## Answer on Question #63436 - Chemistry – General Chemistry

If  $2.7 mol\ SO_2$  is placed in a reaction vessel with an excess of  $O_2$  gas, how many atoms of  $SO_3$  are produced?

$$2SO_2 + O_2 = 2SO_3$$

## Solution.

2SO<sub>2</sub> + O<sub>2</sub> = 2SO<sub>3</sub>
1) 2 mol SO<sub>2</sub> - 2 mol SO<sub>3</sub>
2.7 mol SO<sub>2</sub> - x mol SO<sub>3</sub>

$$x = 2.7 \text{ mol SO}_3$$

2) 
$$N(SO_3) = v(SO_3) \times N_a = 2.7 \times 6.02 \times 10^{23} = 16 \times 10^{23}$$

**Answer:**  $N(SO_3) = 16 \times 10^{23}$