

A- HYDROLYSIS OF SALTS We expect solutions of substances such as HCl and HNO<sub>2</sub> to be acidic and solutions of NaOH and NH<sub>3</sub> to be basic. 2- Using a measuring cylinder, put 25 mL of a buffer solution (of pH = 7) in a 50 mL beaker. 9- Put 25 mL of distilled water in a 50 mL beaker and, keeping its exposure time to the air as short as possible, record its pH. If the water is absolutely pure its pH will be 7.0, but it is very difficult to achieve this. Similarly, cations from strong bases, such as Na<sup>+</sup> from NaOH or K<sup>+</sup> from KOH, do not react with water to affect the pH. Hydrolysis of an anion occurs only when it can form a molecule or ion that is a weak electrolyte in reaction with water. However, we may be somewhat surprised at first to discover that aqueous solutions of some salts such as NaNO<sub>2</sub> and KC<sub>2</sub>H<sub>3</sub>O<sub>2</sub> are basic, whereas others such as NH<sub>4</sub>Cl and FeCl<sub>3</sub> are acidic. For example, when NaOH and HNO<sub>2</sub> (nitrous acid) react, the salt NaNO<sub>2</sub> is formed:  $\text{NaOH (aq)} + \text{HNO}_2 \text{ (aq)} \rightarrow \text{NaNO}_2 \text{ (aq)} + \text{H}_2\text{O (l)}$  [1] Nearly all salts are strong electrolytes and exist as ions in aqueous solutions. Recall that salts are the products formed in neutralization reactions of acids and bases. 1.2.3.4.