

Name: _____

Partner: _____

Date: _____

Experiment 16D: Solubility Trends and Precipitate Formation

PREDICT: Use the Solubility Table to predict which solutions will and will not form a precipitate. In the box write "ppt" for precipitate and "-" for no precipitate.

Solution	NaNO ₃ NO ₃ ⁻	NaCl Cl ⁻	Na ₂ CO ₃ CO ₃ ²⁻	NaOH OH ⁻	Na ₂ SO ₄ SO ₄ ²⁻
Co(NO ₃) ₂ Co ²⁺					
Fe(NO ₃) ₃ Fe ³⁺					
Ni(NO ₃) ₂ Ni ²⁺					
Cu(NO ₃) ₂ Cu ²⁺					

OBSERVE: Carry out the reactions. Put **3 drops** of each solution in a well using the spot plate. Work across a row. For example:

3 drops of Co²⁺ + 3 drops of NO₃⁻
 3 drops of Co²⁺ + 3 drops of Cl⁻
 3 drops of Co²⁺ + 3 drops of CO₃²⁻
 etc...

Observe the reactions and record: colour of ppt and the amount (heavy or light)

Wash your spot plate and work across the next row. 3 drops of Fe³⁺ + 3 drops of NO₃⁻
 3 drops of Fe³⁺ + 3 drops of Cl⁻
 etc...

Solution	NaNO ₃ NO ₃ ⁻	NaCl Cl ⁻	Na ₂ CO ₃ CO ₃ ²⁻	NaOH OH ⁻	Na ₂ SO ₄ SO ₄ ²⁻
Co(NO ₃) ₂ Co ²⁺					
Fe(NO ₃) ₃ Fe ³⁺					
Ni(NO ₃) ₂ Ni ²⁺					
Cu(NO ₃) ₂ Cu ²⁺					

Questions:

1. Write equations for _____

- a. balanced formula equation (include ALL states)
- b. complete ionic equation (make sure you include (s) state for ppt, (aq) can be omitted)
- c. net ionic equation (include (s) state for ppt)

If a reaction does not form a precipitate, then write NONE for the net ionic equation.

_____ and NaNO_3

balanced: _____

complete ionic: _____

net ionic: _____

_____ and NaCl

balanced: _____

complete ionic: _____

net ionic: _____

_____ and Na_2CO_3

balanced: _____

complete ionic: _____

net ionic: _____

_____ and NaOH

balanced: _____

complete ionic: _____

net ionic: _____

_____ and Na_2SO_4

balanced: _____

complete ionic: _____

net ionic: _____