

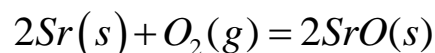
Answer on Question #67981 - Chemistry – General Chemistry

Task:

For the reaction, calculate how many grams of the product form when 24.4 g of Sr completely reacts. Assume that there is more than enough of the other reactant. $2\text{Sr}(s) + \text{O}_2(g) \rightarrow 2\text{SrO}(s)$

Solution:

Reaction equation:



By equation: $n(\text{Sr}) = n(\text{SrO})$;

$$M(\text{Sr}) = 87.62 \text{ g/mol};$$

$$M(\text{SrO}) = Ar(\text{Sr}) + Ar(\text{O}) = 87.62 + 15.9994 = 103.62 \text{ g/mol}.$$

Then,

$$\frac{m(\text{Sr})}{M(\text{Sr})} = \frac{m(\text{SrO})}{M(\text{SrO})};$$

$$m(\text{SrO}) = \frac{M(\text{SrO}) * m(\text{Sr})}{M(\text{Sr})} = \frac{103.62 * 24.4}{87.62} = 28.8556(\text{g})$$

Answer: $m(\text{SrO}) = 28.8556 \text{ g}$.

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