Question#70879 – Chemistry – General chemistry

Question: The heat of reaction for $2CO(g) + O_2(g) \rightarrow 2CO_2(g)$ is -566 kJ. How many kilojoules of heat are released when 16.6 grams of CO reacts with excess O_2? Would the answer be -168?

Solution:

$$n(CO) = \frac{m(CO)}{M(CO)} = \frac{16.6 \text{ g}}{28.01 \text{ g/mol}} = 0.593 \text{ mol}$$

$$\Delta H = \frac{0.593 \text{ mol}}{2 \text{ mol}} \times (-566 \text{kJ}) = -168 \text{ kJ}$$

Answer: -168 kJ.

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