

- 13** Thermal energy is supplied to 2.1 kg of ice at $-4.5\text{ }^{\circ}\text{C}$. All the ice becomes water at $96\text{ }^{\circ}\text{C}$. There is no heat loss to the surroundings.

Specific heat capacity of water = $4190\text{ J kg}^{-1}\text{ K}^{-1}$

Specific latent heat of vaporization of water = 2260 kJ kg^{-1}

Specific heat capacity of ice = $2108\text{ J kg}^{-1}\text{ K}^{-1}$

Specific latent heat of fusion of water = 334 kJ kg^{-1}

How much thermal energy is supplied to the ice?

A 721 kJ

B 865 kJ

C 1.55 MJ

D 1.57 MJ