

RESEARCH OF PHYSICAL AND MECHANICAL PROPERTIES AND DEVELOPMENT OF ANTI-CORROSION COMPOSITE MATERIALS AND EPOXY RESINS AND INDUSTRIAL WASTE COATINGS

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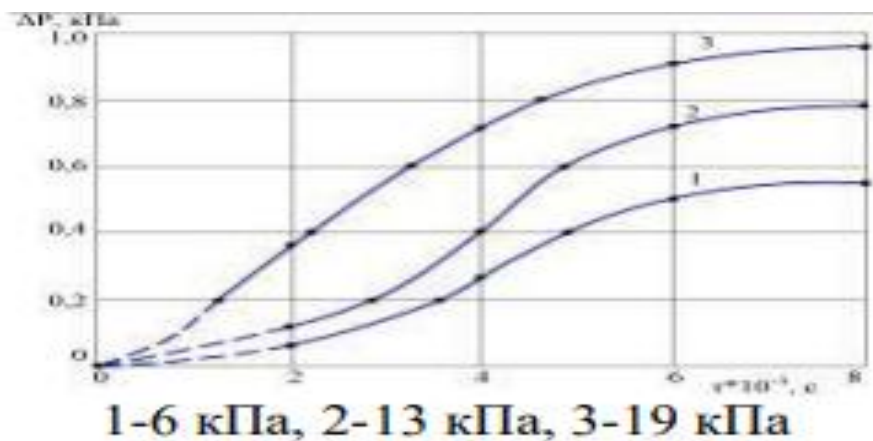
ABSTRACT

This article provides results in the research of physic mechanical properties and the development of anti-corrosion composite polymeric materials and coatings based on epoxy compounds and organic ingredients from industrial waste.

KEYWORDS: *Research, Physico-Mechanical, Development, Effective Composition, Technology, Production, Anti-Corrosion Composite Inhibitory Materials, Coatings*

INTRODUCTION

The study establishes that organometry fillers show a positive effect on the physicommechanical and anti-corrosion properties developed by composite materials and coatings based on them. To identify, next, we show the results of the following studies of the composition based on ED-16, ED-20 ED-22, OIF fillers. [1]

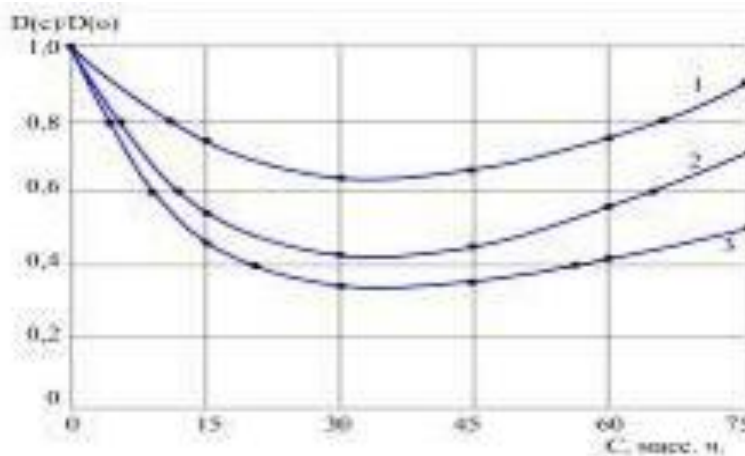


Absorption of NCL vapor epoxy compositions based on ED-16

Figure 1 shows the dependence of the absorption of vapors of itEpoxy composition based on ED-16 at different pressures. As can be seen from Figure 1, degradation in hydrochloric acid steam filled with the waste of gold production production of the Osif-MB of composition seems to occur at the places of reactive groups of binders. [2]

It will be appropriate here that it seems that the phenomenon of the stabilizing effect of the caustal waste of the ZIF is due to their composition, since they include silicon oxides and a

number of metals, very resistant to the action of mineral acids, in addition, the Nelson effect is implemented when it increases The path of passage of aggressive fluid into the depth matrix. Similar results are observed and coatings based on ED-20 and ED-22. When filling the material above the critical level, the phase transfer of the liquid takes place. [3]

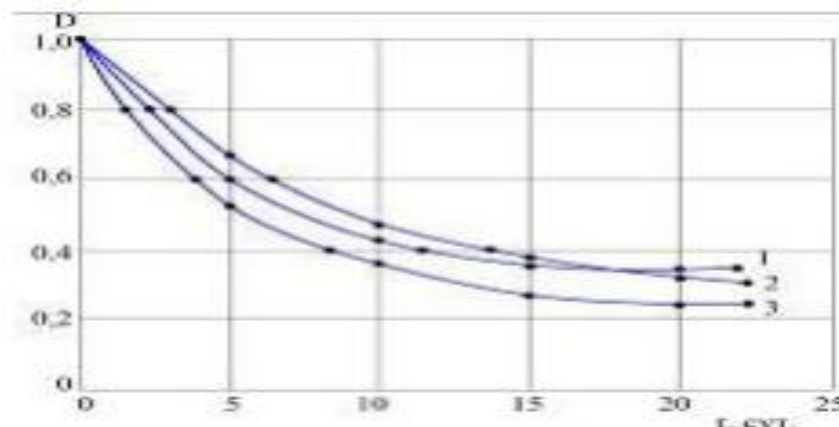


Absorption of NSL vapor epoxy compositions based on ED-16

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This phenomenon well explains the process of education through porosity. The study establishes that organizerine Fillers show a positive effect to physical and mechanical and the anti-corrosion properties of the developed compositional Materials and coatings based on them. Thus, the process of aligning the difference in concentration and Accordingly, the difference in chemical potentials in the systems under study occurs due to the diffusion and phase transfer of the aggressive fluid and its chemical interaction with reaction capable components. In this case, we observe uneven change in the elastic-deformation characteristics of the studied materials. In the outer sides of the sample, mechanical changes have minimal values increasing as the sample center approach. [5]

It is established that as a result of an alkaline environment The samples under study, the micro hardness is significantly reduced. How micro hardness and bearing capacity and stiffness of samples, filled with the OIF depends on the duration of excerpts in the medium and varies on a certain law. Figure 3 shows Degradation features of the micro hardness of epoxy compositions filled with Ed-16, ED-20 and ED-22 with a compression.



1 - ED-16, 2 - ED-20, 3 - ED-22 Figure 3. Degradation functions of the microhardness of epoxy compositions filled with overlooking when compressed

It can be seen that the two areas of the cross-section degradation: the area of homogeneous and diffusion degradation. In the first region, the micro hardness, respectively, and the carrying capacity, and the rigidity of constant and the equifunted value; In the second region, the micro hardness depends on the coordinate of the point and linearly increases with increasing depth.

For a certain time, interval, the presence of an inner region, where the micro hardness and, accordingly, the carrying capacity and rigidity remains initial. In the area of direct contact of the sample material with the medium, micro hardness, the carrying capacity and stiffness is reduced to a constant value for a short time, and then a continuation of the area of homogeneous degradation into the sample is also observed.

Grows the thickness of the first and second regions, and, accordingly, The internal area decreases. In this case, the shape of isochoric degradation can be adopted constant. The studies have established that the anti-corrosion properties of epoxy compositions affect the type of used hardener. Studying the influence of the nature of the hardeners used on the diffusion properties of epoxy compositions were shown, which the smallest permeability of water vapors and water absorption possess epoxy compositions cured with an aliphatic polyamine diethylene amine.

Thus, it was established that the rate of destruction of the filled compositional polymeric materials is determined by the speed of the chemical reaction of the aggressive medium and the reactivity of the fillers due to the formation of the cross-cutting porosity of the material with them some critical content.

It is shown that a composition based on ED-20, cured with aliphatic polyethylene polyamine, has the smallest permeability of steam and water absorption. The experimental studies of the dependence of the destructive voltage during the bending of the composition based on the epoxy oligomer ED-20 on the fillers content were shown that with an increase in the content of phosphoric in the composition, it increases and passes through a maximum with the amount of phosphoric equal to 20 mass. Further increase in the content of this filler bursting Strength - σ_r sharply decreases. Increased adhesion strength σ_{ad} Compositions to the content of filler 20 masses. h. due to the fact that The content of phosphocla, calcium oxides, silicon, magnesium, which are in a combination of more than 92% and their high dispersion play the role of the center during gelation and the content process is completed with higher degrees of stitching. Reducing the

value of the destructive voltage of the composition under the content of phosphochercha more than 20 wt. h. due to a decrease in the density of packaging macromolecules of the binder.

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