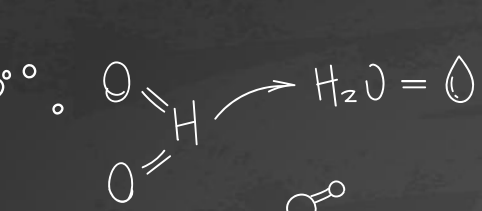
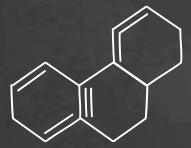
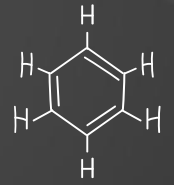
Chemistry - 101

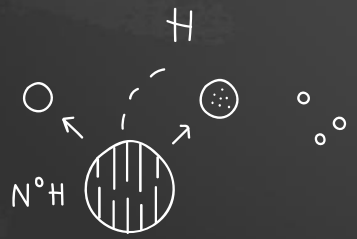
Classes of chemical compounds

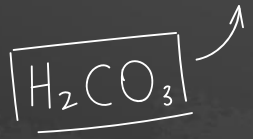
05/16/21

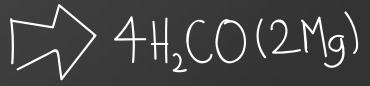












Homework

$Ca \rightarrow Ca(OH)_2 \rightarrow CaO \rightarrow CaSO_4$

$$CaO + 2HCl \rightarrow CaCl_2 + H_2O$$

73 g x g

Mw Ca = 40
Mw Cl = 35.5
Mw H = 1

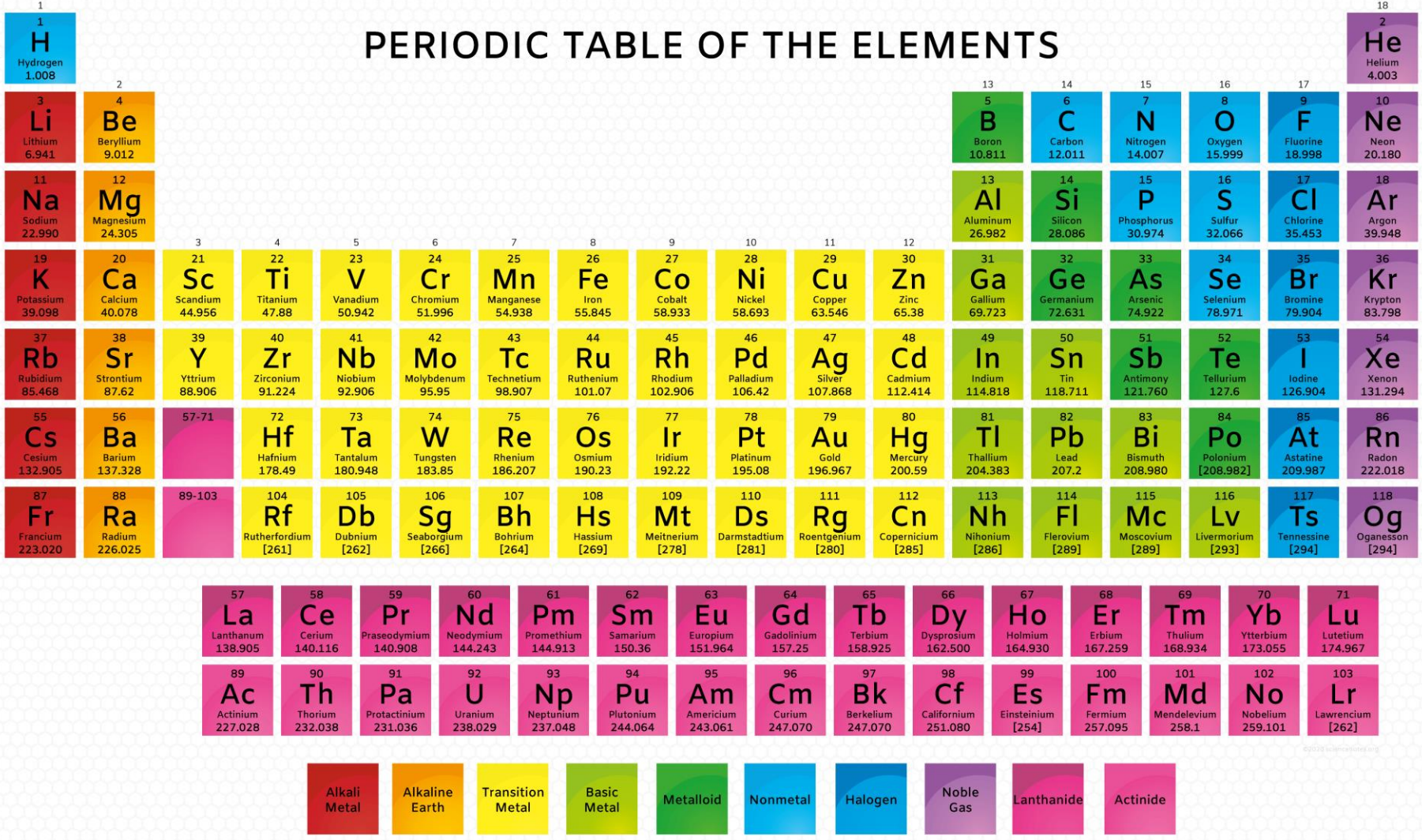
Mw HCl =
Mw $CaCl_2$ =

H^+ Na^+ Ca^{2+} O^{2-} K^+ SO_4^{2-} Cl^- NO_3^- PO_4^{3-}

S^{6+} P^{5+} C^{4+} Mg^{2+} NH_4^+ I^- $CO3^{2-}$ OH^-

Oxides Acids Bases Salts

PERIODIC TABLE OF THE ELEMENTS

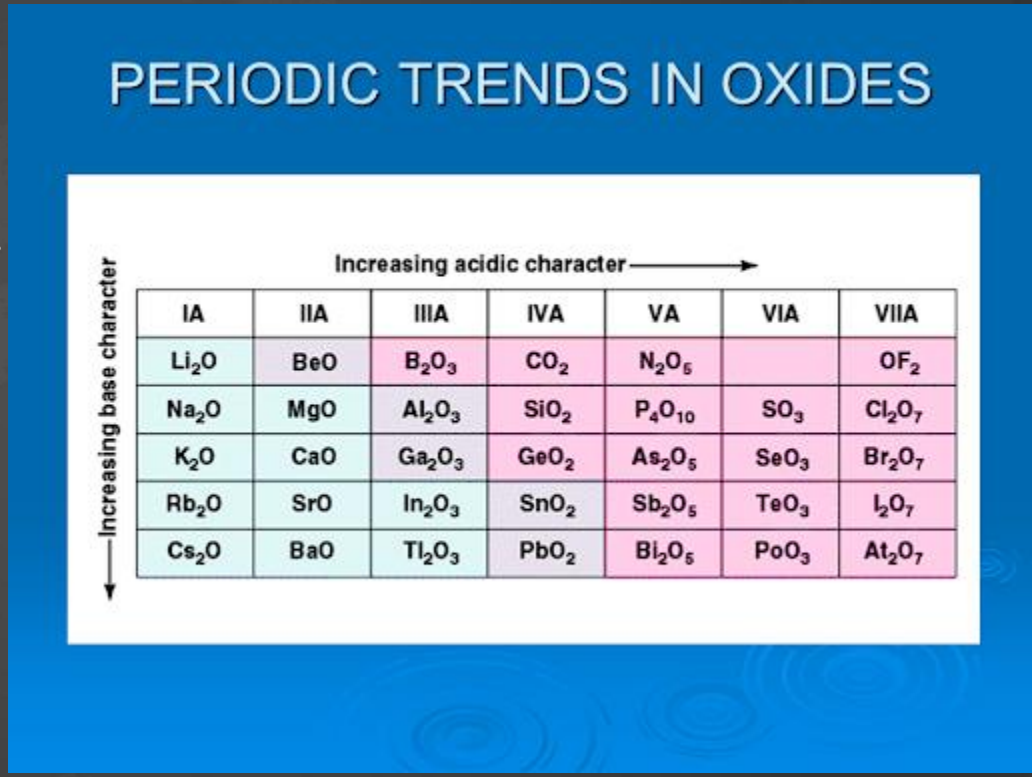


Amphoteric Species

Amphoteric species are molecules or ions that can react as an acid as well as a base.

The word has Greek origins, amphoteroi (ἀμφότεροι) meaning "both".

Many metals (such as copper, zinc, tin, lead, aluminium, and beryllium) form amphoteric **oxides** or hydroxides.



electronegativity

$B(OH)_3$	$Al(OH)_3$	$Ca(OH)_2$
2.04	1.61	1.0
H_3BO_3	H_3AlO_3	H_2CaO_2

$H_3BO_3 \rightarrow 3H^+ + BO_3^{3-}$

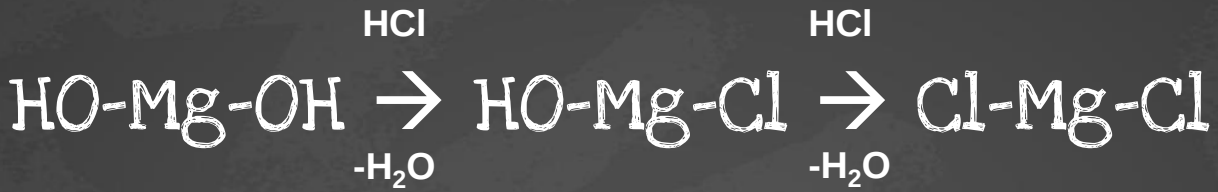
$Ca(OH)_2 \rightarrow Ca^+ + 2OH^-$

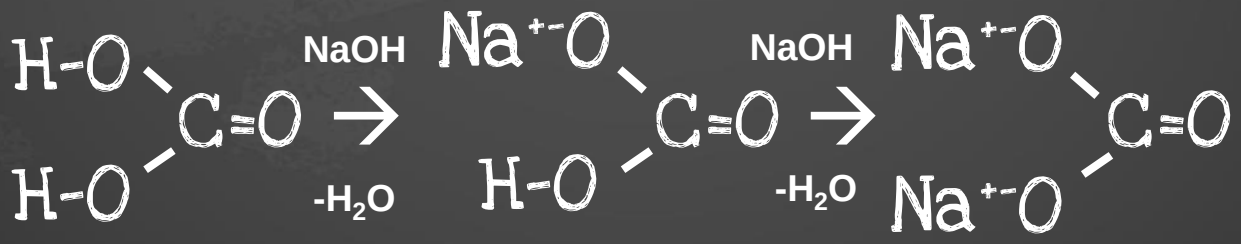
$2\ Al(OH)_3 + 3\ H_2SO_4 = Al_2(SO_4)_3 + 6H_2O$

$H_3AlO_3 + NaOH = NaH_2AlO_3 + H_2O$

$NaAlO_2$ or $Na[Al(OH)_4]$

Salts


HO-Mg-OH
HCl
-H2O
HO-Mg-Cl
HCl
-H2O
Cl-Mg-Cl


H-O
C=O
H-O
NaOH
-H2O
Na+-O
C=O
H-O
NaOH
-H2O
Na+-O
C=O
Na+-O

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)