Equation of state of perovskite solid solution of Mg0.9Al0.2Si0.9O3 composition

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In situ X-ray diffraction experiments for aluminous perovskite of Mg0.9Al0.2Si0.9O3 composition were performed in the pressure ranges up to 13 GPa using synchrotron radiation at Photon Factory, Tsukuba, to determine the equation of state. Bulk modulus of the aluminous perovskite was obtained as K0=198+27GPa, when K'0=4 was assumed. This K0 value is about 20% lower than that of MgSiO3 perovskite reported so far.