Phase Changes

- Melting and freezing

$+333\frac{J}{g}$ $-333\frac{J}{g}$

$Q = m\Delta H^\circ_{fus}$

where $\Delta H^\circ_{fus} = 333\frac{J}{g}$

- Vaporization + Condensation

$+2260\frac{J}{g}$ $-2260\frac{J}{g}$

$Q = m\Delta H^\circ_{vap}$

where $\Delta H_{vap} = 2260\frac{J}{g}$

Example

How much energy is required to melt 27g of ice?

$Q = m\Delta H^\circ_{fus}$

$Q = (27g)\left(+333\frac{J}{g}\right)$

$Q = +8991\,J$

$Q = +9.0\times10^3\,J$

9.0×10^3 J of heat is required to melt 27g of ice.