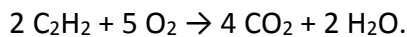**Answer on Question #54720 – Chemistry – General Chemistry**

Question:

The balanced equation for the reaction of acetylene, C_2H_2, and oxygen in an acetylene torch is

$2\ C_2H_2 + 5\ O_2 \rightarrow 4\ CO_2 + 2\ H_2O$.

In this reaction the number of grams of oxygen required to react with 0.13 g of acetylene is _____.

Answer:

Molar mass of acetylene is 26.04 g/mol. Molar mass of oxygen is 31.9988 g/mol.

From the balanced equation it follows:

2 mol *** 26.04** g/mol of acetylene react with **5** mol *** 31.9988** g/mol

then **0.13** g of acetylene react with **x** g of oxygen

$$x = 5 * 31.9988 * \frac{0.13}{2 * 26.04} = 0.3994 \approx 0.40g$$

Answer: 0.40 g of **oxygen** is required to react with 0.13 g of acetylene.