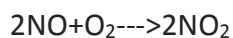


## Answer on Question #64984 - Chemistry – Other

### Task:

How many grams of nitrogen oxide two (NO) needed to win 20dm<sup>3</sup> nitrogen oxide four (NO<sub>2</sub>).



### Solution:

The equation of the chemical reaction:



By the equation:

$$\nu(\text{NO}) = \nu(\text{NO}_2);$$

$$\frac{m(\text{NO})}{M(\text{NO})} = \frac{V(\text{NO}_2)}{V_m};$$

The molar volume of an ideal gas ( $V_m$ ) at 1 atmosphere of pressure is 22.414 dm<sup>3</sup>/mol at 0 °C.

The molar mass of nitrogen oxide (II):  $M(\text{NO}) = 30.01 \text{ g} \cdot \text{mol}^{-1}$ .

Then,

$$m(\text{NO}) = \frac{V(\text{NO}_2)}{V_m} \times M(\text{NO}) = \frac{20 \times 30.01}{22.414} = 26.7779 \approx 26.78(\text{g})$$

**Answer:**  $m(\text{NO}) = 26.78 \text{ g}$ .

Answer provided by <https://www.AssignmentExpert.com>