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TECHNOLOGICAL BASIS OF PRODUCTION OF INSULATING HYDROCARBON MATERIALS FOR CORROSION PROTECTION OF OIL- AND GASPIPELINES

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The article presents the results of theoretical and experimental research on the development of an energy-efficient technology for the production of new insulating hydrocarbon materials (IHM), which will be used as coatings for protection against corrosive destruction of gas and oil pipelines. It was determined that the use of secondary raw materials is the most rational way that will allow to reduce costs in the production of IHM and, at the same time, to improve the ecological situation in the country. Spent petroleum products, non-standard coke chemical production products, polyethylene terephthalate (PET) waste, tar-asphaltic substances, spent polymer products, spent automobile tires, secondary cellulose, liquid products of pyrolysis of polymer and rubber raw materials should be considered quite promising secondary raw materials for the production of IHM. The key points in the production of IHM, which will allow obtaining a final product with a predicted level of operational properties, are the definition and selection of raw materials, the preparation of raw materials for processing and the variation of technological parameters during processing itself (modification of the hydrocarbon base with modifiers and activating substances). Within this approach, the main requirements for secondary raw materials are formulated, which allow to produce IHM without excessive load on oil refinery equipment. A graphic interpretation of the formation of the protective properties of IHM and a scheme for the production of IHM based on secondary raw materials are presented, using which it is possible to obtain IHM with fairly wide temperature limits of its use (-30 ÷ +120 °C) and other quality indicators that meet the requirements for modern insulating materials.

Keywords: corrosive destruction, insulating hydrocarbon materials, secondary raw materials, spent petroleum products, oil sludge, sour tar, tar-asphaltic substances, coal pitch, polymers, rubber crumb.

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