

## **ABSTRACT**

Separation of Water and Acetone in the presence of Solvent called Monochlorobenzene by Extraction process. In this process we take Water and Acetone as feed material and Monochlorobenzene as a Solvent. so in Feed carrier there is a mixture of Water and Acetone and in Solvent stream Monochlorobenzene is there. After that the mixing is occurred. Then the Feed stream is passed to Separator, where the Extract and Raffinate phases are get separated. Now we have to further purify the Raffinate product. So the Raffinate phase has to sent into Shortcut column, where the Top and Bottom product are get separated. In the Top product light phase product will obtained ie Water while in Bottom product heavy phase product is obtained ie Acetone.

The Energy stream also Recycle into the Shortcut column by passing the outlet stream back to the column with the help of Energy Recycle.

## **EXPLANATION OF FLOWSHEET**

In the flowsheet diagram Feed stream content mixture of Acetone, Water and Monochlorobenzene in the proportion of Acetone 25%, Water 70% and Monochlorobenzene 5%. while that for Solvent containing Acetone 30% and Monochlorobenzene 70%. then Mixer mix these two solution. After mixing in Mixer the feed stream is fed into Separator column where Extract and Raffinate get separated. Then we have to purify the Raffinate phase. So the concentration of Raffinate phase is fed to the Shortcut column, where Top and Bottom product is separated after separation the Acetone get Extracted from the Bottom product.