

Electrolytes Chemistry 110

1) Indicate which of the following compounds are **soluble salts** by placing an "X" in the blank space that the right.

ferrous hydroxide_____	ammonium bromate___ X ___
sodium dihydrogen phosphate___ X ___	potassium cyanide___ X ___
lithium sulfate___ X ___	barium phosphate_____
nitrous acid_____	aqueous ammonia_____
manganese (II) acetate___ X ___	C ₂ H ₆ O_____
silver chloride_____	sodium carbonate___ X ___
zinc carbonate_____	cobalt (II) sulfite_____

2) Circle those compounds which are weak acids in water

HI HC₆H₅O₂HNO₂ H₂SO₄ HF H₂S HClO

3) Circle those compounds which are soluble hydroxides in water

Mg(OH)₂ LiOH Al(OH)₃ KOH Co(OH)₂ Ca(OH)₂

4) List the chemical formulas of the following compounds that are **strong electrolytes**

potassium sulfate	nitrous acid	barium phosphate
hydrofluoric acid	nitric acid	zinc chloride
lead (II) acetate	aqueous ammonia	C ₁₂ H ₂₂ O ₁₁ (aq)
sodium carbonate	CH ₃ OH(aq)	ammonium chlorate
dichromic acid	lithium cyanide	potassium hydrogen phosphate

K₂SO₄, Pb(C₂H₃O₂)₂, Na₂CO₃, HNO₃, LiCN, NH₄ClO₃, K₂HPO₄, ZnCl₂

5) List the chemical formulas for the compounds from question 4 that are **weak electrolytes**

HF, H₂Cr₂O₇, HNO₂, NH₃(aq)

6) List the chemical formulas for the compounds from question 4 that are **nonelectrolytes**

CH₃OH, Ba₃(PO₄)₂, C₁₂H₂₂O₁₁

7) Indicate which are the most abundant particle, ions or molecules for aqueous solutions of the following compounds.

Write the predominant species in the space at the right.

	<u>molecules</u>	<u>ions</u>	Solution Inventory (<u>formulas of ions</u>)
magnesium acetate	_____	___X___	$Mg^{2+}(aq) + 2C_2H_3O_2^-(aq)$
$C_2H_6O(aq)$	___X___	_____	$C_2H_6O(aq)$
potassium iodide	_____	___X___	$K^+(aq) + I^-(aq)$
sodium hydroxide	_____	___X___	$Na^+(aq) + OH^-(aq)$
acetic acid	___X___	_____	$HC_2H_3O_2(aq)$
ammonia	___X___	_____	$NH_3(aq)$
lithium sulfide	_____	___X___	$2Li^+(aq) + S^{2-}(aq)$
nickel (III) nitrate	_____	___X___	$Ni^{3+}(aq) + 3NO_3^-(aq)$
$HCHO_2(aq)$	___X___	_____	$HCHO_2(aq)$
ammonium sulfate	_____	___X___	$2NH_4^+(aq) + SO_4^{2-}(aq)$
lithium oxalate	_____	___X___	$2Li^+(aq) + C_2O_4^{2-}(aq)$
perchloric acid	_____	___X___	$H^+(aq) + ClO_4^-(aq)$