Development pneumatic vacuum evaporators concentrating the reaction mixture

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The investigation is related to workflows in a vacuum concentrating unit for chemical and biomolecular samples. The influence of the work gas flow direction towards to the interface on the evaporation process is investigated. Scientific, technical and patent literature is reviewed to determine current highly effective concentration patterns. System design is chosen and justified. Experimental model of the reaction mixtures pneumatic vacuum concentrator has been developed and tested. Volume dependence of the liquid on time at different solution temperatures, working gas speeds and pressures are determined. Comparison of the experimental data with the results obtained by mathematical model solution is presented. Comparison with the data published by manufacturers of similar units is provided too. The problems of workflows mathematical modeling in a pneumatic vacuum evaporation plant are reviewed.

Keywords: *concentration, evaporation, microvolumes substance, mathematical model, mixture, workflows.*

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