

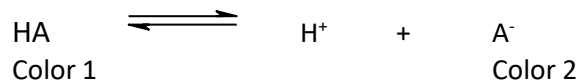
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5.4 HONORS CLASS WORKSHEET – ACID-BASE INDICATORS

An acid-base indicator is a weak acid which dissociates to give an anion with a color which is different from the original acid:



State and explain which color the indicator will show at high pH Color:

Reason:

State and explain which color the indicator will show at low pH Color:

Reason:

The pH at which the indicator changes color is called the of the indicator.

It varies from indicator to indicator. It depends on:

Some common acid-base indicators are:

Indicator	Color 1	Color 2	pH at which color changes	color during transitional pH range
methyl orange	pink	yellow	3.1 – 4.4	
methyl red	red	yellow	4.4 – 6.3	
bromothymol blue	yellow	blue	6.0 – 7.7	
phenolphthalein	colorless	purple	8.3 – 10.0	

Within the pH range over which the color changes, the indicator may appear as a third color as both colors are present in significant quantities.

Predict the color of each of the above indicators at the given pH value:

pH	methyl orange	methyl red	bromothymol blue	phenolphthalein	Mixture of all indicators
2.0					
3.5					
5.0					
6.5					
8.0					
9.5					
11.0					

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