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論文

Bi系高温用Pbフリーはんだの開発

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Development of Bi-Based Pb-Free Solders for High-Temperature

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Abstract

Bi-based alloys were investigated for their potential to replace Pb-based solders for high-temperature applications. It is found that Bi–Ag, Bi–Sn and Bi–Zn alloys improve the mechanical properties of the solder, especially Bi–Zn alloy, which shows good workability for wire extrusion. In addition, Bi–Zn alloy has good wettability on Ag-plated substrates and prevents the surplus Bi–Ni reaction in the soldering process. As a result, Bi–Zn alloys with a solidus temperature of 255°C are proposed as Pb-free solders for high-temperature applications.

***Key Words*:** *Pb-Free Solder for High-Temperature, Bi-Based Alloys, Bi–Zn Alloys, Mechanical Properties, Solder Wire, Wettability to Ag-Plated Substrate*