

Double Replacement Reactions	acetate	bromide	carbonate	chlorate	chloride	chromate	hydroxide	iodide	nitrate	oxide	phosphate	sulfate	sulfide	silicate
aluminum	s	s	-	s	s	-	I	s	s	I	I	s	d	I
ammonium	s	s	s	s	s	s	s	s	s	-	s	s	s	-
barium	s	s	I	s	s	I	ss	I	s	s	I	ss	d	s
cadmium	s	s	I	s	s	-	I	s	s	I	I	s	I	ss
calcium	s	s	I	s	s	s	ss	s	s	I	I	ss	s	I
copper (I)	-	ss	I	-	I	I	I	I	-	I	-	d	-	-
copper (II)	s	s	d	s	s	I	I	-	s	I	I	s	I	I
hydrogen	s	s	s	s	s	s	HOH	s	s	s	s	s	s	-
iron (II)	s	s	I	-	s	n	I	s	s	I	I	s	I	-
iron (III)	-	s	-	-	s	I	I	-	s	I	I	ss	I	-
lead (II)	s	ss	I	s	ss	I	I	I	s	I	I	ss	I	I
lead (IV)	d	-	-	-	d	-	-	-	-	I	-	-	-	-
magnesium	s	s	ss	s	s	s	I	s	s	I	I	s	d	-
manganese (II)	s	s	I	-	s	-	I	s	s	I	-	s	I	I
mercury (I)	ss	I	I	ss	I	ss	-	ss	s/d	I	I/d	ss	I	-
mercury (II)	s	ss	I	s	s	ss	I	I	s	I	ss	d	I	-
nickel (II)	s	s	I	s	s	-	I	s	s	I	I	s	I	I
potassium	s	s	s	s	s	s	s	s	s	d	s	s	s	-
silver	s	I	I	s	I	ss	-	I	s	I	I	ss	I	-
sodium	ss	s	s	s	s	s	s	s	s	d	s	s	s	-
tin (II)	-	-	-	-	s	-	I	s	-	I	I	s	I	-
tin (IV)	-	s/d	-	-	s/d	-	-	s/d	-	I	I	s/d	I	-
zinc	s	s	I	s	s	s	I	s	d	I	I	s	I	I
strontium	s	s	ss	s	s	ss	ss	s	s	s	I	ss	I	I

s-soluble (use (aq))

I-insoluble (use (s))

ss-slightly soluble (use (s))

d-decomposes

"-" - does not exist

Single Replacement Reaction

ACTIVITY SERIES of METALS

lithium
rubidium
potassium
cesium
barium
strontium
calcium
sodium
magnesium
aluminum
manganese
zinc
chromium
iron
cadmium
cobalt
nickel
tin
lead
HYDROGEN
antimony
bismuth
arsenic
copper
mercury
silver
platinum
gold

Replaces
"H" in acids
and HOH

Replaces
"H" only
in Acids

Not Water

COMMON POLYATOMIC IONS

NH ₄ ⁺	ammonium
OH ⁻	hydroxide
NO ₂ ⁻	nitrite
NO ₃ ⁻	nitrate
HCO ₃ ⁻	bicarbonate
ClO ⁻	hypochlorite
ClO ₂ ⁻	chlorite
ClO ₃ ⁻	chlorate
ClO ₄ ⁻	perchlorate
C ₂ H ₃ O ₂ ⁻	acetate
CN ⁻	cyanide
MnO ₄ ⁻	permanganate
C ₂ H ₃ O ₂ ⁻	acetate
BrO ⁻	hypobromite
BrO ₂ ⁻	bromite
BrO ₃ ⁻	bromate
BrO ₄ ⁻	perbromate
SO ₃ ²⁻	sulfite
SO ₄ ²⁻	sulfate
CO ₃ ²⁻	carbonate
CrO ₄ ²⁻	chromate
Cr ₂ O ₇ ²⁻	dichromate
O ₂ ²⁻	peroxide
SiO ₃ ²⁻	silicate
C ₂ O ₄ ²⁻	oxalate
PO ₃ ³⁻	phosphite
PO ₄ ³⁻	phosphate

Diatomic Molecules: Hydrogen - Nitrogen - Oxygen - Fluorine - Chlorine - Bromine - Iodine