

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

$M(\text{C}_6\text{H}_6) = 78.11 \text{ g/mol}$

$n = m / M$

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

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

Answer: 3.07 kJ

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