

Answer on Question #82144, Chemistry/ Inorganic Chemistry

Calculate the heat required to vaporise 7.83 g of benzene at its normal boiling point.

Heat of vaporization (benzene) = 30.7 kJ/mol

Solution

$$M (C_6H_6) = 78.11 \text{ g/mol}$$

$$n = m/M$$

$$n = 7.83 \text{ g} / 78.11 \text{ g/mol} = 0.1 \text{ mol}$$

$$Q = \Delta H_{\text{vap}} \times n = 30.7 \text{ kJ/mol} \times 0.1 \text{ mol} = 3.07 \text{ kJ}$$

Answer: 3.07 kJ

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