

## Answer on Question #42677 - Chemistry - Physical Chemistry

### Question:

What quantity of heat energy is required to melt 25 moles of ice that is at 0 degrees celcius?

### Answer:

The change of enthalpy associated with melting a solid is often called the enthalpy of fusion, or heat of fusion, which we denote  $\Delta H_{\text{fus}}$ . The heat of fusion of ice is **6.01 kJ/mol**.

$$q = \vartheta \times \Delta H_{\text{fus}}$$

$\Delta H_{\text{fus}}$  – enthalpy of fusion, kJ/mol

q – heat required, kJ

$\vartheta$  – number of moles in the sample, mol.

$$q = 25 \times 6.01 = 150.25 \approx 150 \text{ kJ}$$

**Answer: 150 kJ**