What forms a precipitate?

Solubility Rules you are responsible for.	Soluble no precipitate	Insoluble forms precipitate	2+
Acetates (OAc ¹⁻ or CH3COO ¹⁻) Nitrates (NO ₃ ¹⁻)	Always	Never	Hg ₂ ²⁺
Ammonium (NH4 ¹⁺) Alkali metal (Na ¹⁺ , Li ¹⁺ , K ¹⁺) Acids (the ones we learned)	Always	Never	mercury (I)
Carbonates (CO ₃ ²⁻) Phosphates (PO ₄ ³⁻)	Never	Always	2+ Hg ²⁺
Halogens (Cl ¹⁻ , Br ¹⁻ , I ¹⁻ , F ¹⁻)	Usually	Except: Ag+, Hg ₂ ²⁺ or Pb ²⁺	mercury (II)
Sulfates (SO4 ²⁻)	Usually	Hg_2^{2+} or Pb ²⁺ Sr ²⁺ , Ba ²⁺	
Sulfides (S ²⁻) Hydroxy Salts (OH ¹⁻)	Except: Sr^{2+} , Ba^{2+} , Ca^{2+}	Usually	
	you are responsible for. Acetates (OAc ^{1.} or CH3COO ^{1.}) Nitrates (NO ₃ ^{1.}) Ammonium (NH4 ^{1.}) Alkali metal (Na ^{1.} , Li ^{1.} , K ^{1.}) Acids (the ones we learned) Carbonates (CO ₃ ^{2.}) Phosphates (PO4 ^{3.}) Halogens (Cl ^{1.} , Br ^{1.} , I ^{1.} , F ^{1.}) Sulfates (SO4 ^{2.})	you are responsible for.SOLUDICE no precipitateAcetates (OAc1- or CH3COO1-) Nitrates (NO31-)AlwaysAmmonium (NH41+) Alkali metal (Na1+, Li1+, K1+) Acids (the ones we learned)AlwaysCarbonates (CO32-) Phosphates (PO43-)NeverHalogens (Cl1-, Br1-, I1-, F1-)UsuallySulfates (SO42-) Hydroxy Salts (OH1-)Except: Sr2+, Ba2+,	you are responsible for.SOLUDICE no precipitateIIISOLUDICE forms precipitateAccetates (Oc^{1-} or $CH3COO^{1-}$) Nitrates (NO_3^{1-})AlwaysNeverAmmonium (NH_4^{1+}) Alkali metal (Na^{1+}, Li^{1+}, K^{1+}) Alkals (the ones we learned)AlwaysNeverCarbonates (CO_3^{2-}) Phosphates (PO_4^{3-})NeverAlwaysHalogens ($Cl^{1-}, Br^{1-}, l^{1-}, F^{1-}$)UsuallyExcept: Ag^+, Hg_2^{2+} or Pb^{2+} Sulfates (SO_4^{2-})UsuallyHg_2^{2+} or Pb^{2+} Sr^{2+}, Ba^{2+}

If you remember 1-3 you'll be good 85% of the time If you remember 1-3 and 4 you'll be good 95% Remembering the exceptions isn't that hard

there's only six ions that cause exceptions
and lead, mercury, and silver are the most commonly encountered ones.