EXTRACTIVE DISTILLATION OF ACETONE AND WATER BY USING MONOCHLOROBENZENE AS A SOLVENT

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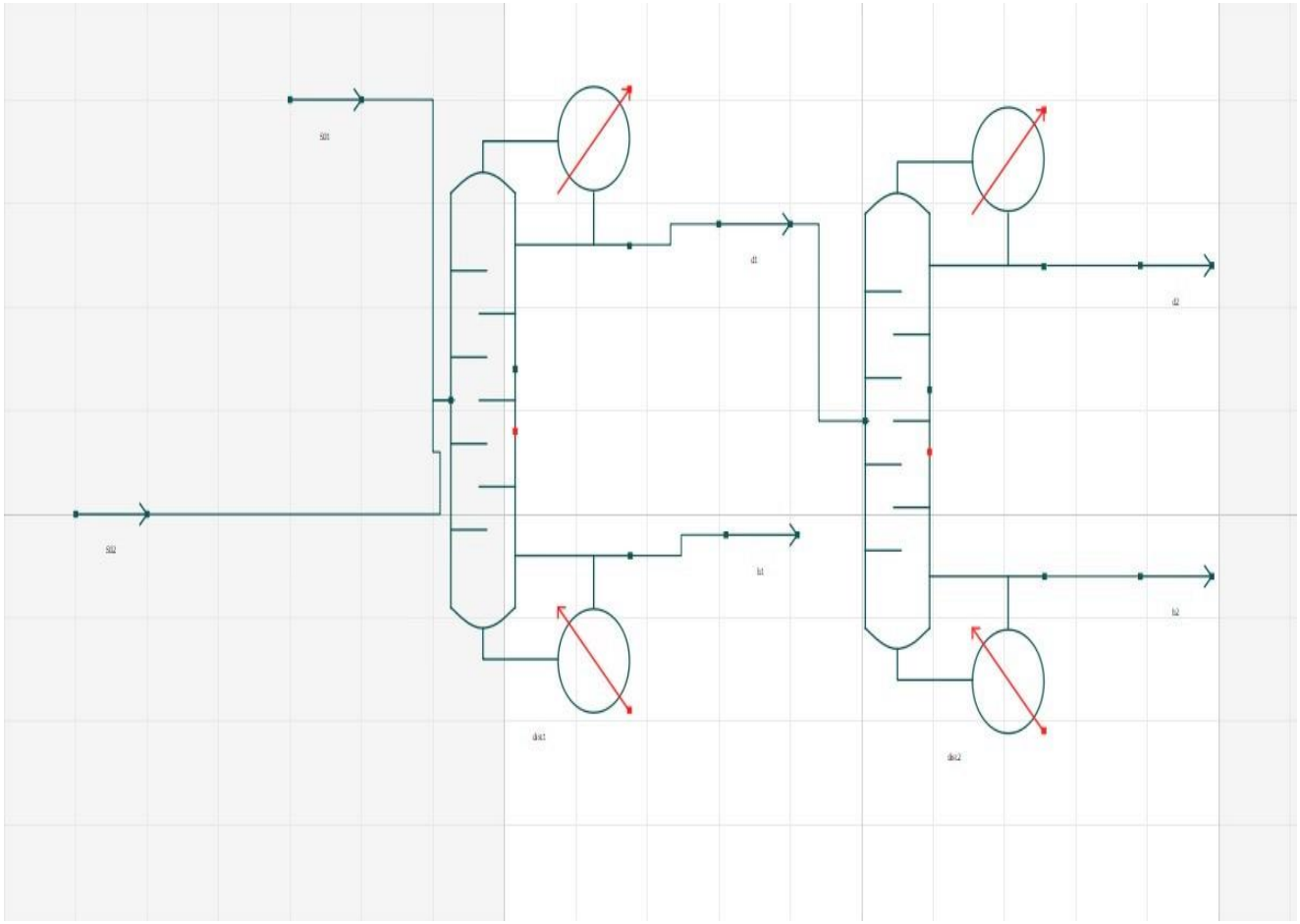
Flowsheet Description:

Here the system used is monochlorobenzene, Acetone and water. The thermodynamic package used in this simulation is Raoult's law. In this simulation we use two distillation columns as the name suggest there are two stages in which 1st is of solvent while 2nd is of feed. Both are entering at dist 1. From top of dist 1 the mixer is sent to dist 2 where from top Acetone is obtained. In dist 1 there are 5 stages in which feed and solvent are fed at 2 and 3 stage while in dist 2 there are 5 stages in which feed is fed at 2 stage. Both the distillation columns are operated at same pressure.

Flowsheet:



Results:

Result are shown below as:

Stream	Feed	Solvent	Distillate 1	Distillate 2	Bottom 1	Bottom 2	Unit
Temperature	298.15	298.15	333.265	328.023	352.082	338.763	**K**
Pressure	101325	101325	101325	101325	101325	101325	**Pa**
Molar Fraction [1,1]	8.6e-10	1	0.0074	0.00014	0.350064	0.472389	
Molar Fraction [1,2]	0.7067	0	0.8476	0.97	0.4	0.73112	
Molar Fraction [1,3]	0.2933	0	0.156257	0.02	0.249936	0.00509	

REFERENCES:

Mass Transfer and Separation Processes by Binay K. Dutta, PHI Edition