

Answer on Question #78042 - Chemistry - General Chemistry

Question:

For the equation $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O} + 803.1 \text{ kJ}$, 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:

$$n(\text{CH}_4) = m/M = 20/16 = 1.25 \text{ mol};$$

$$\Delta H' = 1.25 * \Delta H = 1,004 \text{ kJ}.$$

Answer: C. 1,004 kJ