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Vortex relaxation of the noncentrosymmetric $CePt_3Si$ A.C. MOTA, Festkoerperphysik, ETH-Zurich, C.F. MICLEA, F. STEGLICH, Max-Planck-Inst. for Chemical Physics of Solids, Dresden, M. SIGRIST, Theoretische Physik, ETH-Zurich, E. BAUER, Inst. für Festkörperphysik, T.U. Wien — The discovery of superconductivity (SC) in $CePt_3Si$ by Bauer et al. (PRL. 92, 027003 (2004)), has attracted much interest since the compound lacks an inversion center and it has an unusually high upper critical field H_{c2}. Theoretical studies have pointed out that spin-orbit coupling could lead to a pairing state of mixed parity. For $CePt_3Si$ it has been proposed that the combination of spin triplet p-wave and spin-singlet s-wave symmetries could explain most of the experimental facts consistently. Here we report on flux dynamics on a single crystal of $CePt_3Si$. The SC probed by means of magnetic susceptibility and specific heat shows a sharp transition at T_c= 0.45 K with a width of 0.1 K. Decays of the remnant magnetization display a clean logarithmic time dependence with rates that follow the temperature dependence expected from the Kim – Anderson theory. However, the creep rates are extremely low, lower than observed in any other superconductor. The low rates are not caused by high critical currents. On the contrary, the critical current in $CePt_3Si$ is considerably lower than in other superconductors with higher vortex relaxation rates.

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