Magnetocaloric effect in amorphous and partially crystallized 
\( \text{Fe}_{80}\text{Zr}_{7}\text{Cr}_{6}\text{Nb}_{2}\text{Cu}_{1}\text{B}_{4} \) alloy

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In the present work the microstructure and thermomagnetic properties of 
\( \text{Fe}_{80}\text{Zr}_{7}\text{Cr}_{6}\text{Nb}_{2}\text{Cu}_{1}\text{B}_{4} \) ribbon in the as-quenched state and after the accumulative annealing in the temperature range 600 K – 800 K for 10 min were studied using vibrating sample magnetometry and Mössbauer spectroscopy. The second order phase transition from ferro- to paramagnetic state is observed and the Curie temperatures are placed just below 273 K. The maximum value of the magnetic entropy change \((\Delta S_M)\) observed in the vicinity of the Curie point is equal to 0.85 J/(kg K) for the alloy in the as-quenched state. The second, low intensity maximum noticeable near 180 K could be related to supplementary magnetic phase transition. It was confirmed by Mössbauer studies and magnetic measurements performed for zero-field-cooled (ZFC) and field-cooled (FC) regimes.