

Answer on Question#57244 - Chemistry - General Chemistry

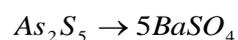
Question:

For a work sheet i got this question:

A 5.00 g sample of a crude sulfide ore in which all the sulfur was present as As_2S_5 was analyzed as follows: The sample was digested with concentrated HNO_3 until all the sulfur was converted to sulfuric acid. The sulfate was then completely precipitated as $BaSO_4$. The recovered $BaSO_4$ had a mass of 0.752 g. Calculate the percent of As_2S_5 in the crude ore.

Solution:

The transformation scheme with the balance of sulfur is shown below:



$$v_s = \frac{m_{BaSO_4}}{M_{BaSO_4}} = \frac{0.752g}{233.340g / mole} = 0.003mole$$

$$m_{As_2S_5} = \frac{v_s}{5} * M_{As_2S_5} = 0.186g$$

$$w_{As_2S_5} = \frac{0.186g}{5.000g} * 100\% = 3,721\%$$

Answer: 3,721%