Chem 100

AQUEOUS SOLUTIONS OF COMPOUNDS

TYPE OF COMPD	PARTICLES COMPOUND MADE OF	CLASS OF COMPOUND	CRITERIA FOR SOLUBILITY IN WATER	SOLUBILITY IN WATER	SOLUTE PARTICLES IN THE SOLUTION DUE TO DISSOCIATION UPON DISSOLVING	SOLUTE PARTICLES (MOLECULES) IN SOLUTION UNDERGO IONIZATION REACTION WITH WATER	COMPOUND DESCRIPTION	SOLUTE PARTICLES PRESENT IN SOLUTION	STRONG, WEAK, OR NON-ELECTRO-LYTE
IONIC	IONS	SALT	Contains: Li^+, Na^+, K^+, NH_4^+, NO_3^-, $C_2H_3O_2^-$ Cl^-, Br^-, I^- (with exceptions) SO_4^{2-} (with exceptions)	Soluble	ions	___	Soluble Salt	ions only	
			All the rest of the salts	Insoluble	___	___	Insoluble Salt	___	
		BASE (Metal Hydroxide)	Cation is from Group IA or is Ca^{2+}, Sr^{2+}, Ba^{2+}	Soluble	ions	___	Strong Base (soluble metal hydroxide)	ions only	
			All the rest of the metal hydroxides	Insoluble	___	___	Insoluble Metal Hydroxide	___	
MOLECULAR	MOLECULES	COVALENT	Polar	Soluble	molecules	NH_3 (NH_4OH) yes (very little)	Weak Base (NH_4OH)	molecules (plus a few ions)	
						all the rest - no	Polar Covalent	molecules only	
			Nonpolar	Insoluble	___	___	Nonpolar Covalent	___	
		ACID	Polar (all acids are polar)	Soluble	molecules	yes (100%)	HCl, HBr, HI, Strong Acid HNO_3, H_2SO_4, $HClO_4$	ions only	
						yes (very little)	Weak Acid	molecules (plus a few ions)	