

cyclohexane C₆H₁₂

$$\Delta H_{fus} = 2.4 \text{ kJ/mol}$$

$$\Delta H_{vap} = 18.0 \text{ kJ/mol}$$

$$T_{mp} = 6^\circ\text{C}$$

$$T = \frac{\Delta H}{\Delta S}$$

$$T_{bp} = 81^\circ\text{C}$$

$$\Delta S_{fus} = \frac{\Delta H_{fus}}{T_{mp}}$$

$$\Delta S_{vap} = \frac{\Delta H_{vap}}{T_{bp}}$$

$$\Delta S_{fus} = \frac{2.4 \text{ kJ/mol}}{279 \text{ K}}$$

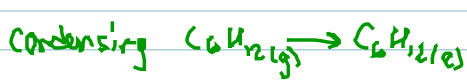
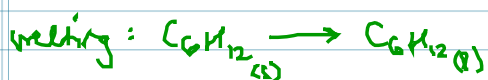
$$\Delta S_{vap} = \frac{18.0 \text{ kJ/mol}}{354 \text{ K}}$$

$$\Delta S_{fus} = 0.0086 \text{ kJ/mol}\cdot\text{K}$$

$$\Delta S_{vap} = 0.0508 \text{ kJ/mol}\cdot\text{K}$$

$$8.6 \text{ J/mol}\cdot\text{K}$$

$$50.8 \text{ J/mol}\cdot\text{K}$$



| | ΔH | ΔS | ΔG |
|------|------------|------------|------------|
| 0°C | + | + | + |
| 6°C | + | + | 0 |
| 60°C | + | + | - |

| | ΔH | ΔS | ΔG |
|-------|------------|------------|------------|
| 50°C | - | - | - |
| 81°C | - | - | 0 |
| 100°C | - | - | + |

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$$T_{\text{mp}} = 6^\circ\text{C}$$

$$T = \frac{\Delta H}{\Delta S}$$

$$T_{\text{bp}} = 81^\circ\text{C}$$

$$\Delta S_{\text{fus}} = \frac{\Delta H_{\text{fus}}}{T_{\text{mp}}}$$

$$\Delta S_{\text{vap}} = \frac{\Delta H_{\text{vap}}}{T_{\text{bp}}}$$

$$\Delta S_{\text{fus}} = \frac{2.4 \text{ kJ/mol}}{279 \text{ K}}$$

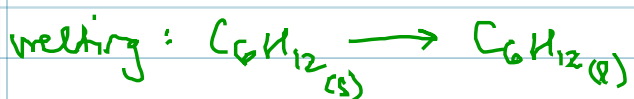
$$\Delta S_{\text{vap}} = \frac{18.0 \text{ kJ/mol}}{354 \text{ K}}$$

$$\Delta S_{\text{fus}} = 0.0086 \text{ kJ/mol}\cdot\text{K}$$

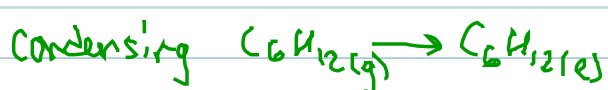
$$\Delta S_{\text{vap}} = 0.0508 \text{ kJ/mol}\cdot\text{K}$$

$$8.6 \text{ J/mol}\cdot\text{K}$$

$$50.8 \text{ J/mol}\cdot\text{K}$$



| | ΔH | ΔS | ΔG |
|------|------------|------------|------------|
| 0°C | + | + | + |
| 6°C | + | + | 0 |
| 60°C | + | + | - |



| | ΔH | ΔS | ΔG |
|-------|------------|------------|------------|
| 50°C | - | - | - |
| 81°C | - | - | 0 |
| 100°C | - | - | + |