


Name _____

Compounds Containing the Following Ions Are Generally <u>Soluble</u>	Exceptions
Li^+ , Na^+ , K^+ , and NH_4^+	None
NO_3^- , CH_3COO^-	None
Cl^- , Br^- , and I^-	When these ions pair with Ag^+ , Hg_2^{2+} , or $\text{Pb}^{2+} \Rightarrow$ insoluble compounds
SO_4^{2-}	When SO_4^{2-} pairs with Ca^{2+} , Sr^{2+} , Ba^{2+} , Pb^{2+} , or $\text{Ag}^+ \Rightarrow$ insoluble

Compounds Containing the Following Ions Are Generally <u>Insoluble</u>	Exceptions
OH^- and S^{2-}	When these ions pair with Li^+ , Na^+ , K^+ , or $\text{NH}_4^+ \Rightarrow$ soluble
	When S^{2-} pairs with Ca^{2+} , Sr^{2+} or $\text{Ba}^{2+} \Rightarrow$ soluble
	When OH^- pairs with Ca^{2+} , Sr^{2+} or $\text{Ba}^{2+} \Rightarrow$ slightly soluble
CO_3^{2-} and PO_4^{3-}	When these ions pair with Li^+ , Na^+ , K^+ , or $\text{NH}_4^+ \Rightarrow$ soluble

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Activity series of metals in aqueous solutions:

Metal	oxidation reaction				
Li	$\text{Li} \rightarrow \text{Li}^+ + \text{e}^-$	}	<i>Can displace H_2 from water, steam or acid</i>	 Ease of Oxidation increases	
K	$\text{K} \rightarrow \text{K}^+ + \text{e}^-$				
Ba	$\text{Ba} \rightarrow \text{Ba}^{2+} + 2\text{e}^-$				
Sr	$\text{Sr} \rightarrow \text{Sr}^{2+} + 2\text{e}^-$				
Ca	$\text{Ca} \rightarrow \text{Ca}^{2+} + 2\text{e}^-$				
Na	$\text{Na} \rightarrow \text{Na}^+ + \text{e}^-$				
Mg	$\text{Mg} \rightarrow \text{Mg}^{2+} + 2\text{e}^-$	}	<i>Can displace H_2 from steam or acid</i>		
Al	$\text{Al} \rightarrow \text{Al}^{3+} + 3\text{e}^-$				
Mn	$\text{Mn} \rightarrow \text{Mn}^{2+} + 2\text{e}^-$				
Zn	$\text{Zn} \rightarrow \text{Zn}^{2+} + 2\text{e}^-$				
Cr	$\text{Cr} \rightarrow \text{Cr}^{3+} + 3\text{e}^-$				
Fe	$\text{Fe} \rightarrow \text{Fe}^{2+} + 2\text{e}^-$				
Cd	$\text{Cd} \rightarrow \text{Cd}^{2+} + 2\text{e}^-$				
Co	$\text{Co} \rightarrow \text{Co}^{2+} + 2\text{e}^-$	}	<i>Can displace H_2 from acid</i>		
Ni	$\text{Ni} \rightarrow \text{Ni}^{2+} + 2\text{e}^-$				
Sn	$\text{Sn} \rightarrow \text{Sn}^{2+} + 2\text{e}^-$				
Pb	$\text{Pb} \rightarrow \text{Pb}^{2+} + 2\text{e}^-$				
H	$\text{H}_2 \rightarrow 2\text{H}^+ + 2\text{e}^-$				
Cu	$\text{Cu} \rightarrow \text{Cu}^{2+} + 2\text{e}^-$	}	<i>Cannot displace H_2 from any source</i>		
Hg	$\text{Hg} \rightarrow \text{Hg}^{2+} + 2\text{e}^-$				
Ag	$\text{Ag} \rightarrow \text{Ag}^+ + \text{e}^-$				
Au	$\text{Au} \rightarrow \text{Au}^{3+} + 3\text{e}^-$				

The labels on top (1A, 2A, etc.) are common American usage. The labels below these (1, 2, etc.) are those recommended by the International Union of Pure and Applied Chemistry.

The names and symbols for elements 112 and above have not yet been decided.

Atomic masses in brackets are the masses of the longest-lived or most important isotope of radioactive elements.

*Element 112 has a proposed name of Copernicium which is, at the time of this publication, under review by IUPAC.