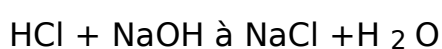


# The neutralization reaction as a double displacement reaction essay sample

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Acid- base reactions, or neutralization reaction in inorganic sense are considered as double displacement reactions. Arrhenius acids and bases which contain  $H^+$  and  $OH^-$  are responsible for the neutralization process for this specific acid-base type. The mechanism of the reaction is explained through double displacement reaction in an aqueous medium, which can be illustrated in the following reaction, for this matter the common acid and base used are hydrochloric acid (HCl) and sodium hydroxide (NaOH):



Take note that the reaction produces the salt, which is composed of the counter-ion of the proton which is the chloride ion and the sodium ion which is the counter-ion of the hydroxide ion. This reaction takes place in water. The second product is also water. The reverse of this reaction is again forming the acid and the base and is also called hydrolysis reaction meaning “water breaking”(Helmenstine, 2001).

Why is neutralization reaction considered as a double displacement reaction? Looking at the previous example, we can observe that a switch between the pairs of ions happened according to the formula:  $AB + XY \rightarrow AY + XB$

Double displacement reactions are also called double replacement reaction or another term is metathesis reaction. Evidences that can account for this type of reaction are possibly temperature increase, change in color of the reaction, bubbling, and change in taste which is usually not done. In the case of the neutralization reaction, we can say that the metathesis between them is successful when the pH of the reaction is no longer acidic or basic but

neutral. That is actually where it derived its name from. Or in other words, when the reaction mixture loses its acidity or basicity/alkalinity.

#### Reference

Helmenstine, A. M. (2001). Salt Formation – Chemistry of Neutralization and Hydrolysis. Retrieved May 23, 2008, 2008, from [http://chemistry. about. com/od/acidsbases/a/aa110204a. htm](http://chemistry.about.com/od/acidsbases/a/aa110204a.htm)