VISCOSITY AND DENSITY OF VACUUM WORKING FLUIDS FOR DIFFUSION PUMPS

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Results of a research of viscosity and density of four vacuum oils for diffusive vacuum pumps of domestic and foreign production are presented. Measurement of properties are carried out with an atmospheric pressure: viscosity by a capillary method, and density - methods of the densimeter and hydrostatic weighing. Identification of samples of vacuum oils has been made by method of nuclear magnetic resonance. There is rather good correlation of structure of oils with their viscosity and density. Settlement expressions are presented and density error estimates by a hydrostatic method and viscosity by a capillary method are calculated. The temperature dependence of viscosity is presented by means of the known equation like Arrhenius-Andrade, and for density is used square function on absolute temperature. The research is executed at the expense of a grant of the Russian scientific fund (project No. 18-19-00478).

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