

Name: _____ Date: _____

CHEMISTRY **CHEMICAL REACTIONS LAB #2**

Go to the website https://javalab.org/en/precipitation_reaction_en/

- You will mix dissolved ionic compounds together with an expected double replacement reaction. Only some of the mixtures will react. Some of the mixtures will not react.
- Identify the product ionic compound that forms the insoluble precipitate (the solid that flocks out of solution).
- Identify the spectator ions—the ions that remain dissolved and inert after the other compound precipitates.

Instructions

1. Follow the recipe. Add the compounds and the correct number of molecules to the beaker. The number in parentheses () is the number of molecules to add.
2. Watch the mixture for about 1-2 minutes. The ions (cations and anions) will disperse in the water and move randomly. Enough time must pass for the ions to bump repeatedly into other ions.
3. Column 1: If NO REACTION happens, choose “NO”. If a chemical reaction happens, choose “YES”.
4. Column 2: If NO REACTION happens, choose “NONE”. If a chemical reaction happens, choose the solid product (the precipitate) formed during the reaction. A precipitate is a solid ionic compound that forms during a double replacement reaction.
5. Column 3: If NO REACTION happens, choose “NONE”. If a chemical reaction happens, choose the spectator ions that remain dissolved in water.
6. Use RESET button to clear the beaker. Add the next recipe.

REACTANTS		Reaction	Precipitate Chem Formula	Spectator Ions
(6) Na ₂ S	(6) BaCl ₂			
(6) Na ₂ S	(6) Ca(NO ₃) ₂			
(6) Na ₂ S	(6) KI			
(6) Na ₂ S	(6) AgNO ₃			
(6) Na ₂ S	(6) Pb(NO ₃) ₂			
(6) BaCl ₂	(6) KI			

Reactants		Reaction	Precipitate Chem Formula	Spectator Ions
(6) BaCl ₂	(6) Na ₂ SO ₄			
(6) BaCl ₂	(6) Na ₂ CO ₃			
(6) BaCl ₂	(6) AgNO ₃			
(6) Ca(NO ₃) ₂	(6) KI			
(6) Ca(NO ₃) ₂	(6) K ₂ SO ₄			
(6) Ca(NO ₃) ₂	(6) Na ₂ CO ₃			
(6) Pb(NO ₃) ₂	(6) BaCl ₂			
(6) Pb(NO ₃) ₂	6) Na ₂ CO ₃			
(6) Pb(NO ₃) ₂	(6) K ₂ SO ₄			
(6) Pb(NO ₃) ₂	(6) KI			
(6) AgNO ₃	(6) NaCl			
(6) AgNO ₃	(6) CaCl ₂			
(6) AgNO ₃	(6) Na ₂ SO ₄			
(6) AgNO ₃	(6) Na ₂ CO ₃			
(6) AgNO ₃	(6) KI			

Look at the table you completed above, which statements are true and which statements are false. Are the compounds water soluble (dissolve) or not water soluble (form a solid)?

	Ionic compounds with alkali metals + halogen elements
	Ionic compounds with alkali metals + sulfide
	Ionic compounds with alkali metals + nitrate
	Ionic compounds with alkali metals + sulfate
	Ionic compounds with alkali metals + carbonate
	Ionic compounds with alkaline earth metals + halogen elements
	Ionic compounds with alkaline earth metals + sulfide
	Ionic compounds with alkaline earth metals + nitrate
	Ionic compounds with alkaline earth metals + sulfate
	Ionic compounds with alkaline earth metals + carbonate
	Ionic compounds with lead + halogen elements
	Ionic compound with lead + sulfide
	Ionic compound with lead + nitrate
	Ionic compound with lead + sulfate
	Ionic compound with lead + carbonate
	Ionic compound with silver + halogen elements
	Ionic compound with silver + sulfide
	Ionic compound with silver + nitrate
	Ionic compound with silver + sulfate
	Ionic compound with silver + carbonate