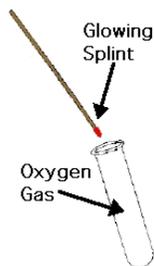


Explain what a pure substance is

A substance that contains only 1 type of element or compound

How do you test for O₂

Oxygen will relight a glowing splint



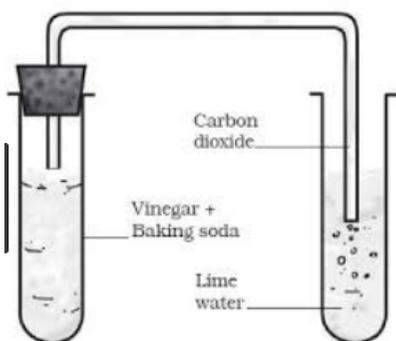
How do you test for Cl₂?

Chlorine gas bleaches litmus paper

How do you test for water?

Anhydrous cobalt chloride paper turns from blue to pink when wet

How do you test for CO₂? (draw a diagram)



Limewater will turn cloudy with CO₂ in it

Chromatography can be used for...

Testing the purity of chemicals, determining the composition of mixtures of liquids, extracting chemicals from a mixture.

How do you test for H₂

Hydrogen will react explosively with oxygen. A lit splint will cause a squeaky pop.

What is a formulation?

A mixture that has a use as a product

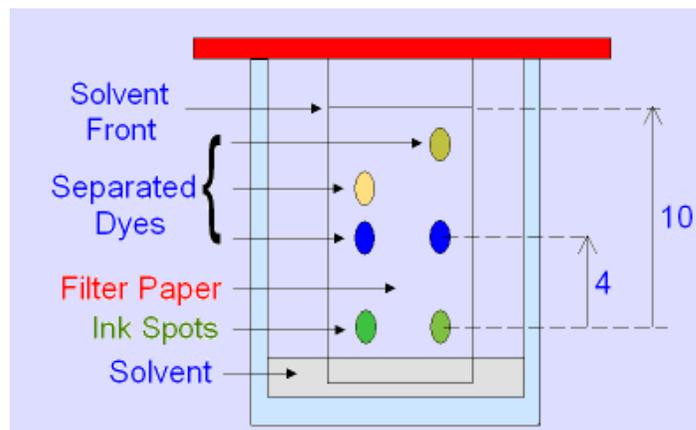
What types of additives could be added to a formulated food or cleaning product and why?

Anti bacteria, colourings, scent.

In chromatography the mobile phase is the solvent and the stationary phase is the paper.

Chem Unit 8: Chemical analysis

Draw a diagram and write a method explaining how to carry out chromatography and calculate the R_f value



R_f value = $\frac{\text{distance travelled by spot}}{\text{Distance travelled by solvent from}}$

Distance travelled by solvent from

Chromatography can be used to separate mixtures of coloured compounds. Mixtures that are suitable for separation by chromatography include inks, dyes and colouring agents in food. Simple chromatography is carried out on paper. A spot of the mixture is placed near the bottom of a piece of chromatography paper and the paper is then placed upright in a suitable solvent, eg water. As the solvent soaks up the paper, it carries the mixtures with it. Different components of the mixture will move at different rates. This separates the mixture out.

Explain how melting point can be used to determine purity

If a substance melts over a wide range of temperatures it is impure, however if it melts only over a very narrow range of temperatures it is pure. You can compare the melting point to known values for that substance.

1. What is a pure substance?
2. Describe the melting point of an impure substance?
3. What process would be used to produce salt crystals from a salt solution?
4. Describe the appearance of a chromatogram that contains a pure substance.
5. Impure substances are separated by physical processes. Explain why.
6. What is a formulation? .
7. Spot the odd one out and explain: wood, salt, perfume.
8. Which type of additive stops products from spoiling?
9. Why is sugar added to many medicines?
10. How do fertilisers show you whether it is suitable for your garden?
11. During chromatography what is the mobile phase?
12. In chromatography what is the stationary phase?
13. Describe a chromatogram of an impure substance.
14. Why do some substances travel further up the chromatography paper?
15. How is the R_f value calculated during chromatography?
16. What is the test for carbon dioxide?
17. What is the test for oxygen gas?
18. What is the test for chlorine gas?
19. What is the test for hydrogen gas?
20. Which gas will put out a lit splint?