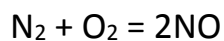# Answer on Question #63266, Chemistry / General Chemistry

1. If 22.5 grams of nitrogen and 25.7 grams of oxygen combine to form nitrogen monoxide, how many grams of nitrogen monoxide must form?

Solution:

$$N_2 + O_2 = 2NO$$

$n = \dfrac{m}{M}$

$n(N_2) = \dfrac{22.5}{28} = 0.804$ mol

$n(O_2) = \dfrac{25.7}{32} = 0.804$ mol

Nitrogen and oxygen react equimolar.

$n(NO) = 2 \times n(O_2) = 2 \times n(N_2) = 2 \times 0.804 = 1.608$ mol

$m(NO) = n \times M = 1.608$ mol $\times$ 30 g/mol = 48.24g.

Answer: mass of NO = 48.24g.