



$$\Delta H = -q$$

↑
phase change

$$q = -q$$

Temp.
change

3. $n = 1 \text{ mol}$

$T_i = 20.0^\circ\text{C}$

$T_f = 50.0^\circ\text{C}$

$m = ?$

$$\Delta H_{\text{cond}} = -q$$

$$nH_{\text{cond}} = -mC\Delta T$$

$$(1 \text{ mol})(-58800 \frac{\text{J}}{\text{mol}}) = -m(4.19 \frac{\text{J}}{\text{g}^\circ\text{C}})(30.0^\circ\text{C})$$

4. Cu
 $n = 1 \text{ mol}$ (63.55g/mol)
 $T_i = 1083^\circ\text{C}$

H₂O
 $n = 5 \text{ mol}$
 $T_i = 20.0^\circ\text{C}$

$T_f = ?$

$$q_{\text{Cu}} = -q_{\text{H}_2\text{O}}$$

$$mC\Delta T = -mC\Delta T$$

$$(63.55 \text{g})(0.385 \frac{\text{J}}{\text{g}^\circ\text{C}})(T_f - 1083^\circ\text{C}) =$$

$$- (9010 \text{g})(4.19 \frac{\text{J}}{\text{g}^\circ\text{C}})(T_f - 20.0^\circ\text{C})$$

$$24.47 \frac{\text{J}}{^\circ\text{C}}(T_f - 1083^\circ\text{C}) = -377.5 \frac{\text{J}}{^\circ\text{C}}(T_f - 20.0^\circ\text{C})$$

$$24.47T_f - 26501.01 = -377.5T_f + 7550$$

$$24.47T_f + 377.5T_f = 7550 + 26501.01$$

$$T_f = 84.7^\circ\text{C}$$

Homework

Worksheet

Pre-Lab

Find the molar mass of the following substances:



www.indigo.com
Erlenmeyer Flasks

System	m_{system}	n_{system}	T_i (°C)	T_f (°C)