Abstract. We characterize mildly mixing group actions of a non-compact, locally compact, second countable group $G$ using orbit equivalence. We show an amenable action $\Phi$ of $G$ is mildly mixing if and only if $G$ is amenable and for any nonsingular ergodic $G$-action $\Psi$, the product $G$-action $\Phi \times \Psi$ is orbit equivalent to $\Psi$. We extend the result to the case of finite measure preserving non-invertible endomorphisms, i.e., when $G = \mathbf{N}$, and show that the theorem cannot be extended to include nonsingular mildly mixing endomorphisms.