

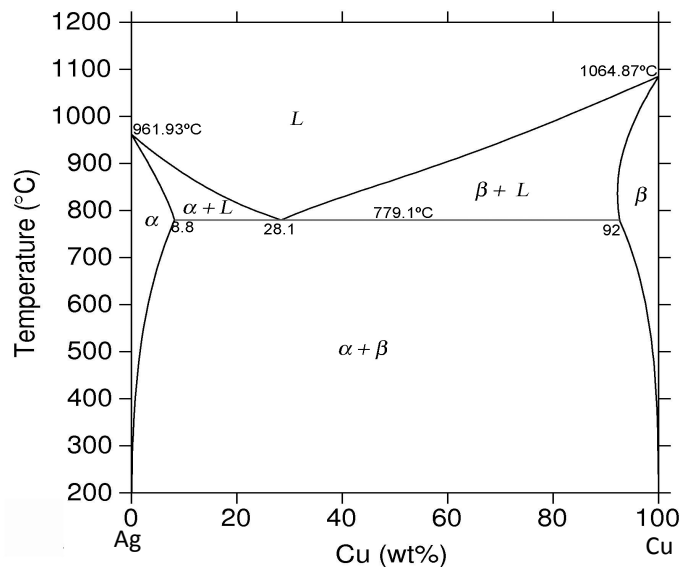


## Materials Science and Engineering

### 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:

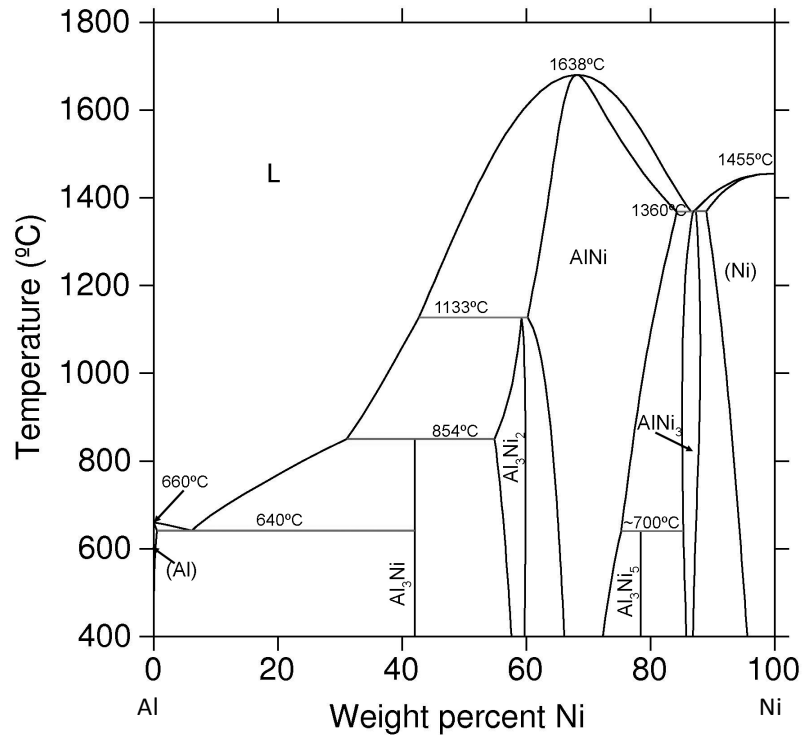
	The liquidus temperature for an alloy with 20% Cu is 780°C.
X	<b>The microconstituents present at room temperature for an alloy with 20% Cu are <math>\alpha'</math> and eutectic microconstituent.</b>
	The phases present at room temperature for an alloy with 60% Cu are $\beta'$ and pearlite.
	The composition of the eutectic microconstituent for an alloy with 60% Cu is 92 wt% Cu.

For the Ag-Cu phase diagram given above:

	The maximum solubility of Cu in Ag is 92 %.
	An alloy that contains 25% Cu is called hypereutectic alloy.
	The composition of the eutectic microconstituent at 779.1°C is 8.8% Cu.
X	<b>The microconstituent that forms first during the solidification of an alloy with 60% Cu is <math>\beta'</math>.</b>

The amount of  $\alpha$  in the eutectic microconstituent for an alloy that has a 20% of Cu at a temperature of 779°C- $\Delta T$ , is about:

	42 %
	86 %
	58 %
X	<b>44 %</b>



For the Al-Ni phase diagram above:	
	AlNi is a phase with incongruent melting.
	Al <sub>3</sub> Ni is a phase with congruent melting.
<b>X</b>	<b>The invariant reaction at 1133°C is a peritectic reaction.</b>
	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:	
<b>X</b>	<b>63%</b>
	52%
	27%
	48%