

Answer on Question #75347, Chemistry / General Chemistry

What is the total mass of 0.5 moles of CH₄ gas?

Solution:

First of all, calculate the molar mass of methane. To do this, it is necessary to summarize the molar masses of all elements that make up methane:

$$M(\text{CH}_4) = M(\text{C}) + M(\text{H}_4) = 12 + 4 = 16 \text{ g/mol}$$

Now we know that 1 mole of methane weighs 16 grams. By the condition of the question, we need to know the weight of 0.5 mole of methane, accordingly it will be equal to:

$$0,5\text{mol} \times 16\text{g/mol} = 8\text{g}$$

The total mass of 0.5 mole of methane is 8 grams

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