## CONCLUSIONS

The isothermal effect of pressure on the enthalpy of methane, a 5.1 mole % propane in methane mixture, and a 12.6 mole % propane in methane mixture was determined by means of isothermal flow calorimetry. The study covered the range 90 to 200°F. and 500 to 2,000 lb./sq. in. abs. The results are believed to be precise to within ± 2 B.t.u./lb.

Comparison of results with values from other experimental data showed good general agreement. Both the volumetric data of Sage and Lacey, and the Joule-Thomson data of Budenholzer, et al. yield enthalpies in substantial agreement with the present work. The Mollier charts from work at the University of Michigan are in poorer agreement with the data of this work, particularly at high pressures.

Comparisons of the experimental data with calculated enthalpies by using the Redlich-Kwong and Benedict-Webb-Rubin equations of state and Pitzer's corresponding states correlation showed close agreement. The equations of state and Pitzer's correlation predicted enthalpy values usually within 2 B.t.u./lb. of the experimental results, demonstrating the applicability of these predictive techniques in the range of conditions covered by this study.


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## NOTATION

$H$ = enthalpy, B.t.u./lb. mol.
$h$ = enthalpy, B.t.u./lb.

### Superscripts and Subscripts

$o$ = calorimeter outlet pressure
$p$ = calorimeter inlet pressure
$T$ = run temperature
$^\circ$ = ideal gas state

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