

this hydroxide is not the same as the high pressure modification prepared by Shafer and Roy. It is derived from a high-pressure modification of SnOOH .

In addition to these studies, high pressure x-ray diffraction studies have been performed with a camera similar to that described by Mariano. In this camera, high pressure is achieved between diamond anvils. A collimated beam is brought through one diamond. The diffracted rays pass out through the other diamond and impinge on a flat photographic plate or film.

With powder specimens, Debye rings are formed and the interplanar spacings d may be calculated from the formula

$$d = \frac{\lambda}{\sqrt{2} \left[1 - (1/1 + x^2)^{1/2} \right]^{1/2}}$$

where λ is the wavelength of the radiation employed and x is the ratio of the measured radius of the Debye ring to the sample-to-film distance.

The compressibility β_T is defined as $-1/V (\partial V / \partial P)_T$ but this is just three times the linear dilatation $1/d (\partial d / \partial P)$. Differentiating the expression above with respect to pressure, we can obtain

$$\beta = \frac{3x \partial x / \partial P}{2(1 + x^2) \left[(1 + x^2)^{1/2} - 1 \right]}$$

or for finite changes

$$\beta = \frac{3x \Delta x / \Delta P}{2(1 + x^2) \left[(1 + x^2)^{1/2} - 1 \right]}$$