

Answer on Question #78256, Chemistry / General Chemistry

Question:

For the equation $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + 803.1 \text{ kJ}$, how much heat will be released if 20 g of CH_4 reacts with sufficient O_2 ?

- A. 883 kJ
- B. 883 kJ/mol
- C. 1,004 kJ
- D. 1,004 kJ/mol
- E. 1.004 kJ

Solution:

Amount of CH_4 : $20 / 16.04 = 1.247 \text{ mol}$

Heat released: $803.1 \cdot 1.247 = 1001.4 \text{ kJ}$

Answer:

- C. 1,004 kJ