

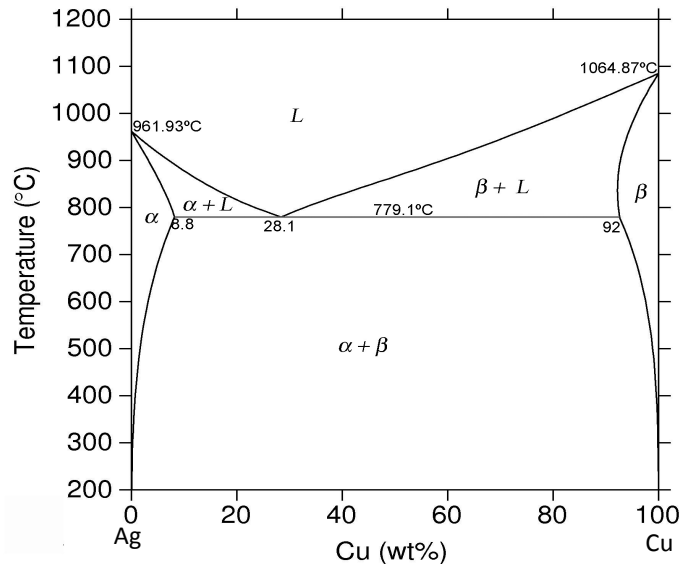


Materials Science and Engineering

Evaluation Test

TOPIC 3. PHASE DIAGRAMS

Important: Mark the right answer with a X. The correct answers will mark + 1 points while the incorrect answers will mark as -0.33 points. Non answered questions will not mark nor positively nor negatively. The resulting mark will not be smaller than 0 in any case. There is only one correct answer per question. Good luck!



For the Ag-Cu phase diagram given above:

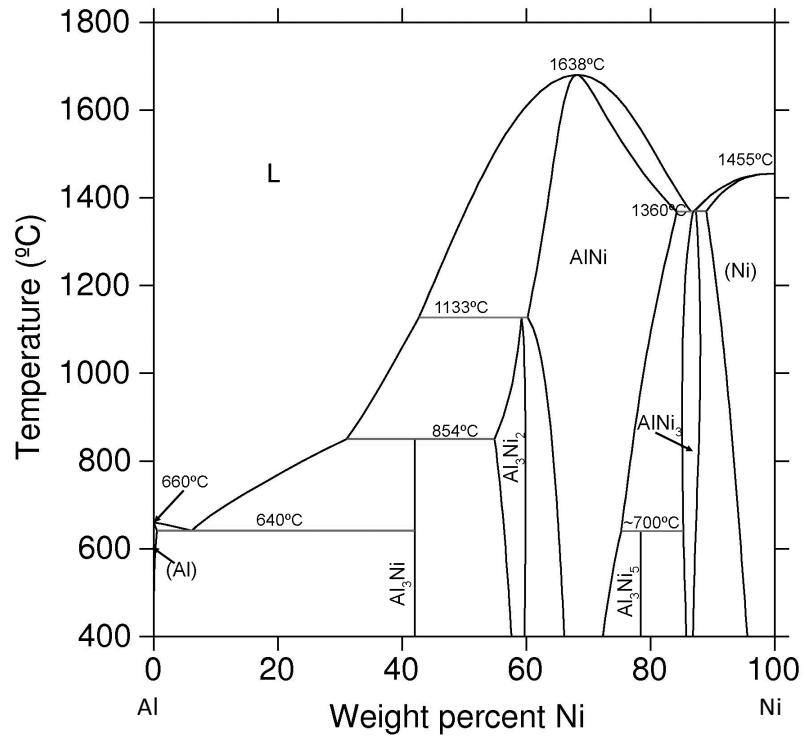
<input type="checkbox"/>	The liquidus temperature for an alloy with 20% Cu is 780°C.
<input type="checkbox"/>	The microconstituents present at room temperature for an alloy with 20% Cu are α' and eutectic microconstituent.
<input type="checkbox"/>	The phases present at room temperature for an alloy with 60% Cu are β' and pearlite.
<input type="checkbox"/>	The composition of the eutectic microconstituent for an alloy with 60% Cu is 92 wt% Cu.

For the Ag-Cu phase diagram given above:

<input type="checkbox"/>	The maximum solubility of Cu in Ag is 92 %.
<input type="checkbox"/>	An alloy that contains 25% Cu is called hypereutectic alloy.
<input type="checkbox"/>	The composition of the eutectic microconstituent at 779.1°C is 8.8% Cu.
<input type="checkbox"/>	The microconstituent that forms first during the solidification of an alloy with 60% Cu is β' .

The amount of α in the eutectic microconstituent for an alloy that has a 20% of Cu at a temperature of 779°C- ΔT , is about:

<input type="checkbox"/>	42 %
<input type="checkbox"/>	86 %
<input type="checkbox"/>	58 %
<input type="checkbox"/>	44 %



For the Al-Ni phase diagram above:	
<input type="checkbox"/>	AlNi is a phase with incongruent melting.
<input type="checkbox"/>	Al ₃ Ni is a phase with congruent melting.
<input type="checkbox"/>	The invariant reaction at 1133°C is a peritectic reaction.
<input type="checkbox"/>	The invariant reaction at 854°C is a peritectoid reaction.

The amount of eutectic microconstituent for an alloy that has 20% Ni at a temperature of 600°C, is about:	
<input type="checkbox"/>	63%
<input type="checkbox"/>	52%
<input type="checkbox"/>	27%
<input type="checkbox"/>	48%