Zentralblatt–MATH

Wong, P.C.; Koay, H.L.
Generalised free products of isomorphic potent groups. (English)
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A group G is said to be potent if to every nontrivial element x of G and positive integer n (dividing the order of x if this is finite) there corresponds a normal subgroup N of finite index of G such that xN has order precisely n in G/N. It is shown that certain generalized free products of isomorphic potent groups are potent. The main theorem is as follows. Let $A_1, ..., A_n$ be isomorphic torsion-free potent groups, and let $\psi_i : A_1 \to A_i$ be an isomorphism. Let $B_1 \leq A_1$ and $B_i = \psi_i(B_1)$. Let G be the free product of the A_i, with the B_i amalgamated under the isomorphisms $\psi_i\psi_j^{-1}$. If A_1 is B_1-separable, in the sense that B_1 is the intersection of the subgroups of finite index of A_1 that contain it, then G is potent.

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