Isentropic Compressibility

Compressibility under isentropic (constant entropy $S = \text{const}$) compression/decompression thermodynamic process:

(1) $$c_S = \frac{1}{\rho}\left(\frac{\partial \rho}{\partial p}\right)_S = -\frac{1}{V_m}\left(\frac{\partial V_m}{\partial p}\right)_S$$

Isentropic Compressibility is material property and is inverse to Isentropic bulk modulus K_S:

(2) $$\beta_S = \frac{1}{K_S}$$

See also

Physics / Mechanics / Continuum mechanics / Continuum body / Compressibility

[Isentropic bulk modulus (K_S)]