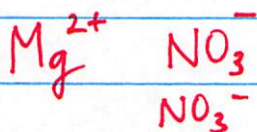


9/16/2019

For you to try:

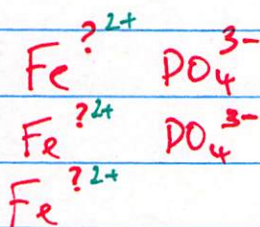


name: (1) $\text{Mg}(\text{NO}_3)_2$



= magnesium nitrate

(2) $\text{Fe}_3(\text{PO}_4)_2$



= iron(II) phosphate

Hydrate

water can "stick" to ionic compounds!

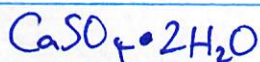
ex: $\text{CaSO}_4 \cdot \underbrace{2\text{H}_2\text{O}}$ (gypsum/sheetrock)

2 waters stuck to each CaSO_4 !

- can remove H_2O by heating! (LAB)

Naming hydrates:

- i) Name ionic part! (✓)
- ii) write a prefix for # H_2O 's ?
- iii) write "hydrate" @ end of name.

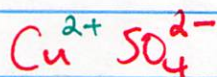


calcium sulfate dihydrate

Prefixes:

#	prefix	#	prefix
1	mono	6	hexa
2	di	7	hepta
3	tri	8	octa
4	tetra	9	nona
5	penta	10	deca

greek



Naming Molecular Compounds

Ionic: Metals + Non-metals

NaCl

Molecular: Non-metals.

FCI

ex: N_2O , NO , N_2O_5 , P_4O_{10} , ... (Molecules)

- 1) Write name of 1st element (as-is)
- 2) Write name of 2nd element, but change ending to -ide
- 3) Use prefix for #atoms.
- 4) Don't use mono for 1st element
- 5) Remove last letter of prefix if it sounds better!

N_2O di nitrogen mono oxide

NO ~~mono~~ nitrogen mono oxide

N_2O_5 di nitrogen penta oxide

P_4O_{10} tetra phosphorus deca oxide

Cl_2F_3 = ~~dichloride trifluoride~~ X
= dichlorine trifluoride ✓

H_2O = dihydrogen monoxide (DHMO)
WATER.

NH_3 = ammonia

CH_4 = methane

Common Acids

— aqueous (dissolved in water)

$HF(aq)$ = hydrofluoric acid

$HCl(aq)$ = hydrochloric acid

$HNO_3(aq)$ = nitric acid

$H_2SO_4(aq)$ = sulfuric acid

$H_3PO_4(aq)$ = phosphoric acid

More fun w/ moles!

molar mass = mass of 1 mol of substance
= sum of all atomic masses!

$$\begin{array}{rcl} \text{ex: } \text{NH}_3 & : & 1 \times \text{N} = 1 \times 14.01 \\ & & 3 \times \text{H} = 3 \times 1.008 \\ & & \hline & & 17.03 \\ & & \hline \end{array}$$

$$1 \text{ mol NH}_3 = 17.03 \text{ g NH}_3$$

$$6.022 \times 10^{23} \text{ molecules NH}_3 = 17.03 \text{ g NH}_3$$

Q: How many mol NH_3 are in 5.8g?

$$\cancel{5.8 \text{ g NH}_3} \times \frac{1 \text{ mol NH}_3}{\cancel{17.03 \text{ g NH}_3}} = 0.34 \text{ mol NH}_3.$$