Distance-based topological invariants, namely the topological roundness index and the Wiener number, show a new and somehow unexpected symmetry between toroidal and Klein bottle polyhexes. In this case the bottles are closed in the anti-parallel way along the zigzag edge of the hexagonal lattice. We report here that our computations point out that both cubic graphs are topologically indistinguishable for certain combination of x,y sizes. This means that an *Escher's* ant walking on the Klein bottle is no longer able to distinguish it from a same-size Torus by measuring the chemical distances of a node from all the others. Among other effects, this new topological similarity does transfer the translation invariance, that is a typical feature of the graphenic Tori, to the Klein bottle lattices. This size-induced phase transition connecting Klein bottles and toroidal cubic graphs represents a relevant topological behavior with uncharted mathematical and physical consequences. The non-trivial influence of the chirality of the bottle will be also numerically investigated showing a radically different behavior of the armchair Klein Bottles.