

# PVT-measurements of butylcyclohexane - n-decane binary mixture.

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One of the main factors emphasizing the importance of jet fuel research is the need to improve its energy efficiency. Modern research is aimed at creating cleaner and more economical fuels, which will reduce emissions of carbon dioxide and other harmful substances into the atmosphere. This, in turn, contributes to improving the environmental situation and meeting international environmental standards. Butylcyclohexane and its mixtures with hydrocarbons play a significant role in the chemical and energy industries, especially in the context of jet fuel utilization. This compound has a number of properties that make it attractive for use in aviation and other industries with high fuel quality requirements. One of the key factors in the importance of butylcyclohexane as a jet fuel component is its high resistance to detonation and good thermodynamic characteristics. This makes it possible to create fuels with improved performance properties that provide more stable engine operation, especially at high loads and temperatures. Butylcyclohexane-hydrocarbon blends can be tuned to achieve the desired octane number, which is critical to ensure optimal performance of internal combustion engines and jet engines. These blends help reduce the likelihood of detonation, which in turn improves combustion efficiency and reduces emissions. In this work we studied pvt- measurements of butylcyclohexane - n-decane binary mixture of 0.5 mole fraction. By using method of isochore break points we obtained phase transition points for six isochores.