**Honors Chemistry II: Solubility Rules**

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| **MAINLY WATER SOLUBLE** | |
| **NO3-1** | All nitrates are soluble |
| **CH3COO-1 or C2H3O2-1** | All acetates are soluble EXCEPT AgC2H3O2 |
| **ClO3-1** | All chlorates are soluble |
| **Cl-1** | All chlorides are soluble EXCEPT AgCl, Hg2Cl2, PbCl2 |
| **Br-1** | All bromides are soluble EXCEPT AgBr, PbBr2, HgBr2, Hg2Br2 |
| **I-1** | All iodides soluble EXCEPT AgI, Hg2I2, HgI2, and PbI2 |
| **SO4-2** | All sulfates are soluble EXCEPT BaSO4, PbSO4, Hg2SO4, CaSO4, Ag2SO4, and SrSO4 |
| **Alkali Metal Cations**  **(Grp IA & NH4+1)** | All are soluble |
| **H+1** | All common inorganic acids and low molecular mass organic acids are soluble (ex. HCl, H2SO4, HClO4, HClO3, HI, HBr, HNO3) |
| **MAINLY WATER INSOLUBLE** | |
| **CO3-2** | All carbonates are insoluble EXCEPT those of IA elements and NH4+ |
| **CrO4-2** | All chromates are insoluble EXCEPT those of IA elements, NH4+, CaCrO4, and SrCrO4 |
| **OH-** | All hydroxides are insoluble EXCEPT those of IA elements, NH4+, Ba(OH)2, Sr(OH)2, and Ca(OH)2 |
| **PO4-3** | All phosphates are insoluble EXCEPT those of IA elements and NH4+ |
| **SO3-2** | All sulfites are insoluble EXCEPT those of IA elements and NH4+ |
| **S-2** | All sulfides are insoluble EXCEPT those of IA and IIA elements and NH4+ |

**STUFF YOU HAVE TO MEMORIZE FOR AP EXAM**

**(I would try to learn most of these on this page because it will save you time)**

* **All nitrates are always soluble**
* **All sodium, potassium, and ammonium ions are always soluble**