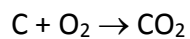# Answer on Question #81809 – Chemistry – General Chemistry

The reaction of 3.0 g of carbon with excess oxygen yield 6.5 g of carbon (IV) oxide. What is the percentage yield of this reaction

Solution:

$C + O_2 \rightarrow CO_2$

$n(C) = m(C) / M(C) = 3.0 \text{ g} / 12 \text{ g/mol} = 0.25 \text{ mol}$

$n(C) = n(CO_2) = 0.25 \text{ mol}$

$m(CO_2)_{theoretical} = n(CO_2) \times M(CO_2) = 0.25 \text{ mol} \times 44 \text{ g/mol} = 11.0 \text{ g}$

$$\eta = \frac{m(CO_2)_{practical}}{m(CO_2)_{theoretical}} \times 100\% = \frac{6.5g}{11.0g} \times 100\% = 59\%$$