

Math Diversion Problem 766

P. Reany

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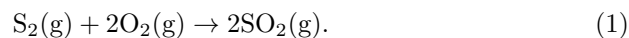
You either get control of your lusts and feelings of
entitlement, or they will get control of you.
— The Author

The material here is found at:

Source: http://www.csun.edu/~psk17793/G%20Chemistry/solving_stoichiometry_problems.htm
Title: Solving Stoichiometry Problems
Presenter: Patrick

1 The Problem

How many liters of SO_2 will be produced from 26.9 L O_2 ? The equation for the reaction is



Solution

To solve this problem, we need to make some simplifying assumptions. First, we'll model both gases as ideal. Second, we'll assume that both gases are at the same temperature and pressure. Now, all ideal gases have the same volume per mole, which in this case we'll designate as v .

As usual, we present a graphic for assistance.

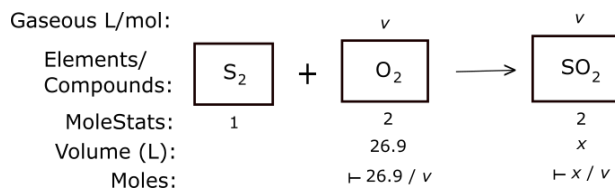


Figure 1. The SO_2 is collected at STP.

Next, we write down the mole proportion between columns 3 and 2:

$$\frac{2}{2} = \frac{\text{moles SO}_2}{\text{moles O}_2} = \frac{x/v}{26.9/v}. \quad (2)$$

On solving for x , we get

$$x = 26.9L. \quad (3)$$