# Homework

$m=100g$ of ice mixed with 1 liter of hot water in a thermally isolated cup. Wgat will be the final temperature of the content of the cup, if the initial temperature of water is $100^oC$ and initial temperature of ice is $-10^oC$ .

Remember that:
• Amount of heat needed to melt ice or vaporize water of mass $m$, is

$$\Delta Q = Lm$$

Here $L$ is called *specific latent heat* of melting or vaporization, respectively. For melting at $0^oC$, $L= 334kJ/kg$, for vaporization at $100^oC$, $L= 2265\ kJ/kg$.

• Amount of heat needed to increase temperature of a substance by amount $\Delta T$ , is

$$\Delta Q = Cm\ \Delta T$$

Here $m$ is mass and $C$ is called *specific heat capacity*.