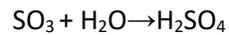


HW 22

Water

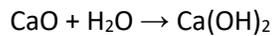
1.

When nonmetal oxides react with water, they form acids. E.g.:



2.

When metal oxides react with water, they form bases. E.g.:

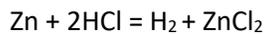
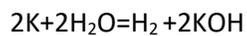


Note, that the valency of Ca is 2, oxidation number +2, that is why the product Ca(OH)_2 has subscript 2 for OH group.

3.

Active metals (the metal activity series, see below) react with water or

acid producing hydrogen and metal hydroxide or metal salt (if react with acid)



Metal activity series:

Li K Ba Ca Na Mg Al Zn Cr Fe Cd Co Ni Sn Pb H₂ Cu Hg Ag Pd Pt Au

“green” metals react with cold water, “blue” metals react with steam, other metals in the row do not react with water.

Questions

1. Write down chemical reactions of the following oxides with water: Na_2O , Li_2O .
2. There is an equal number of grams of Zn and Na. Which metal will produce more H_2 in reaction with water? Write down the chemical equation and explain the answer.
3. There are 10 mL of H_2 and 10 mL of O_2 in a close vessel. Which gas will remain in the vessel after the explosion? What will be the volume of the gas under normal conditions?