

Flame Tests:



Lithium (Red)



Sodium (Yellow)



Calcium (Orange/Red)



Magnesium (White)



Strontium (Red)

Gases:



Copper (Green/Blue)



$\text{Cl}_{2(g)}$ ,  $\text{Br}_{2(g)}$ ,  $\text{I}_{2(g)}$



Potassium (Pink/Purple)

## Solutions/Solids:

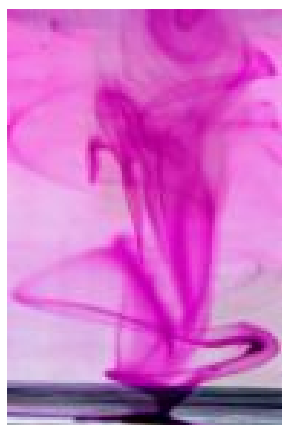
The solids in water will give the solution the color of the solid!



$\text{Co}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Ni}^{2+}$

Cobalt can be all colors.

Nickel always green.

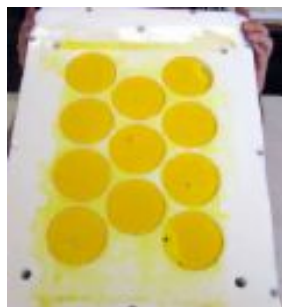


Permanganate ion  
( $\text{MnO}_4^{-1}$  with Mn in  
+8 oxidation state)

\*\*but  $\text{Mn}^{2+}$  is clear.



Dichromate ion  
( $\text{Cr}_2\text{O}_7^{2-}$  with Cr in  
+6 oxidation state)



Chromate ion  
( $\text{CrO}_4^{2-}$  with Cr in  
+6 oxidation state)



$\text{Cr}_2\text{O}_3$  solid  
(Cr in +3  
oxidation state)



$\text{CrO}_3$  solid  
(Cr in +6 oxidation  
state)



$\text{FeS}$  solid  
(iron in +2 oxidation  
state)



$\text{Zn}^{2+}$  aqueous and  
clear!



$\text{CuSO}_{4(\text{aq})}$   
(like in hydrate lab)



$\text{CuCl}_2$  solid

\*\*Copper ions blue  
or green.



$\text{AgCl}_{(s)}$



$\text{BaCO}_{3(s)}$



$\text{AgI}_{(s)}$

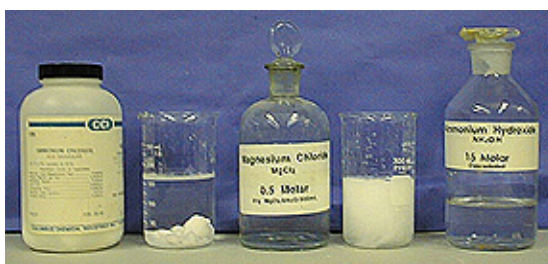
\*yellow like  $\text{PbI}_2$   
from  $K_{sp}$  lab.



$\text{BaSO}_{4(s)}$



$\text{Ag}_2\text{S}_{(s)}$



↑  
 $\text{Mg}(\text{OH})_{2(s)}$



$\text{Ag}_2\text{CO}_{3(s)}$



$\text{PbI}_{2(s)}$   
( $K_{sp}$  lab)



\*Remember the flask with acid and phenolphthalein is clear, as base is added it turns pink!!!! (It's pink when basic.)



$\text{PbCl}_{2(s)}$