

The crystal structure of wollastonite with high-pressure single crystal X-ray diffraction

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The structural behavior of wollastonite up to 5.9GPa was studied by high-pressure single crystal X-ray method in diamond-anvil cell at room temperature. The bulk modulus calculated from the Birch-Murnaghan equation of state is 104(2) GPa ($K_0' = 4$ fix). The linear axial compressibilities are $B_a = 3.58 \times 10^{-3} \text{GPa}^{-1}$, $B_b = 2.31 \times 10^{-3} \text{GPa}^{-1}$, and $B_c = 2.87 \times 10^{-3} \text{GPa}^{-1}$. That is, these results suggest that the linear compressibility of wollastonite along SiO₄ chain is similar to that of clinopyroxene.