Name _____

Common Substances Around the Home

Acids, Alkalis and Salts

There are hundreds of different types of compounds and we may have dozens of different chemicals in our kitchens, bathrooms, laundries and garages. Many of them look very different from each other, while others look very much alike and are hard to tell apart. Table salt and sugar are two such **compounds**.

Table salt is called sodium chloride and sugar is called sucrose. Both are usually found as white crystals. Has anyone ever put salt in your sugar bowl as a practical joke? If you look closely enough, or taste the crystals, you can tell the two types of white crystals apart. However, if you don't check what is in your sugar bowl, you can easily be fooled, because they do look very similar. Many white crystals are not safe to taste. Borax, which looks like fine, white sugar, is poisonous and should **never** be tasted.

Many other compounds are hard to tell apart. For example, clear colourless liquids such as ammonia, vinegar, water and hydrochloric acid. How can we tell these apart – it is dangerous to smell some of these and only one is safe to taste.

So that we can tell the difference between compounds, scientists examine their **properties**. Compounds that react the same way to certain tests usually have something in common. We group similar compounds together. One way of grouping liquid compounds together is to find out which ones are acids, alkalis (bases) or neutral.

Acids taste sour and **alkalis** taste bitter, however, we can not taste every clear liquid we come across; we would soon become very sick! Instead, scientists use **indicators** to find out whether a compound is an acid, alkali or neutral substance. An indicator is a substance that is one colour in acid and another colour in alkali. Litmus paper and phenolphthalein are both acid/base indicators. Universal indicator also shows the strength of an acid or alkali. This is called **pH**.

The pH scale is a measure of the strength of an acid or alkali. The pH scale has numbers from 1 to 14. **Neutral** substances have a pH of **7**. Acids have a pH below 7 and alkalis have a pH above 7. The higher or lower the pH value, the stronger the acid or base.

The following table shows the pH scale and the various colours universal indicator turns when dipped into a liquid of that pH.