

## COLOR CHANGES OF INDICATORS

25°C	Acid							neutral	Base							
$[H^+]$ (mol/L)	$10^0$	$10^{-1}$	$10^{-2}$	$10^{-3}$	$10^{-4}$	$10^{-5}$	$10^{-6}$	$10^{-7}$	$10^{-8}$	$10^{-9}$	$10^{-10}$	$10^{-11}$	$10^{-12}$	$10^{-13}$	$10^{-14}$	
pH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	pH range
Universal indicator	red	red	orange-red	orange	pale orange	orange-yellow	pale yellow	green-yellow	green	dark-green	blue	blue	blue	blue	blue	
cyanidin (red cabbage water)	red	red	red	cerise	purple	blue	blue	blue	aqua-marine	emerald-green	lime	lime	yellow	yellow	yellow	
blue litmus indicator	red	red	red	red	red	red	red	blue	blue	blue	blue	blue	blue	blue	blue	5.0 - 8.0
red litmus indicator	red	red	red	red	red	red	red	red	blue	blue	blue	blue	blue	blue	blue	5.0 - 8.0
phenolphthalein indicator	colour-less	colour-less	colour-less	colour-less	colour-less	colour-less	colour-less	colour-less	pink	pink	pink	pink	pink	pink	pink	8.3 - 10.0
thymol blue indicator	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	blue	blue	blue	blue	blue	blue	8.0 - 9.6
phenol red indicator	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	red	red	red	red	red	red	red	6.8 - 8.4
bromothymol blue indicator	yellow	yellow	yellow	yellow	yellow	yellow	yellow	blue	blue	blue	blue	blue	blue	blue	blue	6.2 - 7.6
methyl red indicator	pink	pink	pink	pink	pink	pink	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	4.4 - 6.0
bromocresol green indicator	yellow	yellow	yellow	yellow	yellow	pale blue-green	blue-green	blue-green	blue-green	blue-green	blue-green	blue-green	blue-green	blue-green	blue-green	3.8 - 5.4
methyl orange indicator	red	red	red	red	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	3.1 - 4.4
bromophenol blue	yellow	yellow	yellow	yellow	blue	blue	blue	blue	blue	blue	blue	blue	blue	blue	blue	3.0 - 4.6
cresol red	red	red	red	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	0.2 - 1.8
pH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	pH range