Name: _____ Date: _____

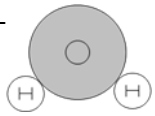
Notes: Solubility and the Rate of Dissolving of Solids

Define ***solute***: _____

Define ***solvent***: _____

Why is water such a great solvent? _____

Label the water molecule to the right with the correct partial charges.



What happens to ionic compounds when they dissolve? _____

_____

Define ***solubility***: _____

What do we call compounds that WILL dissolve in water? _____

What do we call compounds that WILL NOT dissolve in water? _____

Determine if the following compounds are soluble (S) or insoluble (I)

AgBr _____ Na_2CO_3 _____ $MgSO_4$ _____ $Ca(OH)_2$ _____

$Pb(NO_3)_2$ _____ Hg_2Cl_2 _____ K_3PO_4 _____ $Sr(C_2H_3O_2)_2$ _____

What is solubility directly related to? _____

What is a **solubility curve** for? _____

_____

1. What is the solubility of potassium nitrate at 90°C? _____
2. At what temperature will 120 g of sodium chlorate dissolve? _____
3. What is the solubility of sodium chloride at 30°C? _____
4. At what temperature will 110 g of potassium bromide dissolve? _____
5. At which temperature do KBr and KNO_3 have the same solubility? _____
6. According to the graph, at what temperature is 100g of water saturated with $NaClO_3$ if 140 grams of $NaClO_3$ are dissolved? _____

How does **increasing** the **temperature** affect the solubility of a solid? _____

_____

How does **decreasing** the **temperature** affect the solubility of a solid? _____

_____

How does **increasing** the **air pressure** affect the solubility of a solid? _____

_____

How does **decreasing** the **air pressure** affect the solubility of a solid? _____

_____

Define ***rate of dissolving***: _____

How does **increasing** the **temperature** affect rate of dissolving of a solid? _____

_____

How does **decreasing** the **temperature** affect rate of dissolving of a solid? _____

_____

How does **agitating/stirring** affect rate of dissolving? _____

Does stirring allow you to dissolve more solute? _____

How does the **surface area of the solute particles** affect the rate of dissolving?

_____

Why do small crystals dissolve faster? _____

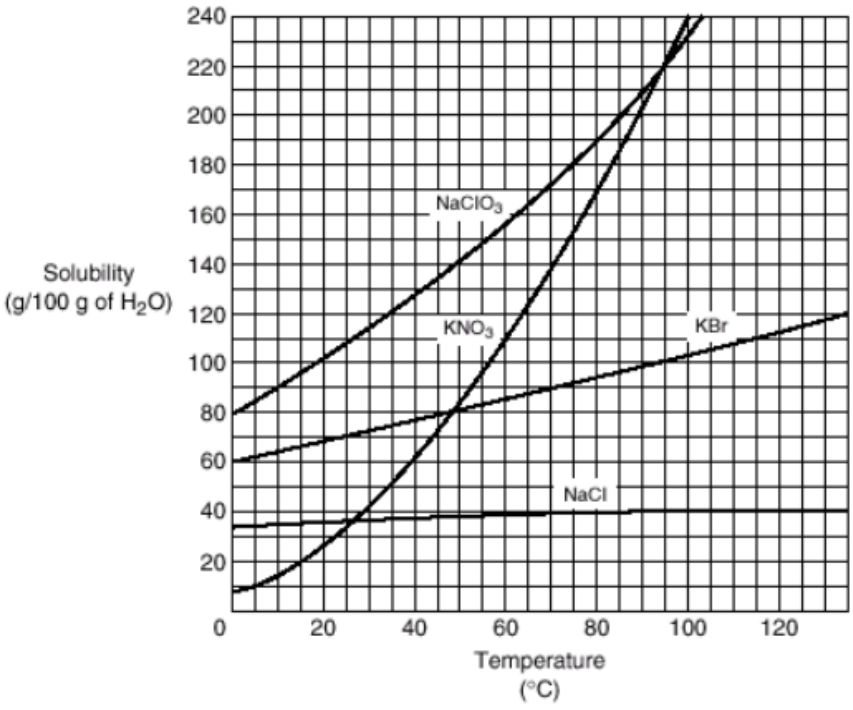
What can be used to crush larger crystals? _____

How does **increasing** the **air pressure** affect rate of dissolving of a solid? _____

_____

How does **decreasing** the **air pressure** affect rate of dissolving of a solid? _____

_____



Key:

$NaClO_3$ = sodium chlorate

KNO_3 = potassium nitrate

KBr = potassium bromide

NaCl = sodium chloride