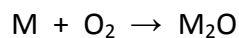
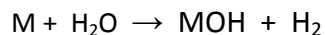


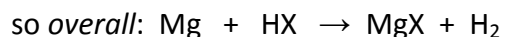
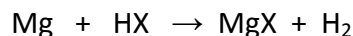
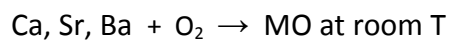
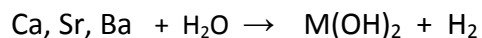
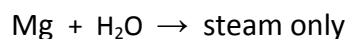
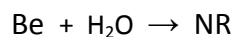
CHEMICAL REACTIONS TOOLBOX

Reactions by periodic table group

IA



IIA



IIIA

B: semimetallic; no ionic compounds; NR with H₂O or O₂



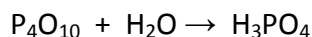
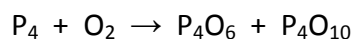
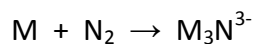
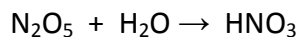
IVA

C = nonmetallic; Si, Ge = semimetallic; rarely form ionic compounds

Sn, Pb = metals, but NR with water

VA

N₂ + O₂ → NO, N₂O, NO₂, N₂O₄, N₂O₅... etc... depends on the amount of O₂ available



CHEMICAL REACTIONS TOOLBOX

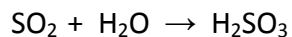
Reactions by periodic table group

VIA

O found in elemental state as O₂

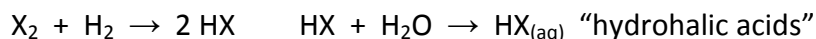
S, Se found in elemental state as S₈, Se₈

Important S compounds: H₂S, SO₂, SO₃ – all gases at room temperature



VIIA

All found as diatomic when elements; never found uncombined in nature.



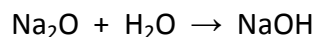
Form ionic compounds with metals; bond covalently with nonmetals

VIIIA

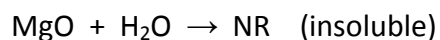
He, Ne, Ar – NR

Kr, Xe can react with strong oxidizing agents, ex: F₂

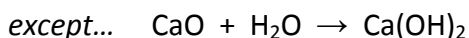
Oxides across a period



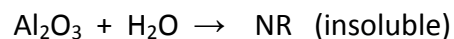
- "alkali" metals



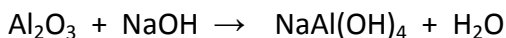
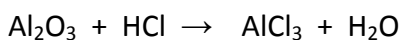
- insoluble \Rightarrow alkaline "earth" metals



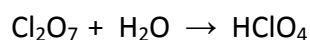
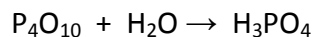
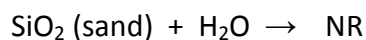
Basic oxides



But...



Amphoteric oxides



Acidic oxides