

Recovery of Acetonitrile from Aqueous Solutions by Extractive Distillation: The Effect of Entrainer

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Abstract : The aim of this work was to apply extractive distillation for acetonitrile removal from water solutions, to validate thermodynamic criterion based on excess Gibbs energy to entrainer selection process for acetonitrile - water mixture separation and show its potential efficiency at isothermal conditions as well as at isobaric (conditions of real distillation process), to simulate and analyze an extractive distillation process with chosen entrainers: optimize amount of trays and feeds, entrainer/original mixture and reflux ratios. Equimolar composition of the feed stream was chosen for the process, comparison of the energy consumptions was carried out. Glycerol was suggested as the most energetically and ecologically suitable entrainer.

Keywords : acetonitrile, entrainer, extractive distillation, water

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