CHEMICAL ANALYSIS
INTRODUCTION

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HANDY DEFINITIONS FOR CHEMICAL ANALYSIS

PURE SUBSTANCE - In chemistry a pure substance is **a single element or compound, that has not been mixed with any other substance**. However we also use **'pure'** in everyday life to mean something quite different e.g., pure milk (indicating nothing has been added to the milk). An impurity in a pure substance often causes changes to its boiling or melting point.

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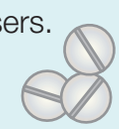
SOLVENT - usually a liquid which can be used to dissolve another substance e.g. **water** is a solvent for **sodium chloride** (salt), some inks will only dissolve in ethanol. The substance which is dissolved is called the **solute.**

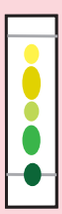
PRECIPITATE - a solid product formed from a solution. It can often be seen floating in the liquid or collecting at the bottom of the vessel.

FORMULATION

This is a mixture containing very accurate amounts of substances.

A formulation is usually made for a particular product e.g., medicines, fuels, paints, foods and fertilisers.





CHROMATOGRAPHY

A method that can be used to separate substances in a mixture. There are different types including **paper chromatography** and **gas** chromatography (an instrumental method).

MIXTURE - two or more elements or compounds mixed together. There are no chemical bonds between the substances in a mixture so it can be easily separated.

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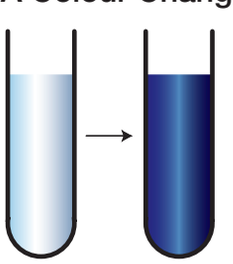
'**ANALYSIS**' means to examine or test. Chemists have developed tests which can indicate the presence of a substance and determine its concentration. Unknown samples can be tested. A positive result might include a colour change, formation of a precipitate or a gas being given off.

QUALITATIVE TESTS

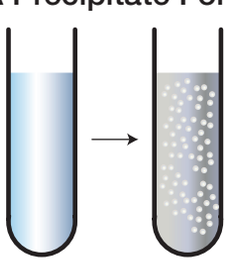
These tests can tell us if a substance is present, but cannot tell us how much there is.

Some tests produce a gas when a certain chemical is present.

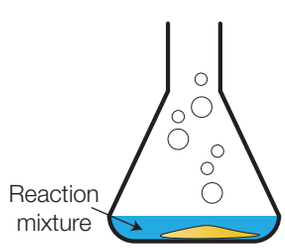
A Colour Change



A Precipitate Forms



A Gas is Produced



As well as these laboratory tests, chemists have instrumental tests which are fast, sensitive and highly accurate. Instrumental tests can be used on very small amounts of substance.