
DEPENDENCE OF "VISCOSITY-TEMPERATURE" OF WASH OILS FROM DIFFERENT MANUFACTURERS

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Coal tar wash oil is the main absorbent for removing benzene hydrocarbons from coke gas and is also used in various industries. Determination of oil viscosity is important primarily for precise regulation of the flow of the substance, given that a low viscosity value indicates less resistance to movement and higher movement speed. The value of the oil viscosity index in the process of its use for the recovery of benzene hydrocarbons from coke gas acquires the status of an integral criterion for evaluating the properties of the oil as an absorbent. For engineering and technological calculations of the viscosity of wash oil, coke chemists of Ukraine use two reference sources of information, although the conditions and materials for obtaining data are not specified in these sources. In the current period in Ukraine, in connection with the limitation of the production of wash oil, the issue of purchasing foreign samples of oil of a wide range of quality is being considered. To determine and interpret the temperature dependence of viscosity for samples of foreign and domestic oils of different composition, experiments were performed to measure dynamic viscosity using a Brookfield DV2T rotational rheometer with a controlled shear rate. β -methyl naphthalene was selected as the additive that most reduces oil viscosity, and diphenylene oxide as the additive that most increases oil viscosity. Among the experimentally obtained dependences, the maximum viscosity values are obtained by the oil produced in Ukraine on a single-column unit, and the minimum values by the oil produced abroad, artificially saturated with β -methyl naphthalene. The nature of the experimentally obtained curves is approximately the same, only the heavier domestic oil is more temperature-dependent at the beginning of the temperature range taken for research. Foreign samples of absorbent oil with a rather narrow boiling range have a lower viscosity level than oils of Ukrainian producers with a wider boiling range.

Keywords: wash oil, viscosity, temperature dependence, aromatic components, viscous flow activation energy.

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