

Methanol Water Distillation

The first flowsheet is case of methanol-water distillation with a preheater. A material stream containing 36% methanol (by mole) and 64% water at 300 K and 1 atm pressure is sent to a preheater at 60 mol/s. The feed is pre-heated to 325 K before entering the distillation column. The feed is sent to the distillation column at the 4th stage. The condenser and reboiler pressure are maintained at 1 atm. Reflux ratio of 2 is defined as top specification and product molar flowrate of 36.74 mol/s is defined as bottom specification. Methanol with 90% purity is obtained from the top at a temperature of 340 K which is then further cooled to 298 K. Water with 97% purity is obtained from the bottom.