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PROBLEMS OF PLASTICATION OF POLYVINYLINESETATE MADE FROM VINILATECETATE BASED ON EMULSION POLYMERATION

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ABSTRACT

In this research work, the stages of commercialization of polyvinylacetate obtained by the same emulsion method, in particular, the process of its plasticization using dibutyl phthalate were studied. The viscosity of polyvinylacetate obtained by the emulsion method was carried out in a glass measuring the conditional viscosity, the flow rate was determined 137 + 140 + 143/3 = 140 sec. The viscosity of the polyvinylacetate dispersion in the form of a commodity was carried out in a glass measuring the conditional viscosity, the flow rate was determined. 214 + 228 + 222/3 = 221.3 sec.

KEYWORDS: *Polyvinylacetate Dispersion, Dibutylphthalate Dispersion, Hydroxyethylcellulose, The Conditional Viscosity.*

INTRODUCTION

Despite the fact that the chemical industry of Uzbekistan does not produce vinyl acetate and various polymers and copolymers derived from it, the use of them is growing rapidly. Polyvinyl acetate obtained in solution and emulsion method is expanding not only in construction, light and food industries, printing, but also in the field of its use. Polyvinyl acetate dispersion is used in the bonding of paper, cardboard, wood, leather goods, as well as a binder in paints and building materials industry.

Polyvinyl acetate silicate adheres highly to glass, leather, fabrics, and therefore its solutions are used to prepare adhesives (e.g., polyvinyl acetate dispersion) and varnishes. Aqueous dispersions of polyvinyl acetate are used as paints and varnishes that do not require organic solvents. These include, for example, the growing use of polyvinyl acetate in the production of new types of sculptures, adhesives with excellent properties, new unique decorative products for facades and interiors of buildings.

In most cases, emulsion-derived polyvinyl acetate is used. Of course, such polyvinyl acetate differs from other modifications by a number of advantages: high content of dry matter, low viscosity, risk of combustion and the absence of other environmental problems.

In this research work, the stages of commercialization of polyvinyl acetate obtained by the same emulsion method, in particular, the process of its plasticization using dibutylphthalate were

studied. It is known from the literature that plasticization can be carried out at different stages of the production process in the form of goods.

The amount of dibutylphthalate added to aqueous polyvinyl acetate dispersion has a direct effect on the viscosity of the polyvinyl acetate dispersion in the form of a commodity. In our study, the amount of plasticizer was obtained in the range of 5-25%. The viscosity of the obtained product was carried out in a glass measuring the conditional viscosity. The plasticization process was carried out in two different ways:

1. By adding dibutylphthalate (DBF) dispersion to the synthesized finished polyvinyl acetate dispersion,

Experiment -1: Preparation of (DBF) emulsion

1) Take 0.3 g OP-10 and 8 g N2O, both in a beaker and mix vigorously using a mixer for 15 minutes.

2) Take 100 g of DBF and add to the prepared emulsion in an intensively mixed state using a dropper funnel. Stirring is continued for 30 minutes, ensuring that the temperature is 20 ° C. A white sour cream emulsion was formed.

Experiment 2: Add dibutylphthalate (DBF) dispersion to the synthesized finished polyvinyl acetate dispersion.

1) Pour 202.5 g of experimental polyvinyl acetate (PVA) containing 100 g of monomer (PVS) into a 300 g beaker.

2) 15 g of DBF emulsion was added in an amount of 15% relative to the monomer (PVS). Stir vigorously for 2 h, ensuring that the temperature was 20 ° C. The result is a dispersion of polyvinyl acetate in the form of a commodity.

Experiment 3: To study the viscosity of a polyvinyl acetate dispersion in the form of a commodity.

1) The viscosity of the finished polyvinyl acetate dispersion synthesized was carried out in a glass measuring the conditional viscosity, the flow rate was determined 137 + 140 + 143/3 = 140 sec.

2) The viscosity of the polyvinyl acetate dispersion in the form of a commodity was carried out in a glass measuring the conditional viscosity, the flow rate was determined. 214 + 228 + 222/3 = 221.3 sec.

By adding a plasticizer to the system during the synthesis of polyvinyl acetate dispersion.

Experiment: During the synthesis of polyvinyl acetate dispersion, the system temperature was cooled to 40 ° C and neutralized to RN-6-6.5 with NH3 solution. Commodity polyvinyl acetate dispersion was obtained by adding a plasticizer (DBF) when the temperature was lowered to 20 ° C.

The results showed that in both methods it is possible to obtain a dispersion of polyvinyl acetate in the form of a finished product. However, in the second method, the nature of the colloidal protective polymers introduced into the synthesis medium has a significant effect on obtaining the finished dispersion. Samples of polyvinyl alcohol and hydroxyethylcellulose of different

molecular masses were used as colloidal protective polymers. Conclusions were made about the long-term storage of the product and the change in quality at low temperatures.

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