

The Activity Series for Single Displacement Reactions

<u>Activity Series:</u>	
Metals and H	Non-metals (Halogens)
K	F ₂
Ca	Cl ₂
Na	Br ₂
Mg	I ₂
Al	
Zn	
Fe	
Ni	
Sn	
Pb	
H	
Cu	
Ag	
Hg	
Au	

↑
Increasing Activity

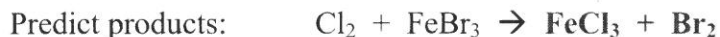
Higher oxidation potential
(greater tendency to form cations)

Higher reduction potential
(greater tendency to form anions)

A more active element (higher on the table above) will form an ion and displace the ion of like charge from the compound. The displaced ion will become a neutral element (see diatomic elements below).

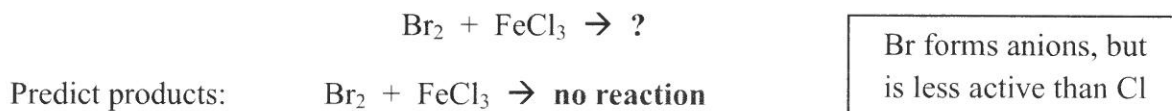
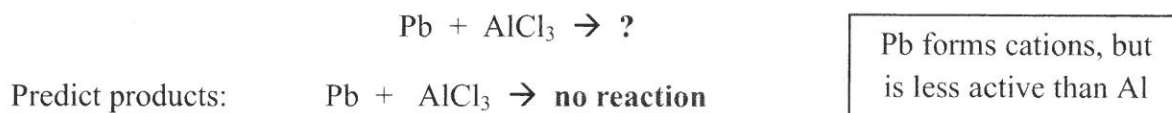


Al forms cations, and
is more active than Pb



Cl forms anions, and
is more active than Br

A less active element (lower on the table) cannot displace the ion from the compound, therefore, there will be no reaction.



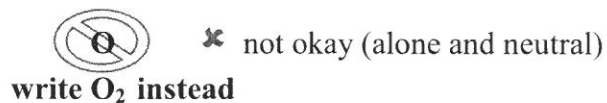
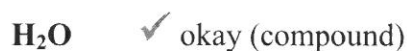
Diatomic elements:

There are seven elements that exist as diatomic (two atom) neutral molecules:



These elements can have a subscript of one if they are an ion or part of a compound, but will pair up (subscript of two) when alone and neutral.

Example: oxygen



When a non-metal ion is being displaced, be sure to check whether or not the neutral element produced is diatomic.