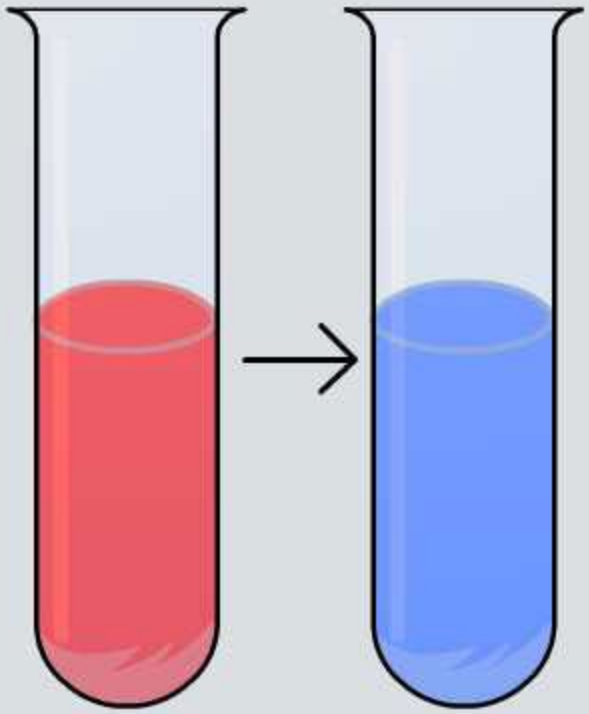
What Are Indicators?



Acids, alkalis and plants

Some flowers change color depending on whether they are growing in acidic or alkaline soil. Hydrangeas grow blue flowers in an acidic soil, but pink flowers in an alkaline soil.

The flowers contain compounds called anthocyanins, which act as **indicators**.

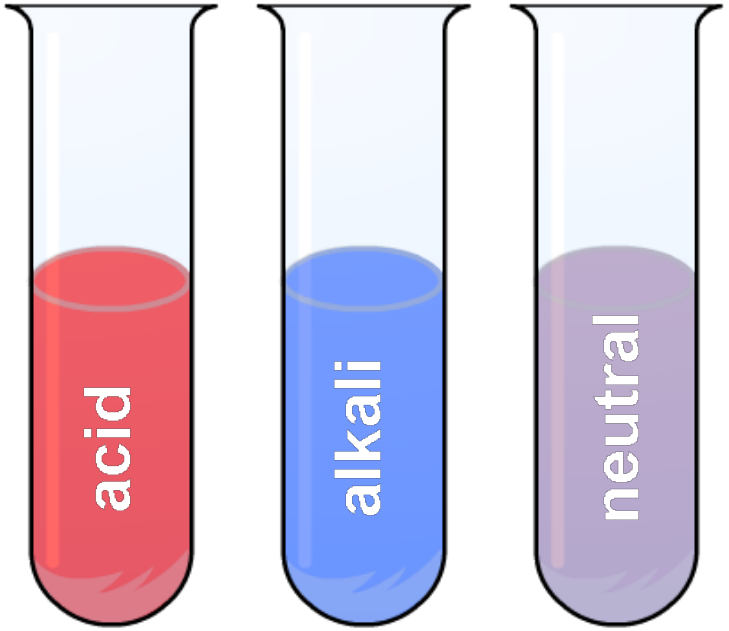
What is an indicator?

An **indicator** is a chemical that turns a different color depending on whether it is added to an acid or an alkali.

Litmus is a commonly used indicator. It can be added to filter paper, or used as a liquid. Litmus is made from lichen, which grows on stone and rock.

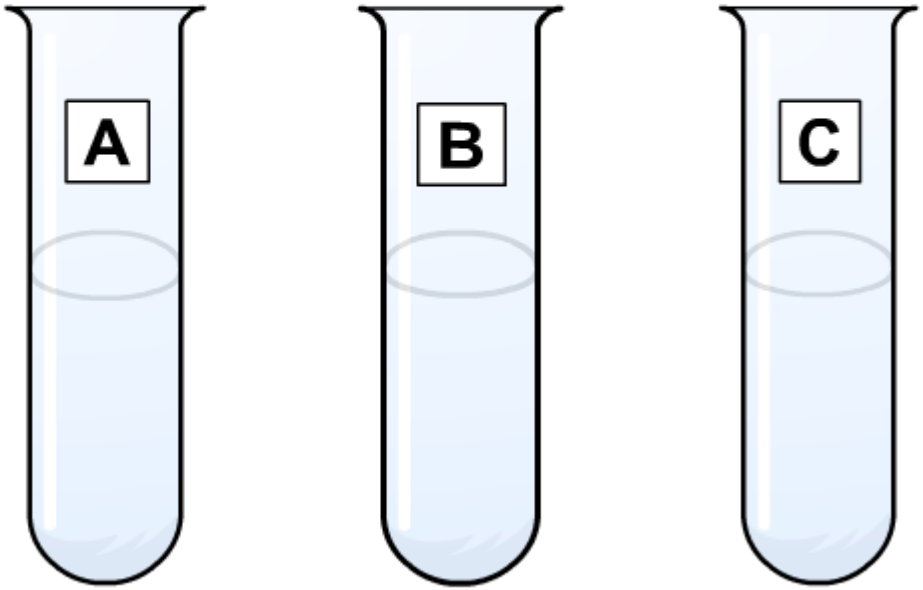
Litmus can be **blue** or **red**. Blue litmus turns red under acidic conditions (< pH 4.5), and red litmus turns blue under alkaline conditions (> pH 8.3).

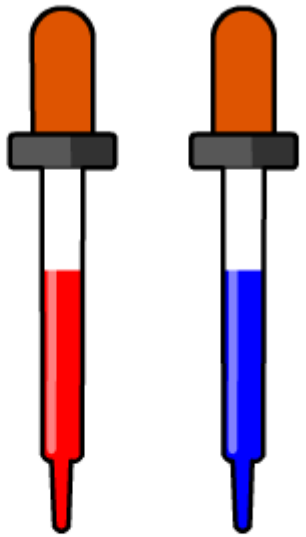
What color do you think litmus is under neutral conditions?



The litmus test

Are these solutions acidic or alkaline?





Click on the **red** pipette to add red litmus to the solutions.

The litmus test

Are these substances acidic, alkaline or neutral?

substance	blue litmus	red litmus	acidic, alkaline or neutral?
tap water	stayed blue	stayed red	
sour milk	turned red	stayed red	
ammonia solution	stayed blue	turned blue	
hydrochloric acid	turned red	stayed red	
sodium hydroxide	stayed blue	turned blue	

acid alkali neutral

?

solve

Making an indicator

Is it possible to make an indicator from a plant such as a red cabbage, or an onion?

Click "**play**" to find out.