Erratum: "Thermodynamics of the superconducting phase transformation in high $T_c$ ceramics with magnetoelastic effects" [J. Mater. Res. 4, 33 (1989)]

S. J. Burns
Materials Science Program, Department of Mechanical Engineering, University of Rochester, Rochester, New York 14627

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The appendix to the paper, "Thermodynamics of the superconducting phase transformation in high $T_c$ ceramics with magnetoelastic effects," J. Mater. Res., Vol. 4, No. 1, Jan/Feb 1989, pp. 33–38, contains typesetting errors. The thermodynamic state variables used in the incremental energy balance of the first law of thermodynamics are given in units of energy per unit mass. The work terms for the magnetic field, $H$, and the magnetic induction, $B$, are in units of energy per unit volume. The volume per unit mass, $v$, when used as a multiplier converts from volume to mass units. The thermodynamic definitions in mass units are underlined. Thus, $C_p = \frac{\partial S}{\partial T}$ is heat capacity; $\beta_T = -\frac{1}{\rho} \frac{\partial \rho}{\partial T}$ is compressibility; $\mu_M = \frac{1}{v} \frac{\partial B}{\partial H}$ is permeability; $K_E = \frac{1}{v} \frac{\partial D}{\partial E}$ is permittivity; $\omega_0 = \frac{\partial \phi_0}{\partial \phi_0}$ is chemical self interaction.

The bar quantities are partial molar properties such as the partial molar volume $\bar{v}_0$, partial molar entropy $\bar{S}_0$, partial molar magnetism $\bar{b}_0$, and partial molar electric displacement, $\bar{d}_0$.

\[
\begin{array}{cccccc}
\bar{S} & \bar{v} & \bar{B} & \bar{D} & \bar{\phi}_0 & \bar{\gamma}_0 \\
\bar{\alpha} & \bar{\beta} & \bar{\kappa} & \bar{\lambda} & \bar{\omega}_0 & \bar{\delta}_0 \\
\end{array}
\]

APPENDIX A

The following table gives definitions and Maxwell relations:

\[
\begin{align*}
\frac{\partial S}{\partial T} & = T \frac{\partial T}{\partial S} = \text{heat capacity} \\
\beta_T & = -\frac{1}{v} \frac{\partial v}{\partial T} = \text{compressibility} \\
\mu_M & = \frac{1}{v} \frac{\partial B}{\partial H} = \text{permeability} \\
K_E & = \frac{1}{v} \frac{\partial D}{\partial E} = \text{permittivity} \\
\omega_0 & = \frac{\partial \phi_0}{\partial \phi_0} = \text{chemical self interaction} \\
\end{align*}
\]