

STUFF AND SUBSTANCE: MELTING POINTS

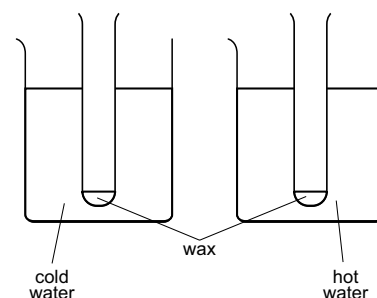
The melting point of a substance is the temperature at which a substance gets just hot enough to melt. You are going to investigate the melting point of wax, and will look at some other substances that melt at higher temperatures.

Task A Melting wax

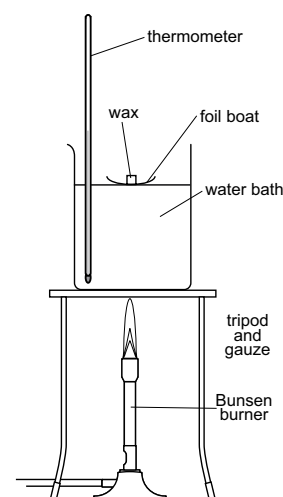
1. Your teacher will put tubes containing wax into hot and cold water. What happens to the wax? Why does this happen?
2. Can you think how you could find out how hot wax needs to be before it melts?

Task B Finding a melting point

3. Make your own water bath by half filling a 250 cm³ beaker with cold water from the kettle. Put the beaker on a tripod and gauze.
4. Put a piece of solid wax into a foil boat. Float the foil boat on the water.
5. Record the temperature of the water.
6. Heat the water bath with the Bunsen burner.
7. Watch the wax carefully, and turn off the Bunsen when it starts to melt. Note the temperature of the water. Does all the wax melt?
8. What is your estimate of the melting point of wax?
9. How could you make your results more accurate? Think about:
Does the size of the lump make any difference?
Are the wax and the water at the same temperature?
Is it better to heat the water quickly or slowly?
Where in the water do you want to know the temperature?
10. If you used a more accurate method, do you think your value for the melting point would be higher or lower than your first attempt?



The beaker may get hot and could scald. Liquid wax on the skin can solidify and cause burns. Wear eye protection.



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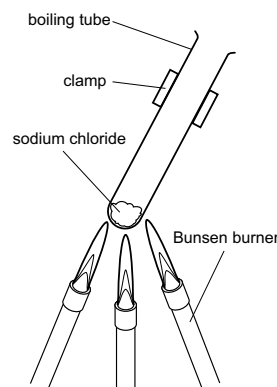
MELTING POINTS

Task C Melting sodium chloride

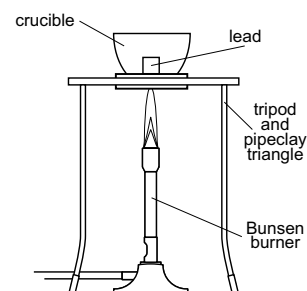
11. Do you think that salt (sodium chloride) melts? Your teacher will demonstrate an experiment to find out.
12. Put two or three large crystals of sodium chloride into a boiling tube, and clamp securely at an angle.
13. Set up three Bunsen burners, so that all of the flames overlap on the bottom of the boiling tube. Heat the tube with blue flames.
14. What can you see happening?
15. Why do you think we are using three Bunsen burners?
16. How can you tell that the sodium chloride has melted?



The equipment will get very hot and could cause burns. Wear eye protection.



The equipment will get very hot and could cause burns. Wear eye protection and thick gloves. Open the windows to provide ventilation.



Task D Melting lead

17. Do you think that lead will melt when heated? Your teacher will demonstrate an experiment to find out.
18. Set up a Bunsen burner, tripod and pipeclay triangle, and put a sample of lead into a crucible.
19. Using a blue Bunsen flame, heat the lead.
20. How can you tell that the lead has melted?
21. Once the lead has melted, turn off the Bunsen burner. Using tongs, pour the contents of the crucible onto a large flat piece of metal. Still using tongs, pick up the 'pancake'.
22. What do you observe? Why do you think this is happening?

Task E Comparing wax, sodium chloride and lead

23. Think about what happens when wax, sodium chloride and lead are heated. In what way are they similar? In what way are they different?