

Abstract Submitted
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The Specific Heat of $\text{Mg}(\text{B}_{1-x}\text{C}_x)_2$: Two-Gap Superconductors

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LBNL and University of California Berkeley — Two polycrystalline samples of $\text{Mg}(\text{B}_{1-x}\text{C}_x)_2$ were measured in magnetic fields (B) to 9 T. The samples show no evidence of magnetic impurities and have only small non-superconducting fractions. For $x = 0.1$, $T_c = 32$ K and for $x = 0.2$, $T_c = 20$ K. The specific heats of both samples can be fit with two superconducting energy gaps as was the case for MgB_2 , although the magnitudes and fractions for each are different. For the two carbon-substituted samples the evolution of $\gamma(\text{B})$ with B, the normal state γ values, and the Debye thetas will be compared to those of MgB_2 .

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