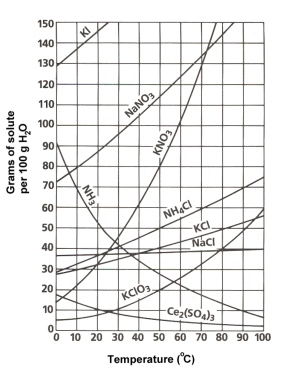
**Solutions and Equilibrium Remediation**

**Molarity and dilution questions**

Solve the following molarity/dilution problems. Show all work and include correct units!

|  |
| --- |
| 1. Find the molarity of a solution in which .58 moles of NaCl are dissolved in 2.5 L of solution. |
| 1. What is the original molarity of .50 L of a KMnO4 solution that is diluted to 2.00 L of a 0.500*M* solution? |
| 1. What volume of 0.25*M* solution can be made from .125 mol of KCl? |
| 1. Find the molarity of a 450 mL solution containing 13.7 g of ZnSO4. |
| 1. How many L of a .25 M CuCl2 solution can be made from 0.30 L of a 6 M CuCl2 solution? |

**[](http://www.saskschools.ca/curr_content/chem30_05/graphics/4_graphics/sol_curve.jpg)Use the solubility Curve to answer the following questions:**

1. a. At 90°C, you dissolved 10 g of KCl in 100. g of water. Is this solution saturated or unsaturated?

b. How do you know?

2. A mass of 100 g of NaNO3 is dissolved in 100 g of water at 80ºC.

a) Is the solution saturated or unsaturated?

3. What mass of solute will dissolve in **100 g** of water at the following temperatures?

* 1. KNO3 at 70°C \_\_\_\_\_\_\_\_\_\_\_\_
  2. NaCl at 100°C \_\_\_\_\_\_\_\_\_\_\_\_
  3. NH4Cl at 90°C \_\_\_\_\_\_\_\_\_\_\_\_

Equilibrium Practice:

Write an equilibrium expression for each of the following reactions.

1) 3O2 ⇌ 2O3

What happens to the equilibrium of this reaction if pressure is increased?

2) N2 + 3H2 ⇌ 2NH3

What happens to the equilibrium of this reaction if more nitrogen is added?

3) H2 + I2 ⇌ 2HI

What happens to the equilibrium of this reaction if Iodine is taken away?

4) PCl5 ⇌ PCl3 + Cl2