specific heat of water

https://www.aplustopper.com/specific-heat-capacity-latent-heat-icse-solutions-class-10-physics/
https://goo.gl/8yMqvH
https://sites.google.com/site/aplustoppernotes/specific-heat-of-water
https://goo.gl/r7AVT1
http://cbsetuts.blogspot.in/2018/01/specific-heat-of-water.html
https://goo.gl/ZRS2HZ
https://goo.gl/5LWPs6
https://goo.gl/yRfuEs

Specific heat capacity

- Defined as the **energy needed to raise the temperature of 1 kg of substance by 1 K.**
- Example 3: 0.5 kg of water is heated from 10 °C to 100 °C. How much does its internal energy rise?
- Rise in temperature = 100 °C – 10 °C = 90 °C
- This is also a rise of 90 K (°C and K are the same size)
- $\Delta U = m \times c \times \Delta T$
- = 0.5 kg x 4200 J kg^{-1} K^{-1} x 90 K
- = **190 000 J.**

Measuring specific heat capacity

- An experiment can be done to find the specific heat capacity using an emersion heater.

Specific Latent Heat

- In Thermodynamics ! We saw that energy is needed to break inter-atomic attractions when a substance **melts** or **boils**.
- This energy is called **latent heat**.
- The temperature is constant during this change of state.
- The following equation is used to calculate energy needed for a change of state.

Heat transferred = mass x specific latent heat capacity

$$\Delta Q\ (J) = m\ (kg) \times L\ (J\ kg^{-1})$$

Specific latent heat, L is the energy needed to change the state of **1 kg** of the substance (without change in temperature).

Short Answers

Question 1: What is heat? What is the S. I. unit of heat?
Answer: Heat is a form of energy, which when absorbed by a body makes it hot and when extracted from a makes it cold. It is also defined as the total kinetic energy possessed by all the molecules of a body. The S. I. unit of heat is joule/kg kelvin.

Question 2: Define the term calorie. How is it related with joule (the SI unit of heat)?
Answer: One calorie is the heat required to raise the temperature of 1 g of water from 14.5°C to 15.5°C
1 Calorie = 4.2 joule.

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