

Answer on Question #70967, Chemistry / General Chemistry :

In one experiment, the burning of 0.312 g sulfur produced 0.623 g sulfur dioxide as the sole product of the reaction in second experiment, 0.842 g sulfur must have been burned in the second experiment?

Solution.

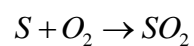
$$m(S) = 0.312\text{g}$$

$$m(SO_2) = 0.623\text{g}$$

$$m_1(S) = 0.842\text{g}$$

$$m_1(SO_2) = ?$$

Reaction SO_2 :



Draw up a proportion:

$$\frac{m(S)}{m_1(S)} = \frac{m(SO_2)}{m_1(SO_2)}$$

And:

$$\frac{0.312\text{g}}{0.842\text{g}} = \frac{0.623\text{g}}{m_1(SO_2)}$$

$$m_1(SO_2) = \frac{0.842 \cdot 0.623}{0.312}$$

$$m_1(SO_2) = 1.681\text{g}$$

Answer: $m_1(SO_2) = 1.681\text{g}$.