

## Energetic and kinetic evaluations conducted in Cu-3.34 at % Sn through differential scanning calorimetry

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Microcalorimetric enthalpy measurements associated with the different peaks appearing during linear heating of Cu-3.34 at % Sn were made in a 50% cold-rolled alloy. Unlike the situation in the deformed material, quenched and furnace-cooled alloys do not exhibit thermal events at any of the heating rates employed in the temperature range scanned. In the cold-rolled condition, from the energetic and kinetic analysis of the first exothermic peak, designated Stage 1, and of the endothermic peak, designated Stage 3, it was consistently inferred that they correspond, respectively, to the growth on dislocations of a metastable phase ?? and to its subsequent dissolution prior to recrystallization. Such inference was also supported by Vickers microhardness and yield-stress determinations. The calculated volume fraction for ?? after Stage 2 goes to completion, is about 0.02. A suitable expression previously developed for enthalpy release due to the pinning of solute atoms to partial dislocations