

Universal indicator is very useful. This is because its colour changes frequently as the pH of the substance varies. In fact, pH values from 1 to 11 all have different colours. Jill used the indicator to test a range of substances.

Colour chart for Universal Indicator (pH of substance shown)													
Strong acids			Weak acids			Neutral	Weak bases			Strong bases			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Red	Orange Red	Orange	Pale Orange	Orange Green	Pale Green	Green	Dark Green	Green Blue	Blue Violet	Violet	Violet	Violet	Violet

Fact File











Indicators help us find out whether a substance is acidic, basic or neutral.

A good indicator will have lots of obvious colour changes.

pH is a measure of how strong an acid or base is.

For normal purposes, we can consider the pH range to start at 1 (strong acid) and go up to 14 (strong base).

Universal indicator changes colour with each pH level up to 11.

Colour of universal indicator in household substances				
Vinegar  Pale orange	Battery Acid  Red	Coca Cola  Orange Green	Water  Green	Oven Cleaner  Violet
Bicarbonate Toothpaste  Dark green	Milk  Pale green	Washing Soda  Violet	Limewater  Blue violet	Lemon Juice  Orange

Tasks

1. Make a copy of the colour chart for universal indicator. Colour each box as shown.
2. Draw a table showing the pH of the ten household substances tested. Include in your table a column suggesting whether the substance is a strong acid, weak acid, strong base, weak base or neutral. You should also include the colour of the indicator.
3. Which substance is the strongest acid?
4. Why do we not know which substance is the strongest base?
5. Find out some methods of testing which is the strongest base.

Key Words

Universal indicator. Acidic. Basic.

Checklist for this activity

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|---|--|
| <input type="checkbox"/> Work on the sheet | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 |
| <input type="checkbox"/> Write full answers | <input type="checkbox"/> Copy the <i>Fact File</i> |
| <input type="checkbox"/> Copy the diagrams | <input type="checkbox"/> Add your own research |