

27. The bulk moduli of ethanol, mercury and water are given as 0.9, 25 and 2.2 respectively in units of 10^9 Nm^{-2} . For a given value of pressure, the fractional compression in volume is $\frac{\Delta V}{V}$. Which of the following statements about

$\frac{\Delta V}{V}$ for these three liquids is correct? [Online April 11, 2014]

- (a) Ethanol > Water > Mercury
- (b) Water > Ethanol > Mercury
- (c) Mercury > Ethanol > Water
- (d) Ethanol > Mercury > Water

27. (a) $\text{Compressibility} = \frac{1}{\text{Bulk modulus}}$

As bulk modulus is least for ethanol (0.9) and maximum for mercury (25) among ethanol, mercury and water. Hence

compression in volume $\frac{\Delta V}{V}$

Ethanol > Water > Mercury