

# PARAMETERS OF PHASE EQUILIBRIA AND IDENTIFICATION OF PHASES OF SYSTEM HYDROCARBON – WATER.

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## Abstract

Character of mutual solubility of water and hydrocarbons results to that binary system hydrocarbon-water in usual conditions is heterogeneous with wide area of stratifying of phases. Researches of temperature dependence isochoric heat capacities and features of behaviour of function  $C_v=f(T)$  at phase transitions a liquid-liquid and liquid-vapors allow to fix simultaneously with high accuracy values of temperature, density on a curve of phase equilibrium, limits of coexisting phases, region of mutual solubility and stratifying of components. For constant structure  $x=\text{const}$  systems  $[(1-x) C_7H_{16}+xH_2O]$  containing  $x=3.0$  weight percent of a polar component are determined parameters temperature  $T$ , density  $\rho$ , pressure  $P$  of phase transitions liquid-liquid and liquid-vapors and. The phase diagram  $\rho=f(T)$  is constructed in a range of temperatures 430 K-543 K and density  $145.0 \text{ kg}\cdot\text{m}^{-3}$  to  $501.5 \text{ kg}\cdot\text{m}^{-3}$ . For studied systems the  $T$ ,  $\rho$  values of liquid-liquid-vapour and liquid-liquid immiscible regions are determined.

It is established, that presence of a polar component -water- in n-heptane essentially changes a configuration of the phase diagram and the line of phase equilibrium liquid - vapors is shifted to lower temperatures.

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