CALCULATIONAL METHODS

In Table 3 comparisons of three enthalpy calculational methods with smoothed experimental values are presented for the systems and conditions covered in this investigation. The three methods used in calculating the isothermal effect of pressure were: Method A, Redlich-Kwong (*R-K*) equation of state (*13*); Method B, Benedict-Webb-Rubin (*BWR*) equation of state (*2*); and Method C, Pitzer et al. generalized correlation of thermodynamic properties (*12*). The use of these equations of state for enthalpy calculations is discussed elsewhere (*2, 7*). Critical constants used in the *R-K* equation were taken from (*6*) and *BWR* constants from (*2*).

Pseudocritical temperatures and pressures and molar average acentric factors were used in applying the Pitzer, et al. generalized correlations and calculating the Δh values given under Method C.

As can be seen by the comparisons in Table 3, the two equation methods and the Pitzer, et al. correlation agree with the smoothed experimental values to within ± 2 B.t.u./lb.

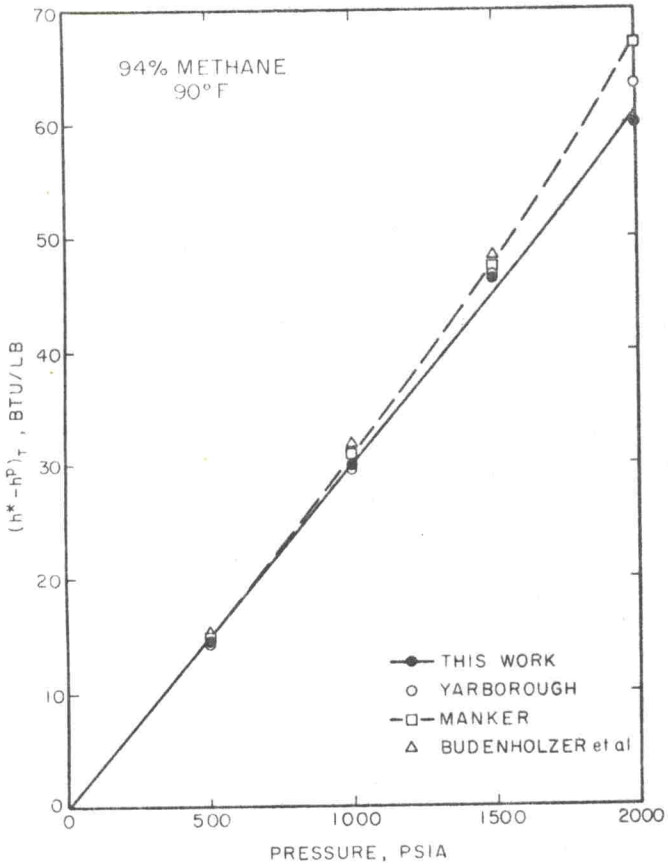

Fig. 3. Enthalpy of methane-propane mixture at 90°F.

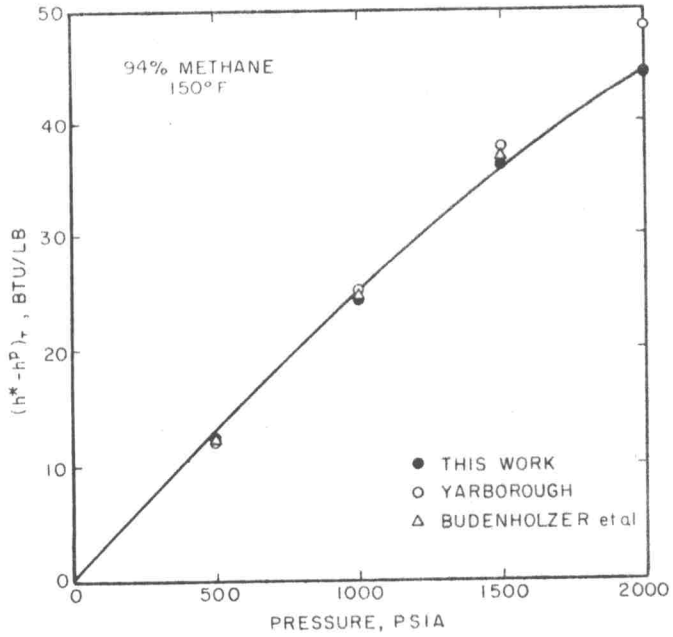

Fig. 4. Enthalpy of methane-propane mixture at 150°F.

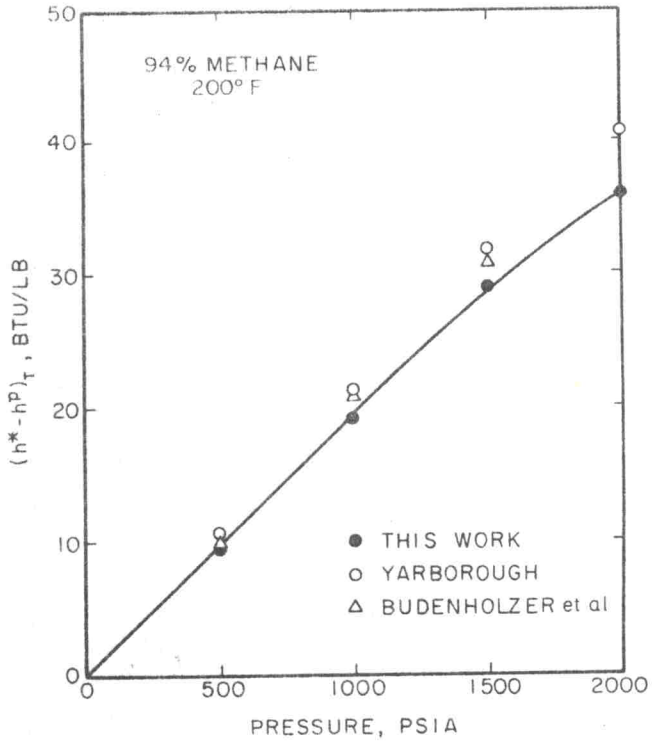

Fig. 5. Enthalpy of methane-propane mixture at 200°F.

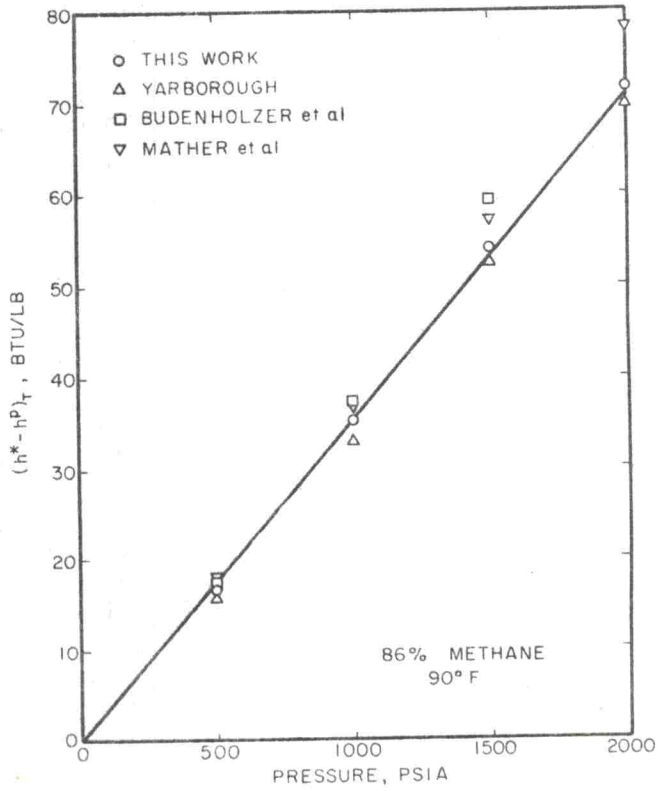

Fig. 6. Enthalpy of methane-propane mixture at 90°F.