Influence Solvents to the Changes Isobaric Heat Capacity Oils

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The knowledge of the thermophysical properties of liquids mixtures, oils petroleum, such as non-polluting automotive fuels, under a broad range of operating conditions are of utmost importance for the petrochemical industry. Experimental isobaric heat capacity for the compressed liquid phase of the binary system oils and n-hexane have been measured at 298.25 K to 396.52 K. The measurements have been performed for eight different compositions as well as the pure compounds at ten isobars up to 50 MPa. For each composition, the experimental values were correlated using a Tait-type equation. Environmentally adapted lubricants based on oils have received growing attention in recent years in several industrial application such as two stroke engines, hydraulic and gear units for wind-turbines, greases and hydraulic and gear oils for agricultural applications. Vegetable oils have to perform as the formerly used lubricants, with the additional condition of their biodegradability. The knowledge of the capacity, density and dynamic viscosity as a function of temperature and pressure is important for future lubricant applications. Thus, from PρT data it is possible to determine the isothermal compressibility of oils, which is of great importance to analyze the risk of surface fatigue. Heat capacities are basic thermophysical properties of fluids and oils. Data on heat capacities as a function of temperature are required for energy balances in chemical energy processes and for the design and control stages. Variations in heat capacity are also useful for understanding changes in the structure of fluids, and isobaric heat capacity data at different pressures can be used to validate equations of state.