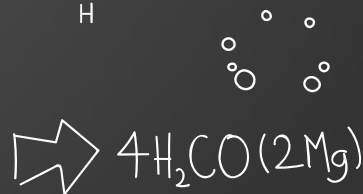
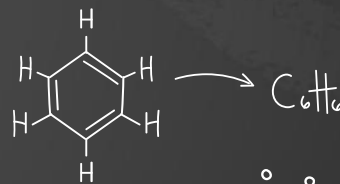
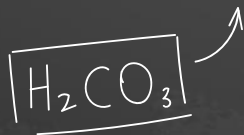
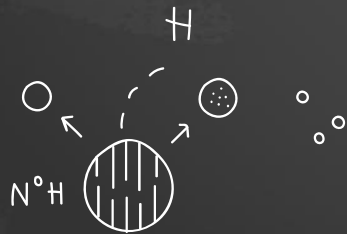
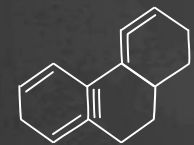




Chemistry - 101

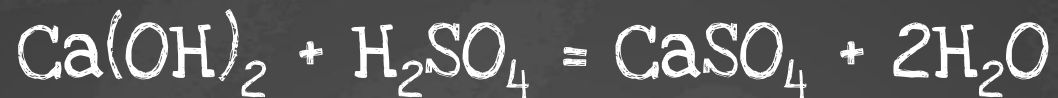
Classes of chemical compounds

04/25/21



HW

7.4 g



Mw $\text{Ca(OH)}_2 =$

Mw $\text{CaSO}_4 =$

Mw Ca = 40

Mw O = 16

Mw S = 32

Mw H = 1

Oxides

- Sulfur (IV) oxide SO_2
- Sulfur (VI) oxide SO_3
- Carbon (IV) oxide CO_2
- Calcium oxide CaO
- Iron (III) oxide Fe_2O_3
- Potassium oxide K_2O
- Magnesium oxide MgO

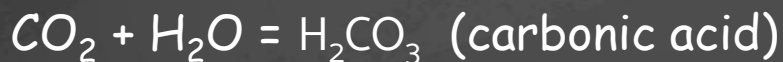
ENTS

					18 2 He Helium 4.003
13 5 B Boron 10.811	14 6 C Carbon 12.011	15 7 N Nitrogen 14.007	16 8 O Oxygen 15.999	17 9 F Fluorine 18.998	10 Ne Neon 20.180
13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948
31 Ga Gallium 69.723	32 Ge Germanium 72.631	33 As Arsenic 74.922	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 83.798
49 In Indium 114.818	50 Sn Tin 118.711	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.294
81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [208.982]	85 At Astatine 209.987	86 Rn Radon 222.018



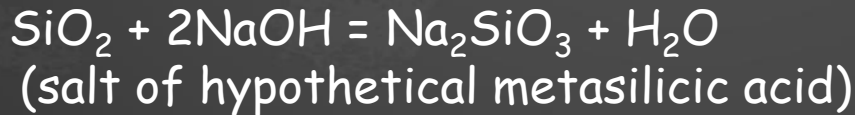
Acidic oxides

Acidic oxides can form acids:



5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180
13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948
31 Ga Gallium 69.723	32 Ge Germanium 72.631	33 As Arsenic 74.922	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 83.798
49 In Indium 114.818	50 Sn Tin 118.711	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.294
81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [208.982]	85 At Astatine 209.987	86 Rn Radon 222.018
113 Nh Nihonium [286]	114 Fl Flerovium [289]	115 Mc Moscovium [289]	116 Lv Livermorium [293]	117 Ts Tennessine [294]	118 Og Oganesson [294]

Some acidic oxides do not react with water but **all of them react with bases forming salts and water.**

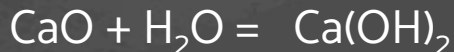


13 5 B Boron 10.811	14 6 C Carbon 12.011	15 7 N Nitrogen 14.007	16 8 O Oxygen 15.999	17 9 F Fluorine 18.998	18 10 Ne Neon 20.180
13 13 Al Aluminum 26.982	14 14 Si Silicon 28.086	15 15 P Phosphorus 30.974	16 16 S Sulfur 32.066	17 17 Cl Chlorine 35.453	18 18 Ar Argon 39.948
31 31 Ga Gallium 69.723	32 32 Ge Germanium 72.631	33 33 As Arsenic 74.922	34 34 Se Selenium 78.971	35 35 Br Bromine 79.904	36 36 Kr Krypton 83.798
49 49 In Indium 114.818	50 50 Sn Tin 118.711	51 51 Sb Antimony 121.760	52 52 Te Tellurium 127.6	53 53 I Iodine 126.904	54 54 Xe Xenon 131.294
81 81 Tl Thallium 204.383	82 82 Pb Lead 207.2	83 83 Bi Bismuth 208.980	84 84 Po Polonium [208.982]	85 85 At Astatine 209.987	86 86 Rn Radon 222.018
113 113 Nh Nihonium [286]	114 114 Fl Flerovium [289]	115 115 Mc Moscovium [289]	116 116 Lv Livermorium [293]	117 117 Ts Tennessine [294]	118 118 Og Oganesson [294]

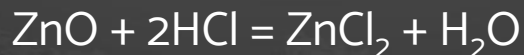
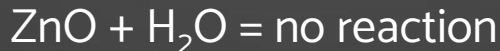
Basic oxides

Formed only by metals

Basic oxides can form bases:



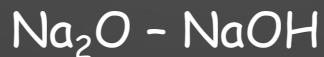
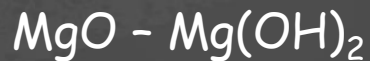
Many basic oxides are not soluble, but they can react with acids:



1	1 H Hydrogen 1.008	
2	3 Li Lithium 6.941	4 Be Beryllium 9.012
3	11 Na Sodium 22.990	12 Mg Magnesium 24.305
4	19 K Potassium 39.098	20 Ca Calcium 40.078
5	37 Rb Rubidium 85.468	38 Sr Strontium 87.62
6	55 Cs Cesium 132.905	56 Ba Barium 137.328
7	87 Fr Francium 223.020	88 Ra Radium 226.025

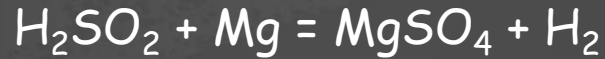
Basic oxides react with acids forming salts and water

Each basic oxide has a corresponding base:



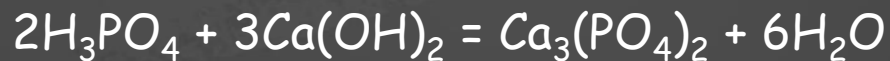
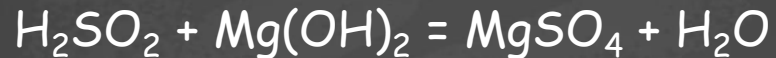
Acids - a compound that has one or several hydrogen atoms and a conjugate base in its molecule

Acids can replace hydrogen atoms by metal atoms



Reactions of acids

Acids react with bases forming salts and water:



This class uses the materials from the following books:

”

Manyuilov and Rodionov “Chemistry for children and adults”

Kuzmenko, Eremin, Popkov “Beginnings of chemistry”

<http://school-collection.edu.ru> (experiments)