were used to calculate values of f(v) in the volume range not covered by the experimental data. The values of g(v) calculated from shock wave data, the values of g(v) measured along the atmospheric isobar, and the condition $dg/dv > 0$ were used to calculate values of g(v) in the volume range not covered by experiment.

The Hugoniot curves centered at -20°C, 25°C, 158.5°C, and 256°C on the atmospheric isobar were calculated directly with the expression $p[f(v) - \frac{1}{2}(v_o - v)] = g(v_o) - g(v)$ obtained by combining the Hugoniot equation with the (e-p-v) equation of state. The calculated Hugoniot curves were consistent with experimental Hugoniot points up to a pressure of 240 kbar but then started to deviate from them. The isentropes passing through 25°C, 158.5°C, 256°C, and 296°C on the atmospheric isobar were calculated by numerically integrating the differential equation for an isentrope with a Runge-Kutta method; the temperature along these isentropes was calculated with the equation $T = T_i \exp -\int_{v_i}^{v} dv/f(v)$. Calculation of the temperature where the 158.5°C, 256°C, and 296°C isentropes intersect the 25°C Hugoniot curve defines values of shock temperature on this Hugoniot curve. The temperature $T_c = 522.1$°C at the point of intersection ($p_c = 58$ kbar, $v_c = 0.661$ cc/g) of the 296°C isentrope and the 25°C Hugoniot is the highest temperature on the 25°C Hugoniot that can be calculated from the data without additional assumptions. To put a possible upper estimate on shock temperature along the 25°C Hugoniot above 58 kbar, the temperature was calculated by integrating along the Hugoniot curve with constant C_v. The method of Walsh and Christian was used to calculate temperature along the 25°C Hugoniot above 0 kbar.

It is obvious from our calculations of the (e-p-v) equation of state that many more experimental Hugoniot (p-v) points are needed to construct an (e-p-v) equation of state without first assuming its functional form. Indeed, to test the feasibility of constructing an equation of state from experimental data it would be necessary to determine, with accuracy, the positions of at least three Hugoniot curves in the (p-v) plane. With well-defined Hugoniot curves it is possible to test the validity of thermodynamic assumptions such as $(\partial e/\partial p)_v = f(v)$, and if necessary to