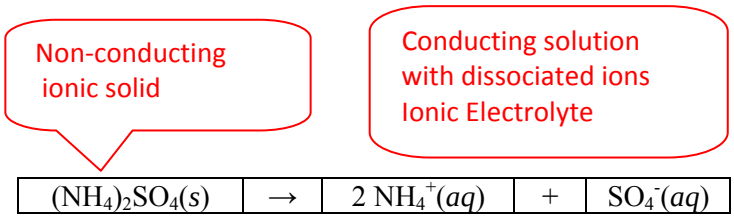
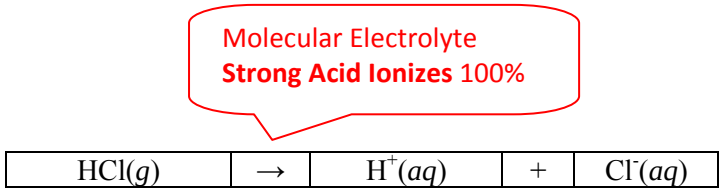
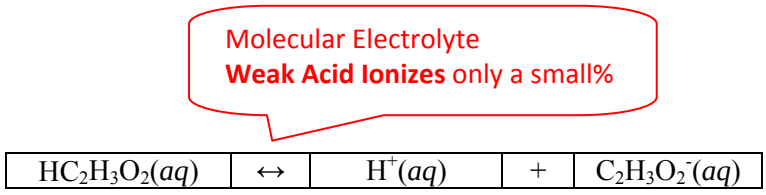
Dissociation and Ionization Whiteboard

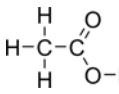
Ionic Compounds Dissociate (ions separate from another)



Acids are molecules, not ionic compounds[1] and cannot simply dissociate (separate) into ions. Instead molecular compounds may react with water to form ions. Rather than use "dissociation" to describe this reaction, ionization is the preferred term.





Because the molecule looks like this:  , the formula is sometime written as CH_3COOH.

[1] Ionic compounds are hard, brittle solids which are bound together by the opposite charges of the cations and anions. Their formulas (ion ratios) are determined by their charges and follow the ionic compound naming scheme. Molecular substances are discreet molecules which may be gases, liquids or solids. They are bound to one another by covalent bonds (sharing of electron pairs). Molecular substances do not dissociate in solution. Molecular substances become electrolytes when they react with water to form ions, that is ionize.

$$HCl(g) + H_2O(l) \rightarrow H_3O^+(aq) + Cl^-(aq)$$

The reaction is simplified as:

$$HCl(g) \rightarrow H^+(aq) + Cl^-(aq)$$