Fig. 4 shows that the isotherm given by the classical theory is a fairly g… representation of the behaviour of the heavy gases N_2 and A, and that the pr… dicted differences between the quantal isotherms are in good agreement with th… experimental differences between the light gases.

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THE VAPOUR PRESSURE AND ORTHOBARIC DENSITY OF NITROUS OXIDE

By D. Cook
The Department of Chemistry, University of Manchester

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The vapour pressure of nitrous oxide has been determined from 12° C to the crit… point, and the orthobaric densities from 20° C to the critical point. The apparatus c… sisted of a calibrated, heavy-walled, hard-glass pressure tube containing the gas sam… confined over mercury, and thermostated with a vapour bath. Visual observation… the dew points, boiling points and critical points was thus possible. Pressures w… determined with a free piston gauge to 0·01 atm, and temperatures to 0·01° C with merc… in-glass thermometers. A cathetometer capable of reading to 0·001 cm was used to m… the volume measurements.

The vapour pressures obtained are substantially lower than the I.C.T. values and … represented by the equation

$$\log_{10} p \text{ (atm)} = 4\cdot6258 - (858\cdot63/T).$$

The results are compared with other determinations on the vapour pressure and orth… baric densities of N_2O.

In the course of measuring the vapour pressure and orthobaric densities … mixtures of CO_2 and N_2O, these properties of pure N_2O were determined. T… vapour pressures obtained were consistently lower than the I.C.T. values,[1] w… the orthobaric densities showed only slight differences. The I.C.T. vap…