



a 34. If 25.0 g of each reactant were used in performing the following reaction, which would be the limiting reactant?

- (a)  $\text{PbO}_2$    (b)  $\text{H}_2\text{O}$    (c)  $\text{K}_2\text{SO}_4$    (d)  $\text{PbSO}_4$    (e)  $\text{Cr}_2(\text{SO}_4)_3$



b 35. If 20.0 g of each reactant were used in performing the following reaction, which would be the limiting reactant?

- (a)  $\text{MnO}_2$     (b)  $\text{KOH}$     (c)  $\text{O}_2$     (d)  $\text{Cl}_2$     (e)  $\text{KMnO}_4$

## Which would be the limiting reactant?

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EXAMPLE 3-24, P.111. Find the volume in liters and in milliliters of a 0.505 M NaOH solution required to react with 40.0 mL of 0.505 M H<sub>2</sub>SO<sub>4</sub> solution.



A common mistake is to use the dilution equation  $V_1M_1 = V_2M_2$  to solve problems involving reactions. Though it can sometimes give the correct answer, this is coincidental; for Example 3-24 it would give the wrong answer.

**Use on your own risk!**

**Answer: 80 mL NaOH**



b 71. What mass of calcium carbonate,  $\text{CaCO}_3$ , is required to react with 100. mL of 2.00 *M* HCl solution?

- (a) 5.00 g (b) 10.0 g (c) 15.0 g (d) 20.0 g (e) 23.0 g



a 72. What volume of 0.130 *M* HCl solution will just react with 0.424 gram of Ba(OH)<sub>2</sub>?

(a) 38.1 mL (b) 32.6 mL (c) 24.1 mL (d) 18.6 mL (e) 96.7 mL



e 73. If 40.0 mL of  $\text{H}_2\text{SO}_4$  solution reacts with 0.212 gram of  $\text{Na}_2\text{CO}_3$ , what is the molarity of the  $\text{H}_2\text{SO}_4$  solution?

- (a) 0.50 M (b) 0.10 M (c) 0.20 M (d) 0.40 M (e) 0.050 M

(a) 2.55 M   (b) 6.84 M   (c) 8.62 M   (d) 9.78 M   (e) 11.84 M

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a 59. Calculate the molarity of a solution that contains 70.0 g of  $\text{H}_2\text{SO}_4$  in 280. mL of solution.



(a) 75.0 M (b) 0.043 M (c) 33.1 M (d) 0.067 M (e) 0.0750 M

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e 67. Calculate the molarity of the resulting solution if enough water is added to 50.0 mL of 4.20 M NaCl solution to make a solution with a volume of 2.80 L.

**Chemistry is fun!**