

# Thermodynamic Measurements on *n*-Hexadecane (C<sub>16</sub>H<sub>34</sub>) and *n*-Heptadecane (C<sub>17</sub>H<sub>36</sub>) at Elevated Pressures

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Specific volumes of *n*-hexadecane (*n*-C<sub>16</sub>H<sub>34</sub>) and *n*-heptadecane (*n*-C<sub>17</sub>H<sub>36</sub>) are presented for temperatures between 298 and 348 K and pressures up to 280 MPa. The melting curve for *n*-C<sub>16</sub>H<sub>34</sub> was determined with differential thermal analysis. The *pVT* data are established for the liquid, solid and (in the case of *n*-C<sub>17</sub>H<sub>36</sub>) rotator phases. For *n*-C<sub>16</sub>H<sub>34</sub> the density immediately below the freezing temperature is larger than for *n*-C<sub>17</sub>H<sub>36</sub> immediately below the rotational transition temperature. Changes of volume, enthalpy, and entropy along the phase transitions are reported. The volume change of melting decreases distinctly with increasing pressure, whereas the volume change at the rotational transition is much less pressure-dependent. Enthalpy and entropy changes have been calculated with the aid of the Clausius-Clapeyron equation.

*Key words:* Hexadecane, Heptadecane; DTA; *pVT*, High Pressure; Phase Transitions.