

Feasible Design of Enhanced Distillation Process for Waste Photoresist Solvents Recovery

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In waste thinners in display and information material manufacturing industries 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. 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 study was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2015R1D1A3A01015621). This work was also supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).