

Take-Home Assignment 01

As we move through the semester it is important that you are comfortable with the way we represent covalent and ionic inorganic compounds using chemical formulas and names. In this case, the compounds are divided for you into those that are covalent and those that are ionic; be sure that you agree with these assignments. Your responses are due next Monday.

Set I: Six Covalent Inorganic Compounds

Write the chemical formula for the following inorganic compounds:

- diphosphorous pentoxide (a dehydrating reagent) is P_2O_5
- silicon dioxide (or sand, as you know it) is SiO_2
- iodine heptafluoride (of interest for its unusual structure) is IF_7

Give the name for the following inorganic compounds:

- Cl_2O_2 (a gas that contributes to the destruction of ozone) is dichlorine dioxide
- N_2O_5 (a gas used to prepare nitric acid) is dinitrogen pentoxide
- SF_6 (a gas used as an electrical insulator) is sulfur hexafluoride

H_2O

Set II: Ten Ionic Inorganic Compounds

Write the chemical formula for the following inorganic compounds, each of which is used to impart color to fireworks:

- potassium perchlorate (a color enhancer) is KClO_4
- lithium carbonate (red) is Li_2CO_3
- copper (II) oxide (blue) is CuO
- calcium sulfate (orange) is CaSO_4
- barium nitrate (green) is $\text{Ba}(\text{NO}_3)_2$

Give the name for the following inorganic compounds, each of which is used to generate a special effect in fireworks:

- Sb_2S_3 (glitter) is antimony (III) sulfide
- BaCl_2 (time delay) is barium chloride
- NH_4Cl (smoke) is ammonium chloride
- Bi_2O_3 (crackling microstars) is bismuth (III) oxide
- ZnO (smoke) is zinc oxide