

Project - Design and control of Acetonitrile/ N -propanol separation system via Extractive Distillation using Dimethyl Sulfoxide as Entrainer

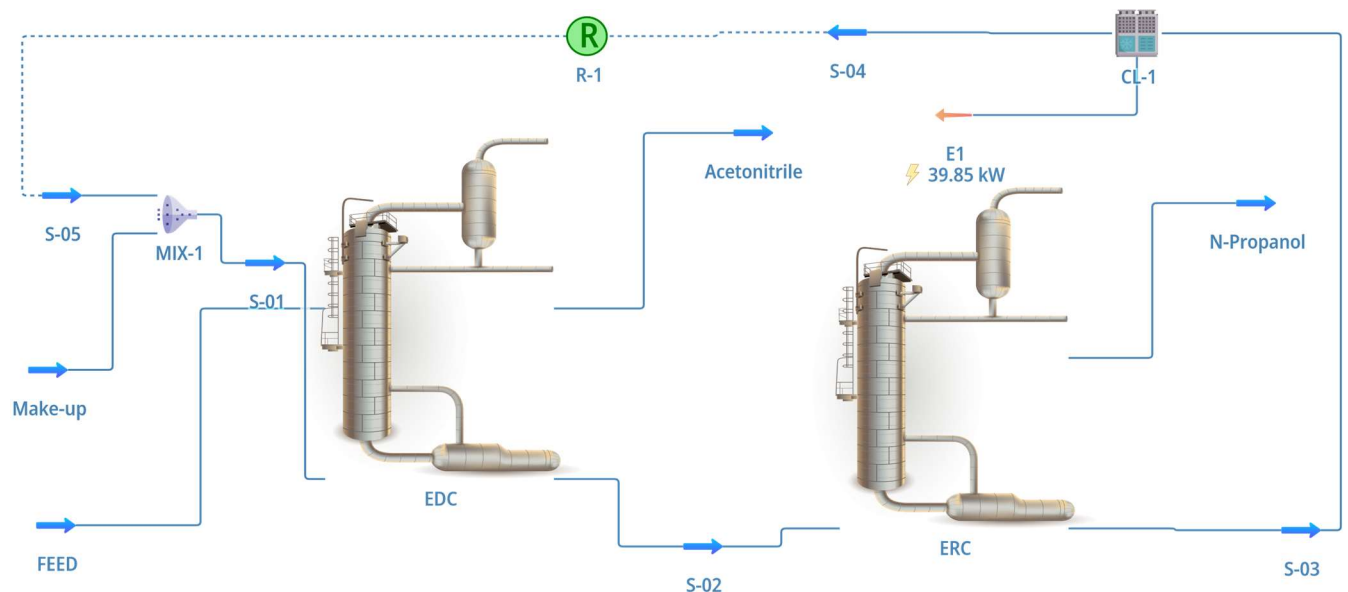
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Background & Description:

Acetonitrile and n-propanol are widely applied in chemical industries which can be used as mobile phase in liquid chromatography and electrolytes as mixture of acetonitrile/N-propanol and water in fine chemical industry, which may cause environmental pollution if discharged directly. Therefore, the separation and recycle of these two chemicals are necessary. Typically, distillation is accepted as an efficient method for separating and purifying the mixture.

Thermodynamic Model used – NRTL



Master Table				
Object		N-PROPANOL	ACETONITRILE	
Molar Flow		3.42798	18.7544	Kmol/hr
Molar Fraction (Mixture) / Acetonitrile		0.00919477	0.972494	
Molar Fraction (Mixture) / N-propanol		0.990805	0.0275063	
Molar Fraction (Mixture) / Dimethyl sulfoxide		5.99731E-09	1.09959E-08	