

(L90) Precipitation Rxns

TODAY'S
DATE

E.Q.: Which substances precipitate from aqueous sol'ns?

precipitate → a solid produced in a chem rxn btwn 2 sol'ns

precipitation rxn → a chem rxn that results in the formation of a solid substance, or precipitate, that separates out of sol'n b/c it is not very soluble

BIG IDEA: some ionic solids are more soluble than others—when a compound reaches the limits of its solubility, undissolved solid is visible

see table @ end of notes

S = very soluble

N = insoluble / not very soluble

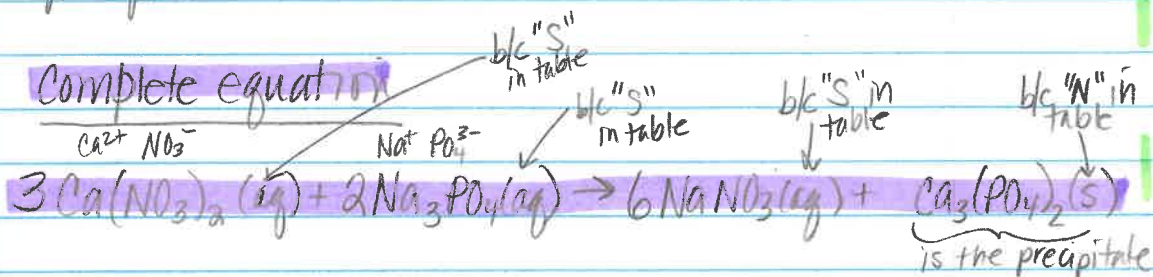
complete ionic equation a chem equation that shows all of the soluble ionic compounds as independent ions

spectator ions - an ion that does not directly participate in a chem rxn - spectator ions appear on both sides of a complete ionic equation

net ionic equation a chem equation that is written w/o including spectator ions

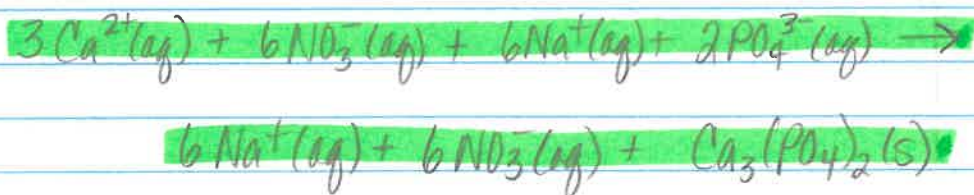
Cations	Anion						
	NO ₃ ⁻	Cl ⁻	OH ⁻	SO ₄ ²⁻	CO ₃ ²⁻	C ₂ O ₄ ²⁻	PO ₄ ³⁻
Most alkali metals, such as Li ⁺ , Na ⁺ , K ⁺ , NH ₄ ⁺	S	S	S	S	S	S	S
Most alkaline earth metals, such as Mg ²⁺ , Ca ²⁺ , Sr ²⁺	S	S	N	S	N	N	N
Some Period 4 transition metals, such as Fe ²⁺ , Co ²⁺ , Ni ²⁺ , Cu ²⁺ , Zn ²⁺	S	S	N	S	N	N	N
Other transition metals, such as Ag ⁺ , Pb ²⁺ , Hg ²⁺	S	N	N	N	N	N	N

example: write the complete equation, complete ionic equation, and net ionic equation for the rxn btwn calcium nitrate and sodium phosphate



complete ionic equation

separate all aqueous substances



net ionic equation

remove all spectator ions, in other words any ion that does not make the precipitate



analogy: meat + potatoes = meal

Spectator ions: Na⁺, NO₃⁻
(remember they appear as reactants and products)