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Weak coupling BCS-like superconductivity in the pnictide oxide $Ba_{1-x}Na_xTi_2Sb_2O$[1] B. LORENZ, TCSUH and Dept. of Physics, University of Houston, M. GOOCH, TCSUH, University of Houston, P. DOAN, Z. TANG, A.M. GULOY, TCSUH and Dept. of Chemistry, University of Houston, C.W. CHU[2], TCSUH and Dept. of Physics, University of Houston — We report the results of low-temperature heat capacity measurements of the pnictide oxide superconductor $BaTi_2Sb_2O$ and the optimally Na-doped compound $Na_{0.15}Ba_{0.85}Ti_2Sb_2O$. Temperature- and field-dependent heat capacity data are well described by a single-gap BCS theory. The estimated values for the normal-state Sommerfeld constant, the heat capacity jump at T_c, and the electron-phonon coupling constant are in favor of a conventional weak coupling superconductivity, possibly mediated by electron-phonon interaction. The results are discussed with regard to and compared with recent first-principles calculations.

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