

Name: _____

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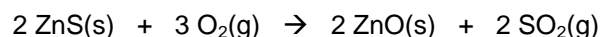
Chemistry: *Percent Yield*

Directions: Solve each of the following problems. Show your work, including proper units, to earn full credit.

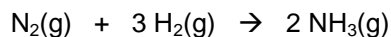
1. "Slaked lime," $\text{Ca}(\text{OH})_2$, is produced when water reacts with "quick lime," CaO . If you start with 2 400 g of quick lime, add excess water, and produce 2 060 g of slaked lime, what is the percent yield of the reaction?

2. Some underwater welding is done via the thermite reaction, in which rust (Fe_2O_3) reacts with aluminum to produce iron and aluminum oxide (Al_2O_3). In one such reaction, 258 g of aluminum and excess rust produced 464 g of iron. What was the percent yield of the reaction?

3. Use the balanced equation to find out how many liters of sulfur dioxide are actually produced at STP if 1.5×10^{27} molecules of zinc sulfide are reacted with excess oxygen and the percent yield is 75%.



4. The Haber process is the conversion of nitrogen and hydrogen at high pressure into ammonia, as follows:



If you must produce 700 g of ammonia, what mass of nitrogen should you use in the reaction, assuming that the percent yield of this reaction is 70%?

Answers: 1. 65%

2. 87%

3. 4.19×10^4 L SO_2

4. 824 g N_2