

Die pH-Skala



$c(\text{H}_3\text{O}^+)$	$c(\text{H}_3\text{O}^+)$	pH	$c(\text{OH}^-)$	$c(\text{OH}^-)$	$c(\text{H}_3\text{O}^+) \cdot c(\text{OH}^-)$
mol/L	mol/L		mol/L	mol/L	mol^2/L^2
1	10^0	0	0.0000000000000001	10^{-14}	10^{-14}
0.1	10^{-1}	1			
0.01	10^{-2}	2			
0.001					
0.0001					
0.00001					
0.000001					
0.0000001					
0.00000001					
0.000000001					
0.0000000001					
0.00000000001					
0.000000000001					
0.0000000000001					
0.00000000000001	10^{-14}	14	1	100	10^{-14}

$$\text{pH} = -\log c(\text{H}_3\text{O}^+)$$

$$c(\text{H}_3\text{O}^+) = 10^{-\text{pH}}$$

$$c(\text{H}_3\text{O}^+) \cdot c(\text{OH}^-) = 10^{-14} (\text{mol}^2/\text{L}^2) = K_w \quad (\text{Gleichgewichtskonstante von Wasser})$$

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$c(\text{H}_3\text{O}^+)$	$c(\text{H}_3\text{O}^+)$	pH	$c(\text{OH}^-)$	$c(\text{OH}^-)$	$c(\text{H}_3\text{O}^+) \cdot c(\text{OH}^-)$
mol/L	mol/L		mol/L	mol/L	mol^2/L^2
1	10^0	0	0.0000000000000001	10^{-14}	10^{-14}
0.1	10^{-1}	1	0.000000000000001	10^{-13}	10^{-14}
0.01	10^{-2}	2	0.00000000000001	10^{-12}	10^{-14}
0.001	10^{-3}	3	0.000000000001	10^{-11}	10^{-14}
0.0001	10^{-4}	4	0.0000000001	10^{-10}	10^{-14}
0.00001	10^{-5}	5	0.000000001	10^{-9}	10^{-14}
0.000001	10^{-6}	6	0.00000001	10^{-8}	10^{-14}
0.0000001	10^{-7}	7	0.0000001	10^{-7}	10^{-14}
0.00000001	10^{-8}	8	0.000001	10^{-6}	10^{-14}
0.000000001	10^{-9}	9	0.00001	10^{-5}	10^{-14}
0.0000000001	10^{-10}	10	0.0001	10^{-4}	10^{-14}
0.00000000001	10^{-11}	11	0.001	10^{-3}	10^{-14}
0.000000000001	10^{-12}	12	0.01	10^{-2}	10^{-14}
0.0000000000001	10^{-13}	13	0.1	10^{-1}	10^{-14}
0.00000000000001	10^{-14}	14	1	1	10^{-14}

$$\text{pH} = -\log c(\text{H}_3\text{O}^+)$$

$$c(\text{H}_3\text{O}^+) = 10^{-\text{pH}}$$

$$c(\text{H}_3\text{O}^+) \cdot c(\text{OH}^-) = 10^{-14} (\text{mol}^2/\text{L}^2) = K_w \text{ (Gleichgewichtskonstante von Wasser)}$$