

Heat of Fusion	Heat of Vaporization
<p>The energy required to convert one gram of a substance from a solid to a liquid at its melting point.</p>	<p>The energy required to convert one gram of a substance from a liquid to a vapor at its boiling point.</p>
$1 \text{ gram H}_2\text{O(s)} + 334 \text{ J} \rightarrow 1 \text{ gram H}_2\text{O(l)}$	$1 \text{ gram H}_2\text{O(l)} + 2260 \text{ J} \rightarrow 1 \text{ gram H}_2\text{O(g)}$
<p>The energy released when one gram of a substance is converted from liquid to solid at its freezing point.</p>	<p>The energy released when one gram of a substance condenses from a vapor to a liquid at its condensation point.</p>
$1 \text{ gram H}_2\text{O(l)} \rightarrow 1 \text{ gram H}_2\text{O(s)} + 334 \text{ J}$	$1 \text{ gram H}_2\text{O(g)} \rightarrow 1 \text{ gram H}_2\text{O(l)} + 2260 \text{ J}$
<p>Equation:</p>	<p>Equation:</p>
$Q = m\Delta H_{fus}$ <p><i>Q = heat in Joules</i> <i>m = mass in grams</i> $\Delta H_{fus} = 334 \text{ Joule/gram}$</p>	$Q = m\Delta H_{vap}$ <p><i>Q = heat in Joules</i> <i>m = mass in grams</i> $\Delta H_{vap} = 2260 \text{ Joule/gram}$</p>

Specific Heat	
<p>Specific Heat is the energy that must be added to raise the temperature of one gram of a substance by one Celsius degree AND Specific Heat is the energy that must be removed to lower the temperature of one gram of a substance by one Celsius degree</p>	
<p>Equation:</p> $Q = m(\Delta T)C_p$ <p><i>Q = heat in Joules</i> <i>m = mass in grams</i> $\Delta T = \text{Change in Temperature}$ $C_p = \text{Specific Heat in } \frac{J}{g \cdot ^\circ C}$</p>	<p>Specific Heat Values:</p> $\text{For liquid water, } C_p = 4.18 \frac{J}{g \cdot ^\circ C}$ $\text{For ice, } C_p = 2.05 \frac{J}{g \cdot ^\circ C}$ $\text{For steam, } C_p = 2.01 \frac{J}{g \cdot ^\circ C}$