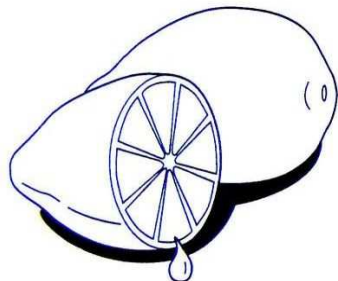


## ACIDS



Acids are the chemical opposites of alkalis. Some acids, called mineral acids, are often corrosive. This means that they must be used carefully, because they can eat away metals, skin and cloth. Most of the mineral acids do not occur naturally but are made for laboratory and industrial use. They include sulphuric acid and nitric acid. Hydrochloric acid is a mineral acid that is produced in our stomachs. But some acids, called organic acids, are not so corrosive, but still have a sharp or sour taste. They can be found in vegetables, fruits and other food. They include ethanoic acid (found in vinegar), citric acid (in lemons) and lactic acid (in milk).

Litmus is an indicator made from a small plant which turns red in acid. Other properties of acids are that they have a pH value less than 7 and that they react with alkalis, forming a salt and water. This reaction is called neutralisation.

All acids have something in common that makes them acidic. That 'something' is hydrogen ( $H^+$ ) ions. Acids contain hydrogen ions when they are dissolved in water. The more hydrogen ions there are, the more acidic it is.

If something is not an acid or an alkali, it is called neutral. Water is neutral.

## ALKALIS



Alkalis are the chemical opposites of acids. Some alkalis, like sodium hydroxide, potassium hydroxide and calcium hydroxide, are corrosive. This means that they must be used carefully, because they can eat away metals, skin and cloth. Other alkalis are not so corrosive, like ammonia. Complex alkalis include many organic substances that can be found in the DNA of animals and plants.

Litmus is an indicator made from a small plant which turns blue in alkali. All alkalis feel soapy, but don't try it because they can burn your skin. Alkalis can also remove oily dirt very easily, that's why they can be found in most of the detergents. Other properties of alkalis are that they have a pH value greater than 7 and that they react with acids, forming a salt and water. This reaction is called neutralisation.

All alkalis have something in common that makes them alkaline. That 'something' is hydroxide ( $OH^-$ ) ions. Alkalis contain hydroxide ions when they are dissolved in water. The more hydroxide ions there are, the more alkaline it is.

If something is not an acid or an alkali, it is called neutral. Water is neutral.