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Theoretical study of dynamic viscosity of hydrocarbons

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It is known that the determination of the dynamic viscosity of liquids is important for determining their various physical properties. Therefore, extensive research has been carried out in this direction in recent years. It has been established that many factors can influence the viscosity of liquids. When studying the dynamic viscosity of liquid metals, it was found that the dynamic viscosity of these materials varies depending on the temperature and ionic radius of the metal. In previous studies, various structural changes were observed in solids depending on the temperature of the ionic radius. Therefore, it is important to study the physical processes occurring in hydrocarbons as a result of these influences.

Although many of the chemical engineering problems with hydrocarbons have been studied, the physical processes are not well understood. It is very important to study in the laboratory many physical processes that occur during the transportation of hydrocarbons through pipes. In the course of previous studies, the dynamic viscosities of aromatic hydrocarbons have been widely studied and many physical processes occurring in them have been studied. In this study, the dynamic viscosity of hydrocarbons was studied. The study was carried out with phenomenological aspects. The objects of study were selected: cyclopentane, methylcyclopentane, ethylcyclopentane, propylcyclopentane, cyclohexane, methylcyclohexane and ethylcyclohexane. The studies were carried out in the temperature range T = 253-373 K. It has been established that with increasing temperature, the value of the dynamic viscosity of hydrocarbons decreases. In these materials, the mechanism of change in dynamic viscosity at high temperatures has been studied. Cyclopentane, methylcyclopentane, ethylcyclopentane, propylcyclopentane, cyclohexane, methylcyclohexane and ethylcyclohexane were taken in calculations. It was found that as the number of molecules in the composition increased, the viscosity value increased. At room temperature, the viscosity increased from C5H10 to C8H16 to $\Delta\eta$ = 446×106 kg/m•sec.

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