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Superconductivity in the high pressure phases of barium[1] D. E. JACKSON, J. J. HAMLIN, Univ of Florida - Gainesville — At high pressure, barium goes through a series of structural phase transitions. Recently, low temperature x-ray diffraction measurements identified a a new structural phase at low temperatures (Ba-VI). Since Ba-VI appears to be accessible only via compression at low temperatures, the superconducting properties of Ba-VI are not well characterized. In this work, we used a bellows driven diamond anvil cell which allows us to load and unload pressure at low temperature to study the superconducting properties of Ba-VI. AC magnetic susceptibility measurements were used to measure the superconducting transition temperature and volume fraction in order to map out the superconducting properties of the stable and metastable phases of barium.

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