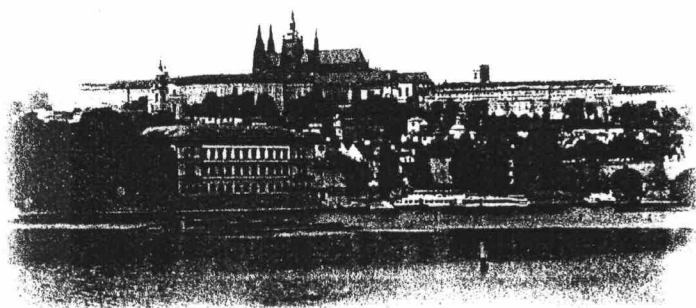


BOOK OF ABSTRACTS

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USING Palygorskite FOR PURIFYING THE AQUEOUS-ALCOHOLIC SOLUTIONS

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The aqueous-alcoholic solutions are widely used in liquor-vodka branch. In the industry, one tries to issue qualitative vodka production. It can be achieved through the additional clearing of solutions by palygorskite, which is referred to clay minerals, and the site of which is being developed in the Ukraine. The cost price of this mineral as compared to with synthetic adsorbents is low and at the same time it has rather good adsorptive capacity concerning the impurities of ethanol, the amount of which exceeds normative parameters because of unqualitative feed stock or deviations from technological measures for the process of receiving alcohol.

The authors studied the purification processes of aqueous-alcoholic solutions by palygorskite under normal conditions. To improve the technological process of purifying aqueous-alcoholic solutions the vacuum was used, and this promoted the deaerating the surface of sorbent. The vacuum dislodges a thermodynamic equilibrium to lower temperatures, and that is the reason of slowing down chemical processes for additional formation of impurities.

The results of studies on purifying aqueous-alcoholic solutions by palygorskite with the vacuum in 0.5 atm have shown that the impurity level of ethanol is considerably moderated in the furnished solution. Namely aldehydes on 30 %, ethers on 20 %, higher alcohols on 60 % compared to the initial amounts. To estimate the quality of aqueous-alcoholic solutions, the experts conducted their tasting, and the results of the latter appeared unanimous and rather high.

Palygorskite is used in many branches of national economy, but for purifying aqueous-alcoholic solutions earlier in Ukraine it was not in use. Therefore the studies on ecological safety of the given sorbent for its usage in the food industry appeared to be very important. In this connection mass spectrometry researches were conducted. The results have confirmed complete ecological safety of sorbent. It does not bring any additional impurities and by that does not mar the qualitative indexes of alcoholic solutions.

To estimate the advantages of palygorskite, the studies on recovering its adsorptive properties by reactivation were conducted. The sorbent was exposed to reactivations with the help of steam or CO₂. The results have shown minor difference between reactivation by steam and carbon dioxide. The preference was given to the process of steam reactivation.

Palygorskite is an effective sorbent for the ethanol impurities. The sorbent is ecologically safe, and the effective method of reactivation of the structure of the adsorbent in surface layer of palygorskite is offered.

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