othermal compressibility k_T, r $\mathscr{L}_0$, of liquid He⁴ at even res)

)	γ	$\mathscr{L}_0$
	1.32	0.173
	1.27	0.165
	1.25	0.152
	1.23	0.142
	1.22	0.135
	1.21	0.129
	1.20	0.124
	1.19	0.118
	1.18	0.113
	1.17	0.108
	1.48	0.253
	1.47	0.252
	1.44	0.231
	1.40	0.213
	1.36	0.197
	1.33	0.183
	1.31	0.172
	1.32	0.164
	1.32	0.158
	1.92	0.442
	1.85	0.412
	1.71	0.350
	1.63	0.311
	1.57	0.280
	1.53	0.257
	1.50	0.237
	1.48	0.221
	1.47	0.212
		0.902
		0.800
		0.610
		0.498
		0.425
		0.373
		0.336
		0.308
		(6.72)
		4.01
		1.36
		0.898
		0.673
		0.567
		0.485

ned through equation (3.3) hs of n versus P near the cond differences have been arely altered any $(\partial n/\partial P)$

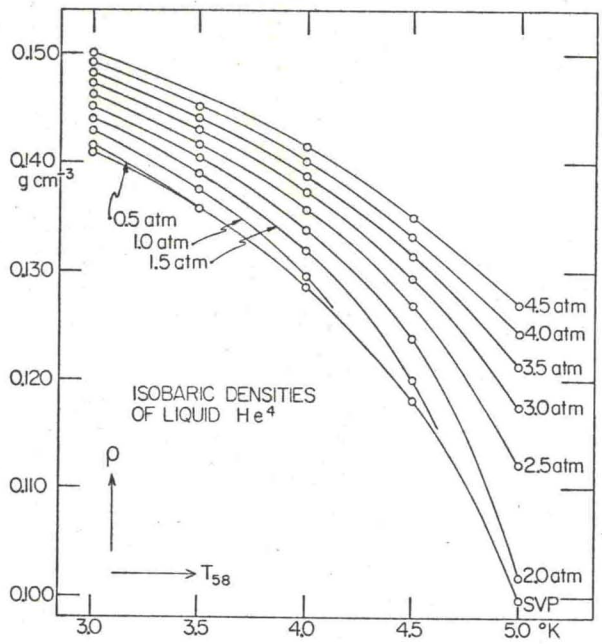

FIG. 2. Isobaric densities of liquid He⁴ as a function of temperature for pressures up to 4.5 atmospheres.

value by more than 2%. We believe that the resulting uncertainty in k_T is about ±3%, except for one point at the SVP at 5.000° K where the uncertainty is about 15%. Figure 3 shows these isothermal compressibility results as a function of pressure along the five isotherms. Keesom and Keesom (Keesom 1942, p. 243) obtained a smoothed graph of $(\partial\rho/\partial P)_T$ against T from which the isothermal compressibility of liquid helium may be obtained at 2.5 atmospheres and 3.0, 3.5, and 4.0° K to compare with the present measurements. After correction to the 1958 scale of temperatures, Keesom and Keesom's values are between 2 and 5% higher than our present results.

Table I also shows values of the ratio of heat capacities γ calculated from equation (3.4). Atkins and Stasior's (1953) smoothed values of u_1 were used, interpolating graphically where necessary. If these u_1 values are uncertain by ±2%, then our γ values are uncertain by ±5%. As no measurements have been made of u_1 at 4.500° K or 5.000° K, no calculation of γ was possible for those two isotherms.

Finally, Table I shows values of the liquid structure factor $\mathscr{L}_0$ calculated entirely from the results of the present measurements, using equation (3.5). The estimated uncertainty in $\mathscr{L}_0$ is the same as that for k_T, namely ±3%, except for the one point at the SVP at 5.000° K where the uncertainty is about 15%. Gordon, Shaw, and Daunt (1954) have measured scattering of X rays down to angles of 1.5° at 4.2° K at the SVP. Their data extrapolated to zero angle gives $\mathscr{L}_0 = 0.575 \pm 0.040$.* Our results listed in Table I may be

*Due to a misprint, their paper states 0.475, but their Fig. 2 shows that 0.575 is meant for this quantity.