

WS 4 - Predicting Acid-Base Reactions

For each of the following problems:

1. Write a reaction equation.
2. Label reactants as acid or base and products as conjugate acid or conjugate base.
3. Use appropriate arrow notation to indicate reaction predomination (forward or reverse).

1. Solutions of $\text{Na}_2\text{SO}_3(\text{aq})$ and $\text{HF}(\text{aq})$ are mixed in a beaker.
2. A solution of $\text{NH}_4\text{NO}_3(\text{aq})$ and a solution of $\text{NaCH}_3\text{COO}(\text{aq})$ are mixed.
3. Sodium benzoate is often used as a preservative. Write the equation for $\text{NaC}_6\text{H}_5\text{COO}(\text{s})$ dissolving in a solution of $\text{NaHSO}_4(\text{aq})$.
4. A household ammonia solution is mixed with a solution of nitrous acid.
5. Nitric acid and potassium hydroxide solutions are mixed.
6. Sodium sulphate is dissolved into a solution of sulphurous acid.
7. Ammonium fluoride is dissolved in water.
8. Vinegar, a dilute ethanoic acid solution, is used to neutralized some spilled lye (sodium hydroxide)
9. Sodium hydrogen carbonate may be used directly or in *gripe water* to neutralize excess stomach acid, $\text{HCl}_{(\text{aq})}$.
10. Sodium hydrogen carbonate is mixed with a solution of potassium dihydrogen phosphate.