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Pollution Prevention in Butyl Acetate Process Plant using WAR algorithm

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Abstract:This original research work objective is pollution prevention in butylacetate process plant using waste reduction algorithm (WAR). Butyl acetate process plant is designed using ASPEN PLUS V8.8. Potential environmental impacts (PEI) scores of all chemicals in the process are calculated using WAR algorithm. To minimize the pollution, process modification suggested is arranging recycle stream in the process. PEIs of modified process and the base case process were compared. Modified process was identified as the efficient process in minimizing the pollution. Economical and energy comparisons are also made for modified and base case processes. Utilities are reduced by 19% of the base process. Finally a plantwide control structure is developed to control the plant. From tuning tests it is identified that the developed control structure is good in controlling the process.

Key words:Plantwide control, Potential environmental impacts, WAR algorithm.

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