

Validity Evaluation of Advance Distillation Column Design for Efficient Waste Thinner Recovery

김종환, 차니아고 유스, 그레고리 리오누그로호 할비안토,
리즈카, 알리 와이드, 이문용†
영남대학교

Photoresistor thinner generates waste thinner when unreacted photoresistor is removed from product In TFT-LCD and IC manufacturing processes. Target constituents of waste thinner (Propylene Glycol Monomethyl Ether and Propylene Glycol Monomethyl Ether Acetate, referred to as PGME and PGMEA) have been retrieved by applying distillation. However, the azeotropic phenomenon occurs in the mixture of waste thinner and normal distillation sequence cannot be applied to recover target product. A specific method was applied to recover PGME and PGMEA from mixture with VLE experimental data was used for reliable simulation. Several distillation sequences were established using operation condition constrains, advanced distillation column is implemented to achieve further objective of energy improvement with high benefit because of lower energy efficiency of conventional distillation column. This work was also supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2015R1D1A3A01015621).