We performed a study of the magnetic properties, the specific heat, the electrical resistivity and the hydrogen diffusion constant for a series of compositions \( \text{Zr}_{50}\text{Cu}_{40-x}\text{Al}_{10}\text{Pd}_x \) (\( x=0-7 \) at.%). The compounds are nonmagnetic, conducting alloys, where the Pauli spin susceptibility of the conduction electrons is the only source of paramagnetism. The low-temperature specific heat indicates an enhancement of the conduction-electron effective mass \( m^* \) below 5 K, suggesting that the \( \text{Zr}_{50}\text{Cu}_{40-x}\text{Al}_{10}\text{Pd}_x \) BGAs are not free-electron-like compounds. The electrical resistivities of the \( \text{Zr}_{50}\text{Cu}_{40-x}\text{Al}_{10}\text{Pd}_x \) BGAs amount to about 200 \( \mu \Omega \text{cm} \) and show a small, negative temperature coefficient with an increase from 300 K to 2 K of 4%. The hydrogen self-diffusion constant \( D \) in hydrogen-loaded samples shows classical over-barrier-hopping temperature dependence and is comparable with others such systems.