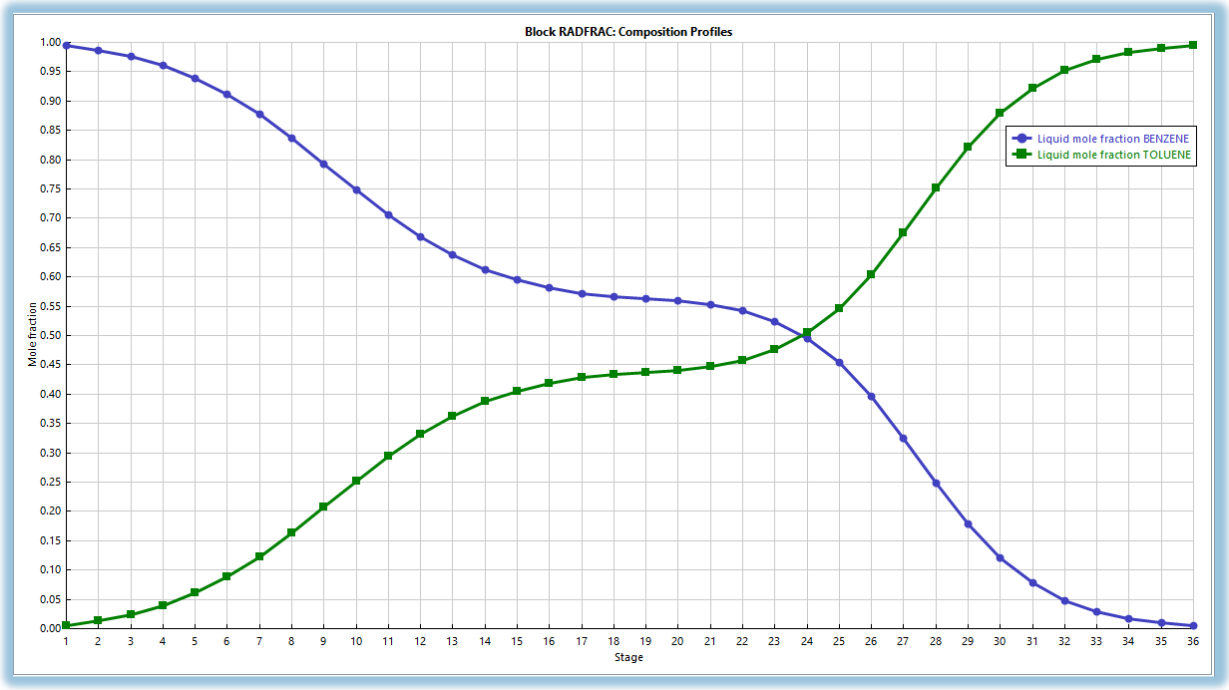
Temperature stage wise

Stage	Temp(°C)
1	80.25056
2	80.74271
3	81.30441
4	81.96105
5	82.74105
6	83.67081
7	84.76578
8	86.01913
9	87.39326
10	88.82143
11	90.22263
12	91.52366
13	92.67648
14	93.66343
15	94.49137
16	95.18146
17	95.75987
18	96.25195
19	96.62014
20	97.03348
21	97.52506
22	98.1486
23	98.98694
24	100.1565
25	101.7947

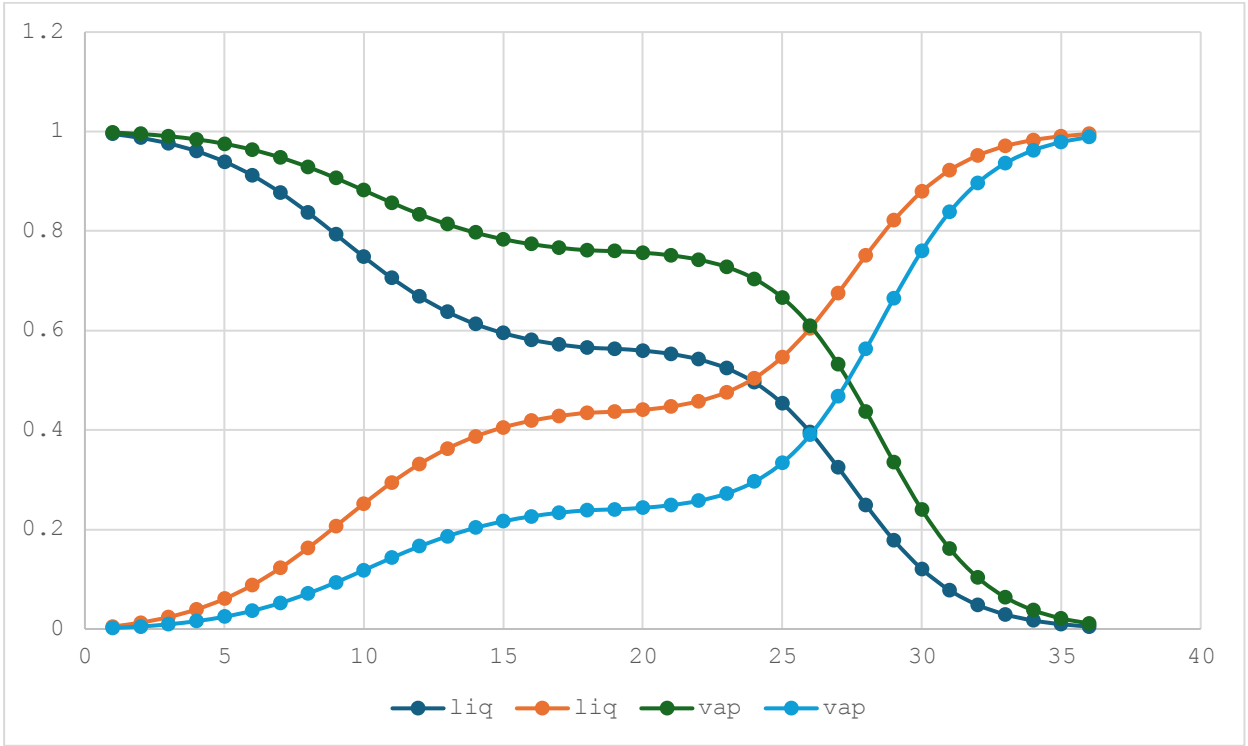
26	104.0098
27	106.7902
28	109.9281
29	113.0592
30	115.8303
31	118.0516
32	119.7158
33	120.9227
34	121.7978
35	122.4496
36	122.9578



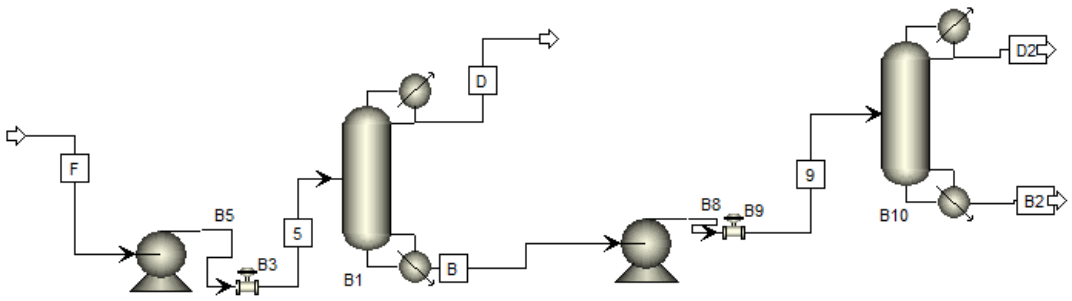
Composition Liquid phase



Composition Vapor phase

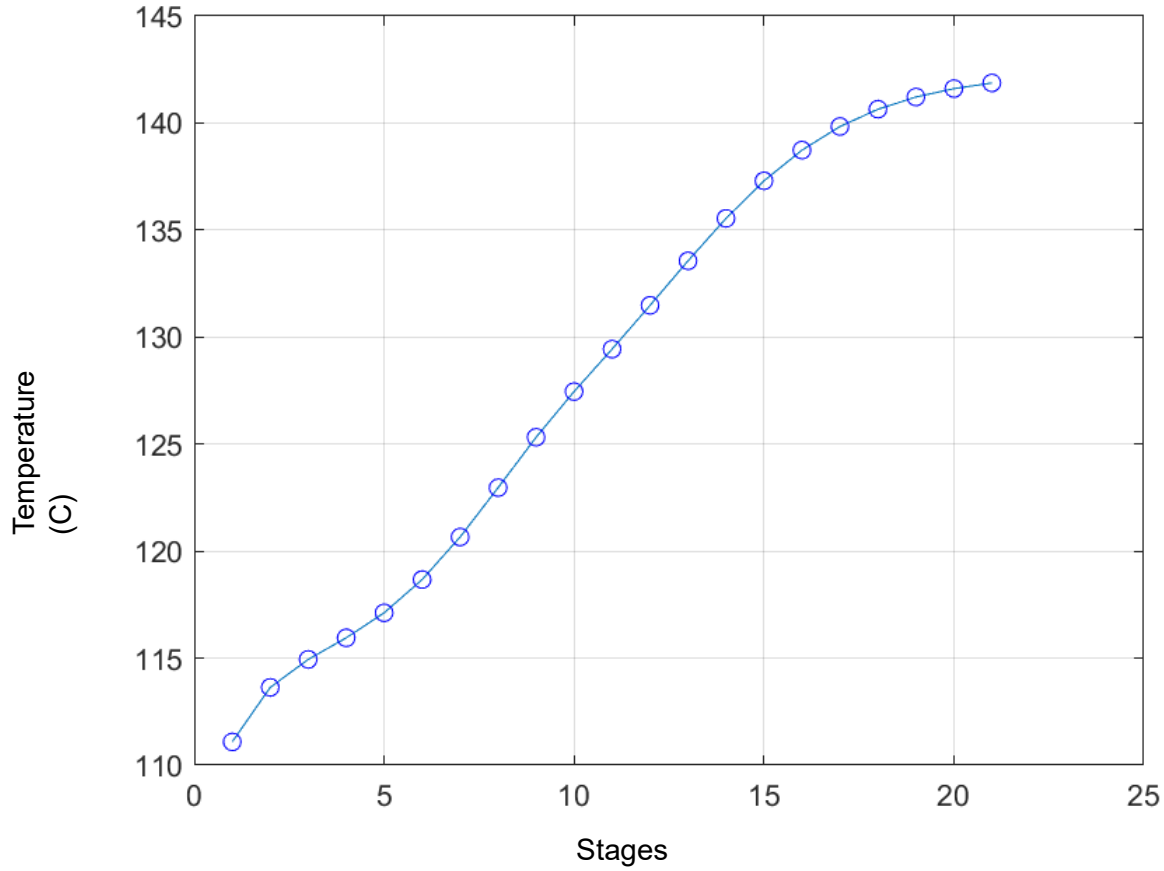


Q2

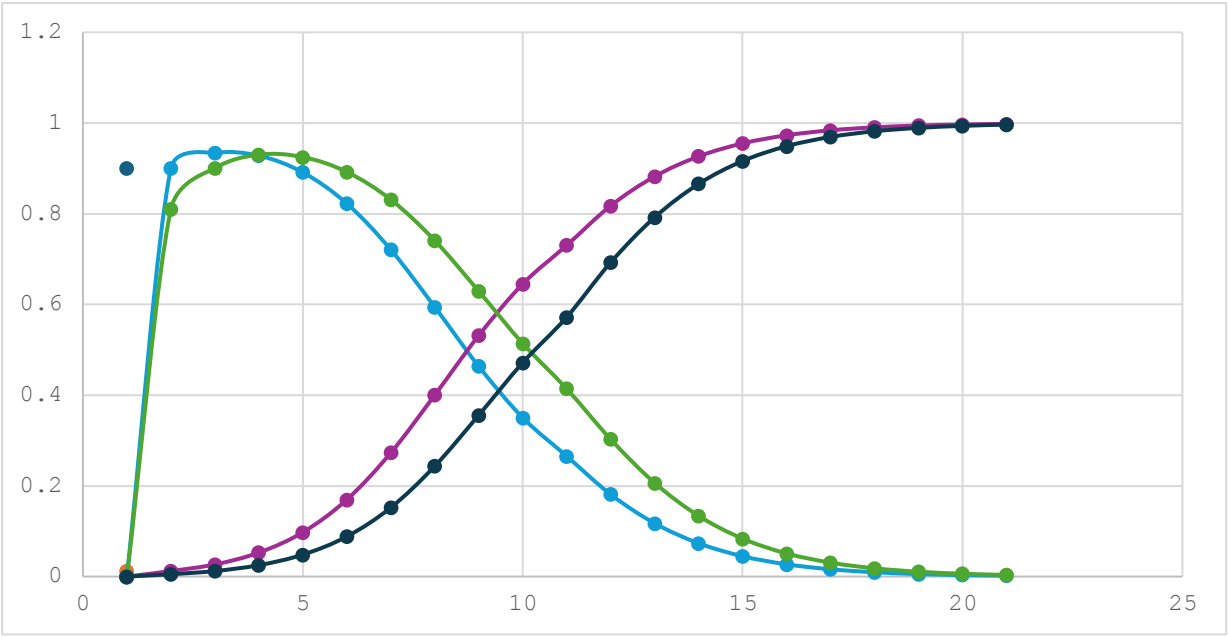


➔ **Not actual diagram as in my aspen file, taken as reference**

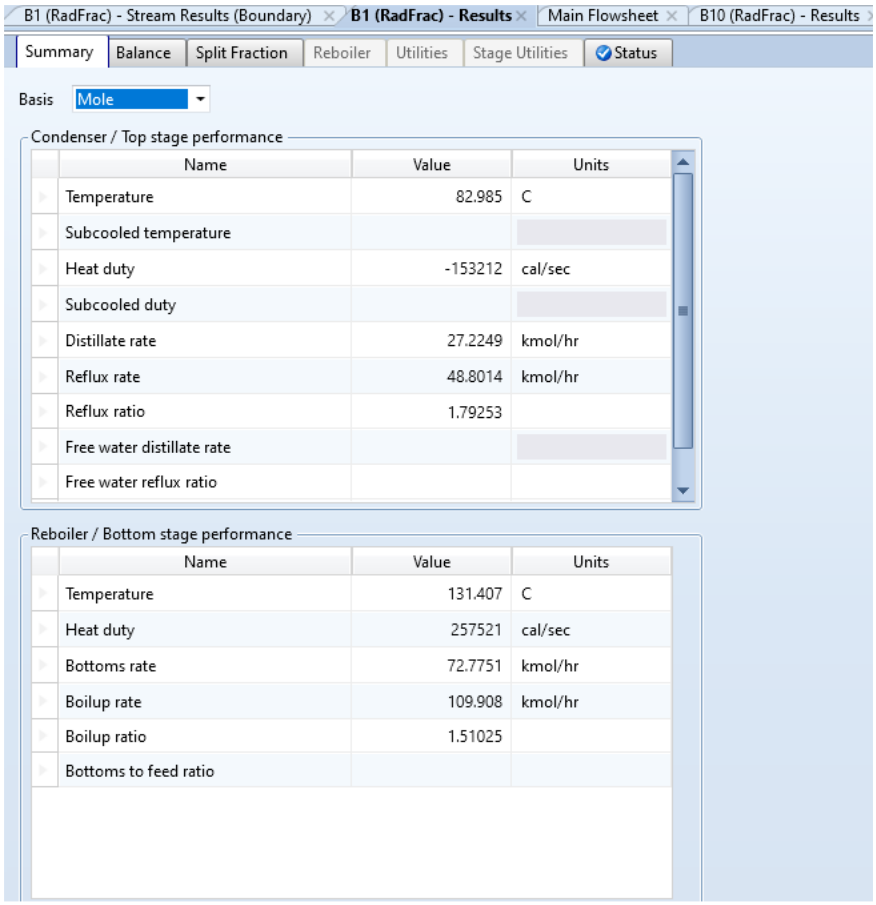
Stage	Temp(°C)
1	111.087
2	113.6347
3	114.9411
4	115.9495
5	117.1192
6	118.6714
7	120.6601
8	122.9636
9	125.3192
10	127.4539
11	129.4363
12	131.4804
13	133.5607
14	135.5469
15	137.2996
16	138.7347
17	139.8378
18	140.6453
19	141.2153
20	141.6074
21	141.8725



Composition Liquid/Vapor phase



B1



Obtained mole fraction for Benzene is 0.995

Condenser:

Temperature = 82.985 C

Heat duty = -153212 cal/sec

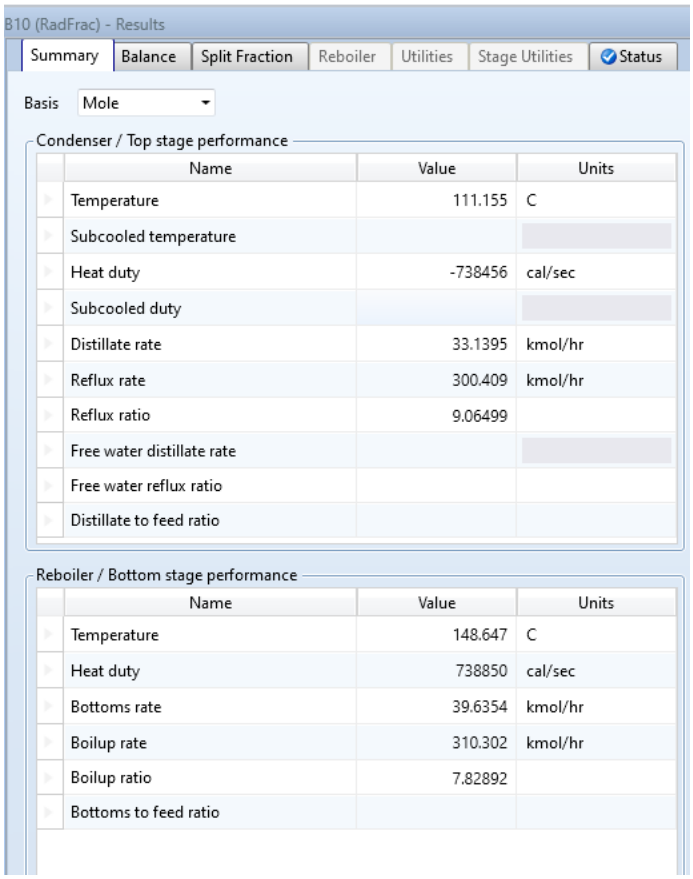
Reflux ratio = 1.79253

Reboiler:

Temperature = 131.407 C

Heat duty = 257521 cal/sec

B2



Obtained mole fraction for Toluene is 0.9

Obtained mole fraction for Benzene is 0.91

Condenser:

Temperature = 111.155 C

Heat duty = -738456 cal/sec

Reflux ratio = 9.06499

Reboiler:

Temperature = 148.647 C

Heat duty = 738850 cal/sec