Answer on Question #57456 – Chemistry – General chemistry

Question:

What mass of o2 is needed to react completely with 5.33 g of c2h6.

Solution:

$2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$

$n(C_2H_6) = \frac{m(C_2H_6)}{M(C_2H_6)} = \frac{5.33\ g}{30\ g/mol} = 0.178\ mol$

$n(O_2) = \frac{7}{2} n(C_2H_6) = 0.623\ mol$

$m(O_2) = n(O_2) \cdot M(O_2) = 0.623\ mol \cdot 32\ g/mol = 19.94\ g$

Answer: 19.94 g O_2.