

is 86 GPa, and the bulk modulus is 110 GPa. The value for $d\mu/dP$ is 2.99. This is the largest $d\mu/dP$ reported thus far for any element.

Abey, A. E., HEARD, H. C., Bonner, B. P., and Duba, A., Stress-strain behavior of polycrystalline NaCl to 3.2 GPa, Lawrence Livermore Laboratory, Rept. UCRL-51743 (1975).

Abey, A. E., and BONNER, B. P., High-pressure deformation of coal from Powder River Basin, Wyoming, Fuel 54, 165-68 (1975). [UCRL-74782, Preprint, Rev. 1]

Abey, A. E., SCHOCK, R. N., and Duba, A., Quasi-static deformation of porous beryllium and aluminum, Lawrence Livermore Laboratory, Rept. UCRL-76587, Preprint (1975).

BONNER, B. P., and Abey, A. E., High-pressure deformation of coal from Powder River Basin, Wyoming, Fuel 54, 165-68 (1975). [UCRL-74782, Preprint, Rev. 1]

Data on the mechanical response of Powder River Basin coal at high pressures are needed to model the fracture properties of coal beds subjected to explosive loading. The pressure-volume relation to 3.0 GPa and shear-strength versus mean-pressure failure properties to a confining pressure of 0.7 GPa are reported. Brittle fracture was found to limit the shear strength of the coal, even at 0.7 GPa. The coal was compressible (22% volume strain at 3.0 GPa) with little or no unloading hysteresis. The discontinuous, pressure-induced phase transitions normally associated with free water were not evident in the coal compressions, although water was present.

BONNER, B. P., V_p/V_s in saturated granodiorite loaded to failure, Pageoph. 113, 25-29 (1975). [UCRL-76197, Preprint]

Ultrasonic compressional and shear travel times have been measured simultaneously along the direction of maximum compression for granodiorite loaded in uniaxial stress. Excess pore fluid (kerosene) is available during the deformations, which are performed under light confinement (2.5 MPa) at an average strain rate of about $5 \times 10^{-6} \text{ s}^{-1}$. V_p/V_s increases monotonically with shear stress (~13%) until failure. These data are consistent with either (1) a high rate of fluid flow of the same order as the increase in dilatant volume with time, or (2) an increase in total porosity with a decrease in mean aspect ratio of the pores (MPa = 10^6 N/m^2 - 10 bars).