Practice

What is the molarity of solution that has 50 grams of HCl and 2000 mL of water?

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Practice

$$M = \frac{mol}{L}$$

$$\frac{1.4\,mol}{2\,L} = 0.7M$$

$$2000\,mL \times \frac{1L}{1000\,mL} = 2\,L$$

$$50g\ HCl \times \frac{1\,mol\ HCl}{36g\ HCl} = 1.4\,mol$$

$$H = 1 \times 1 = 1$$
$$Cl = 1 \times 35 = 35$$
$$\overline{}\,36$$

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Practice

What is the new concentration of a solution if I add 200 mL to a 500 mL solution with a molarity of 0.75M.

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Practice

What is the new concentration of a solution if I add 200 mL to a 500 mL solution with a molarity of 0.75M.

$$M_1V_1 = M_2V_2$$

$$500mL \cdot 0.75M = 700mL \cdot M_2$$

$$M_2 = .54M$$

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Practice

How many grams of HCl are required to make 500 mL
of a 2.0 M solution?

Practice

How many grams of HCl are required to make 500 mL
of a 2.0 M solution?
$$X \frac{1L}{1000mL}$$

$$M = \frac{mol}{L}$$

$$\frac{2.0M}{1} = \frac{X\ mol}{.5L}$$

$$1\ mol\ HCl \times \frac{36g}{1mol} \boxed{= 36g\ HCl}$$

Which of the following would be soluble in H_2O?

1. How do you determine if a substance is soluble in another?

2. HCl

3. O_2

4. PH_3

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Which of the following would be soluble in H_2O? ___ polar
ionic — metal & nonmetal

1. How do you determine if a substance is soluble in another?   likes dissolve likes

2. HCl   H-C̈l̈: polar — dissolves in H_2O

3. O_2 :Ö=Ö: nonpolar—doesn't dissolve in H_2O

4. PH_3 4 —P̈-H polar—dissolves in H_2O
                |
                H

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Review

Describe what happens when you add 1 crystal to the following solutions:

saturated solution:

supersaturated solution:

unsaturated solution:

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Review

Describe what happens when you add 1 crystal to the following solutions:

saturated solution: crystal is unchanged

supersaturated solution: crystals grow (more crystals)

unsaturated solution: crystal dissolves

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