Answer on question #68941, Chemistry / General Chemistry

Question   50gram ZnS burned in the presence of air and do some oxidation.the resultant mass is measured 44gram.then what is the ratio of ZnO and ZnS in resultant mixture?

Solution   Let us find amounts of Zn and S in moles. The relation of amounts is equal to

$$\frac{\nu(Zn)}{\nu(S)} = \frac{\mu(Zn)}{\mu(S)} = \frac{65.38}{32.07} \approx 2$$

Hence in those 50 g 33.6 g is Zn and 16.3 is S. After burning we have the same amount of Z, but less S. 6 g S is gone. The correspondent 12 g of Zn goes to ZnO. Hence, mass of ZnS is:

$$50 - 6 \cdot 3 = 32g$$

Then mass relation of ZnS and ZnO is

$$\frac{32}{44 - 32} = \frac{8}{3}$$

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