

Annotation

Coursework on the topic “production line of casein with the development of freeze dryer” made by 5th year student, Prokhorov Y. of group BI-51m including: an explanatory note, consisting of 60 pages, 7 images, 15 references, 1 sheet of drawing of apparatus- technological line of A1 format.

Calculations of freeze dryer are conducted to determine parameters such as freeze-drying process time, the amount of water removed from the material and that used for this heat will provide the product at the end of the process with the necessary quality indicators; selected amount of moisture in the heat and the heat transfer coefficient required for condensation and crystallization of moisture removed from the material in one cycle; the surface area of heat transfer and cooling costs in water coolers for compressed gaseous coolant to ensure desired, the process for freeze drying, coolant temperature.

Structural calculations are made to determine the main dimensions of the drying chamber device, its parts and components. Reliability of apparatus is confirmed by strength and stability calculations.

Also, in this course work questions the installation, testing and operation of equipment in production.

The peculiarity of this course work is that in the calculation was selected construction materials that take into account the pressure of the working environment in the vacuum system and conditions of freeze drying. From an economic point of view for other items selected cheaper steel, which corresponds to the process and requirements.

Keywords: casein, sublimation, condensation, coolant, desublimer.