In this coursework we study the process of chemical decomposition of polyethyleneterephthalate. The flowsheet of chemical decomposition of polyethyleneterephthalate. Since the circuit is closed, the structural analysis was carried out. This flowsheet was simulated in the HYSYS program. As a result of the simulation of flowsheet the material and energy balances were received. Process productivity is 31.5 kg/hour. This coursework relates to systems analysis and chemical engineering: the studying the process of chemical decomposition of polyethyleneterephthalate.