LATENT HEAT

ANSWER THE FOLLOWING QUESTIONS

1) When a substance melts it absorbs a certain amount of heat without increasing its temperature. Is this heat wasted? What is it used for?

2) Why does water vapor at 100°C burn more than liquid water at the same temperature?

SOLVE THE FOLLOWING EXERCISES*

3) How much energy would it take to heat 1.00 kg of ice at 0 °C to water at 15.0 °C? [Latent heat of fusion for ice is q_f = 0.335 J/Kg and specific heat of water is c_s = 4186 J/KgK]

4) Ice cubes are used to chill a soda with a mass m_{soda} = 0.3 kg at 15.0 °C. The ice is at 0 °C, and the total mass of the ice cubes is 0.02 kg. Assume that the soda is kept in a foam container so that heat loss can be ignored, and that the soda has the same specific heat as water. Find the final temperature when all ice has melted. [Use the same constants of the previous exercise]