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Abstract

The effects of ultrasonic melt treatment (UST) and solution treatment on the microstructure and mechanical properties of a low-density multicomponent $Al_{70}Mg_{10}Si_{10}Cu_5Zn_5$ alloy at room and elevated temperatures were investigated. The as-cast $Al_{70}Mg_{10}Si_{10}Cu_5Zn_5$ alloy was composed of an fcc Al solid-solution, coarse secondary phases (5–30 μm), fine Cu-containing precipitates (< 1 μm), and Zn clusters (< 20 nm). The UST significantly reduced the porosity