

Writing Chemical Reactions

Metal and Non-Metal Ion Charges

The charge of metals are based on the periodic table

Representative Elements (Metals and Non-Metals)

Group	1A	2A	1B – 10B	3A	4A	5A	6A	7A	8A
	1	2	3 - 12	13	14	15	16	17	18
Ion Charge	+1	+2	Var (+)	+3	+4/-4	-3	-2	-1	0

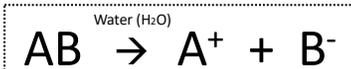
Transition Metals [Group 1B – 10B (3 - 12)] have variable charges based on the metals Lewis Dot Structures

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Writing Chemical Reactions

Ionization of Ionic Compounds

Ionization occurs when an ionic compound decomposes into ions in an aqueous (*water based*) mixture (*solution*)



ionization generally occurs during a chemical reaction process (*single or double replacement*) or as part of an aqueous (*water based*) homogenous mixture (*solution*)

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Writing Chemical Reactions

Single Replacement Reactions

An ionic compound dissociates in water then reacts with a single metal atom with a *higher activity*.



A = Metal (*More Active*) B = Metal (*Less Active*)
 BC = Ionic Compound AC = Ionic Compound

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Activity Series

A Series of Elements that can replace other elements in a single replacement reaction

Elements lower than H can not react with *acids*, while only a metal higher than another can *replace* it in a single replacement reaction

Metals	Reactivity
Potassium	Reacts with water
Sodium	
Lithium	Reacts with acids
Barium	
Strontium	
Calcium	
Magnesium	
Aluminium	
Manganese	
Zinc	
Chromium	
Iron	
Cadmium	Included for comparison
Cobalt	
Nickel	Highly unreactive
Tin	
Lead	
Hydrogen	
Antimony	
Bismuth	
Copper	
Mercury	
Silver	
Gold	
Platinum	

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