Fracture response of La61:4Al15:9Ni11:35Cu11:35 bulk metallic glass subjected to quasi-static compression loading

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ABSTRACT

Lanthanum based bulk metallic glass (BMG) is one of the BMG which have the excellent glass-formingability (GFA). In this empirical study, as-received La61:4Al15:9Ni11:35Cu11:35bulk metallic glasses were sub-jected to a quasi-static compression test. The results show the maximum modulus Young's of 191 GPa,the compressive force of 590 MPa and the compressive displacement at maximum force of 0.35 mm.The La-based BMG were comparable to the 304 stainless steels in term of the mechanical properties.The La-based BMG fracture response from the quasi-static compression test was documented. The frac-ture response under compressive loading is vital to understand the La-based BMG for the promising usedin lightweight alloy applications.

KEYWORDS: Metallic glass, Amorphous metal, Fracture response, La-based BMG

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