

## SOLUBILITY CHART

*Exceptions*

<i>Exceptions</i>		
	Group 1 cations	
<b>SOLUBLE</b>	NH <sub>4</sub> <sup>+</sup>	
	NO <sub>3</sub> <sup>-</sup>	
	Halide anions	<i>Ag<sup>+</sup>, Hg<sub>2</sub><sup>2+</sup>, Pb<sup>2+</sup></i>
	SO <sub>4</sub> <sup>2-</sup>	<i>Ag<sup>+</sup>, Hg<sub>2</sub><sup>2+</sup>, Pb<sup>2+</sup>, Ba<sup>2+</sup>, Ca<sup>2+</sup>, Sr<sup>2+</sup>,</i>
<b>INSOLUBLE</b>	OH <sup>-</sup>	<i>Group 1 cations, Ba<sup>2+</sup>, Ca<sup>2+</sup>, Sr<sup>2+</sup>,</i>
	S <sup>2-</sup>	<i>Group 1 cations, Ba<sup>2+</sup>, Ca<sup>2+</sup>, Sr<sup>2+</sup>, NH<sub>4</sub><sup>+</sup></i>
	CO <sub>3</sub> <sup>2-</sup> , PO <sub>4</sub> <sup>3-</sup> , F <sup>-</sup>	<i>Group 1 cations, Ba<sup>2+</sup>, Ca<sup>2+</sup>, Sr<sup>2+</sup>, NH<sub>4</sub><sup>+</sup></i>

**BALANING REDOX REACTION BY HALF-REACTIONS**

**Balance this reaction:**       $\text{Fe}^{2+} (\text{aq}) + \text{MnO}_4^- (\text{aq}) \rightarrow \text{Fe}^{3+} (\text{aq}) + \text{Mn}^{2+} (\text{aq})$

**Steps to follow:**

1.	Separate the two half-reactions: Oxidation and Reduction	
2.	Balance atoms <i>except</i> H and O.	
3.	Balance O atoms with H <sub>2</sub> O.	
4.	Balance H atoms with H <sup>+</sup> .	
5.	Balance charges with e <sup>-</sup> .	
6.	Balance e <sup>-</sup> by multiply	
7.	Add the two reactions.	