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Interaction of copper-tin powders with gallium-indium eutectic alloy

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Abstract

Diffusive-hardening solders based on gallium don't contain lead. These alloys demonstrate specific rheological properties. Their synthesis includes, as a rule, mechanical mixing of such initial components as metallic powders (fillers) and liquid gallium alloys. Further the metallic pastes produced show irreversible phase transformations and form the solid alloy with complex composite structure. Here, we investigated the microstructure and some thermal properties of the diffusive-hardening alloys Cu-Ga-In-Sn. These studies were performed by the standard SEM, EDX and XRD methods and also using differential scanning calorimeter.