

Answer on Question #61906 - Chemistry | General Chemistry

How many atoms of sulfur are in 1.8 mol of sulfur dioxide?

Solution

$$N_A = 6.022 \cdot 10^{23} \text{ (mol}^{-1}\text{)}$$

Molecule SO_2 contains 1 sulfur atom and 2 oxygen atoms.

$$n = \frac{N}{N_A}, \rightarrow N = n \cdot N_A \cdot \frac{1 \text{ atom S}}{1 \text{ molecule SO}_2} = 1.8 \text{ mol} \cdot 6.022 \cdot 10^{23} \text{ mol}^{-1} = 1.546 \cdot 10^{18} \text{ atoms S .}$$

Answer

$1.546 \cdot 10^{18}$ atoms S are in 1.8 mol SO_2 .