

Thermal Equation of State of Stishovite	X17B1
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The pressure-volume-temperature (P-V-T) behavior in SiO₂-stishovite has been studied using a DIA-type, cubic-anvil apparatus (SAM 85) and *in situ* synchrotron X-ray diffraction.

A polycrystalline specimen previously hot-pressed in a uniaxial split-sphere apparatus was used. The P-V-T data to $P > 10$ GPa and $T > 1000^\circ\text{C}$ were analyzed using several approaches, including a temperature-dependent Birch-Murnaghan equation-of-state, isothermal compression and isobaric thermal expansion. The bulk modulus (K_0) and axial compressibilities of stishovite are compared with values obtained from Brillouin scattering and diamond-anvil cell X-ray studies on single crystal stishovite and ultrasonic studies on polycrystalline specimens.

The results obtained from different approaches show the whole data set is internally consistent. The temperature derivative of bulk modulus at zero pressure $(\frac{\partial K_0}{\partial T})_{P_0}$ is measured for the first time to be $-0.0355(106)$ GPa/K.