ABSTRACT

COMPUTER MODELING, AUTOMATION, ALGERATION OF BENZOL, ISOPROPYLBENZOL, MATERIAL BALANCE, TUBERCULAR REACTOR, MODELING, CONTROL AND REGULATION

Explanatory note 77 p., 19 figures, 29 tables, 4 annexes, 17 sources.

The subject of the project is computer modeling and automation of the process of getting isopropylbenzene.

The purpose of the project is to study the process of alkylation of benzene with propylene with admixtures of propane and further production of isopropylbenzene.

The project substantiates the norms of technological regimes, provides a technological scheme for the production of isopropylbenzene. Computer calculation of material balances in the ChemCad 7 program is made.

The mathematical model of the tubular reactor, reaction kinetics and design parameters of the reactor in the integrated MS Visual Studio 2015 environment in C # was constructed and calculated.

The scheme of process automation and technical means for it are developed. A total of 27 contours are conducted, among which there are contours of control and regulation of flow, temperature and pressure.

Techno-economic indicators of efficiency of automation are calculated.

The main risk factors of isopropylbenzene production and ways of minimizing their influence are investigated.