The present study demonstrates the optimization of a heat pump for an application with a large temperature glide on the sink side and a smaller temperature glide on the source side. The study includes a numerical simulation of a heat pump cycle for binary mixtures based on a list of 14 natural refrigerants. This approach enables a match of the temperature glide of sink and source with the temperature of the working fluid during phase change and thus, a reduction of the exergy destruction due to heat transfer. The model was evaluated for four different boundary conditions. The exergy destruction due to heat transfer, which is solely caused by the fluid having a non-ideal temperature profile was quantified and an indicator describing the glide match was defined to analyze its influence on the performance. The results indicated, that a good glide match can contribute to an increased performance. The increase in performance was dependent on the boundary conditions and reached up to 20% for a simple cycle and up to 27% if the superheating can be avoided. The temperature glide match in the source was identified to have a higher influence on the performance than in the sink.