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A calorimetric analysis of the response to heating of EN AW-2014 alloy formed in the liquid, solid and semi-solid states

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Highlights

- CuAl_2 and its precursors precipitate in extruded alloy during a heating cycle.
- $\text{Cu}_2\text{Mg}_8\text{Si}_6\text{Al}_5$, is also noted in cast and thixoformed counterparts.
- Extruded EN AW-2014 alloy undergoes recrystallization between 500 °C and 550 °C.
- Faster cooling from hot extrusion facilitates age hardening.
- Solutionizing is required for age hardening in cast and thixo-formed alloys.

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