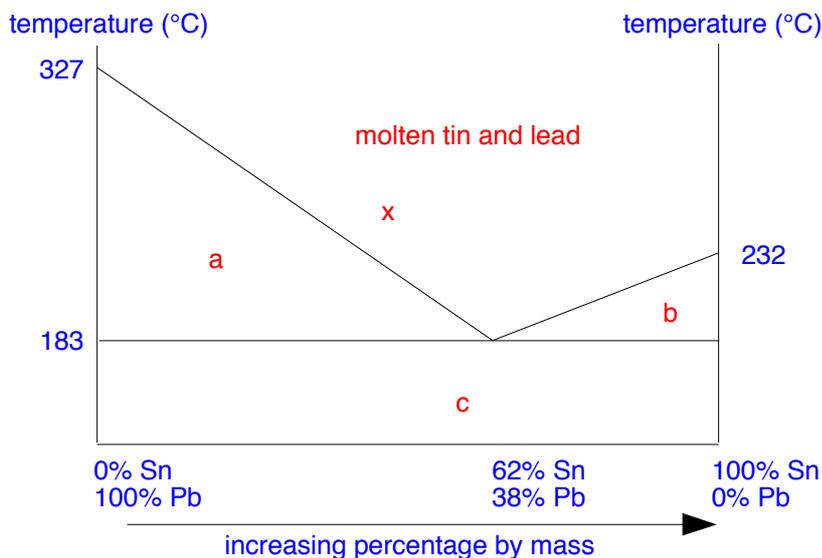


## Chemguide – questions

### SOLID-LIQUID PHASE DIAGRAMS - TIN AND LEAD

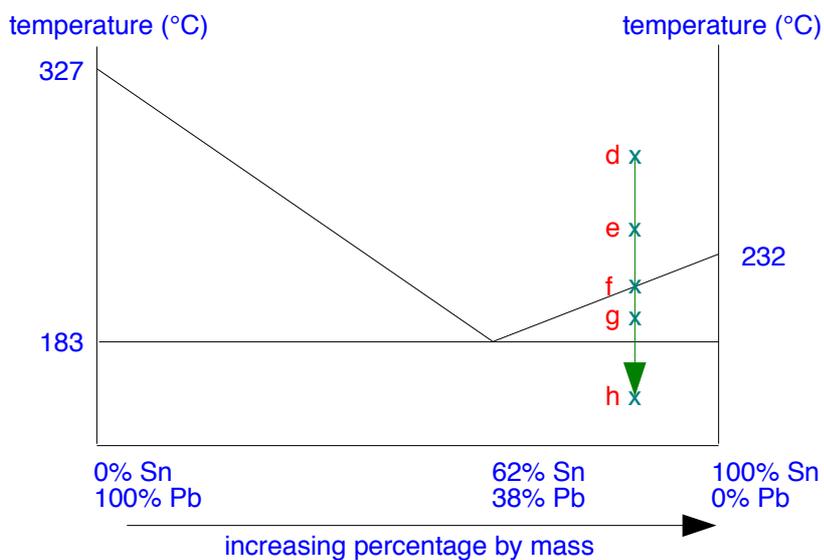
1. The following is a simplified phase diagram for tin and lead. If you had a mixture with a composition and temperature represented by point x, it would be present as a molten mixture of tin and lead.



- a) What would be present at points a, b and c?
- b) If you cooled a molten mixture of tin and lead containing 62% Sn and 38% Pb from 300°C to 150°C, sketch the cooling curve which you would expect to get.
- c) What name is given to the mixture of 62% Sn and 38% Pb?
- d) Sketch the cooling curve you would expect to get if you allowed the mixture represented by point x to cool to about 150°C. Mark on it any temperature you are certain about, and make a rough guess at any other temperature which might be important.
- e) Explain what is happening at each stage of your cooling curve in (d).
2. (See next page)

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2. Suppose you cooled a crucible containing a mixture of tin and lead with composition d.



- a) What would there be in the crucible at each of the points from d to h? (In general terms such as “a mixture of solid lead and liquid tin” - don't take that example too literally!)
- b) Explain how you would use the diagram to work out more precisely what was present at point g.