Solubility Rules Made Easy

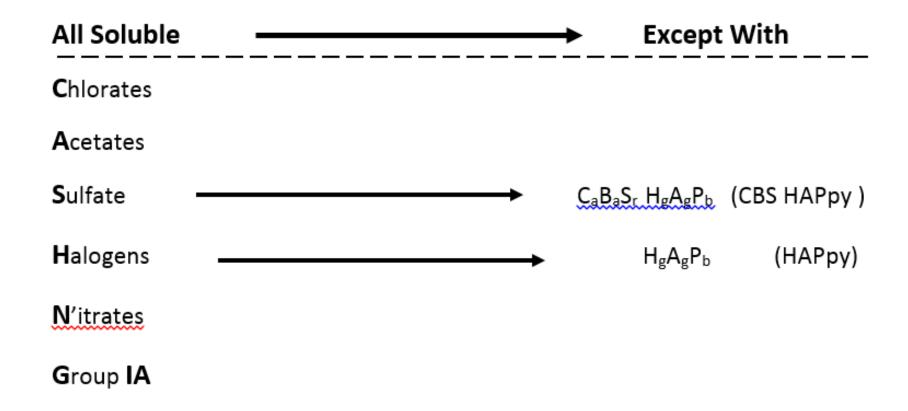
CASH N' GIA

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Directions on following slides



The acronym, "CASH N' GIA" reminds you of substances in the first column that <u>are soluble</u>:

```
\mathbb{C} ----- for Chlorates (ClO_3^{-1})
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$$\mathbf{A}$$
 ----- for Acetates ($C_2H_3O_2^{-1}$)

S ----- for Sulfates (
$$SO_4^{-2}$$
)

$$N'$$
----- for Nitrates (NO_3^{-1})

All of these are soluble with the **exceptions** on the next slide

Exceptions for solubility are in the second column, with the "CBS" and "HAPpy":

```
C ---- for Calcium (Ca)
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B ----- for Barium (Ba)

S ----- for Strontium (Sr)

H ----- for mercury (Hg⁺²)

 $A ----- for silver (Ag^+)$

 \mathbf{P} ---- for lead (\mathbf{Pb}^{+2})

All of these are **insoluble** with Sulfates

These 3 are **insoluble** with Halogens

Click to advance slides

OR

Simple Solubility Rules, bullet points, just memorize:

- Nitrates (NO₃⁻¹) salts are soluble
- Alkali (group IA salts and NH₄⁻) are soluble.
- Cl⁻, Br⁻, and I⁻ salts are soluble (NOT Ag⁺, Pb²⁺, Hg²⁺)
- Sulfates salts are soluble (NOT BaSO₄, PbSO₄, HgSO₄, CaSO₄)

• OH⁻ salts are only slightly soluble (NaOH, KOH are soluble,

 $Ba(OH)_2$, $Ca(OH)_2$ are marginally soluble)

• S²⁻, CO₃²⁻, CrO₄²⁻, PO₄³⁻ salts are insoluble

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(Bolded substances are <u>not</u> on CASH N' GIA)