



Constantes de acidez y basicidad a 25 °C en solución acuosa

■ 1. Constantes de acidez

Especie	Ecuación ácido-base	K_a	pK_a
	Ácido 1 + Base 2 $\rightleftharpoons$ Base 1 + Ácido 2		
ion hidrogenosulfato	$\text{HSO}_4^- + \text{H}_2\text{O} \rightleftharpoons \text{SO}_4^{2-} + \text{H}_3\text{O}^+$	$1,20 \times 10^{-2}$	1,92
ácido fosfórico	$\text{H}_3\text{PO}_4 + \text{H}_2\text{O} \rightleftharpoons \text{H}_2\text{PO}_4^- + \text{H}_3\text{O}^+$	$7,59 \times 10^{-3}$	2,12
ácido salicílico	$\text{C}_6\text{H}_4\text{OHCOOH} + \text{H}_2\text{O} \rightleftharpoons \text{C}_6\text{H}_4\text{OHCOO}^- + \text{H}_3\text{O}^+$	$1,07 \times 10^{-3}$	2,97
ácido láctico	$\text{C}_2\text{H}_4\text{OHCOOH} + \text{H}_2\text{O} \rightleftharpoons \text{C}_2\text{H}_4\text{OHCOO}^- + \text{H}_3\text{O}^+$	$8,40 \times 10^{-4}$	3,08
ácido fluorhídrico	$\text{HF} + \text{H}_2\text{O} \rightleftharpoons \text{F}^- + \text{H}_3\text{O}^+$	$6,76 \times 10^{-4}$	3,17
ácido nitroso	$\text{HNO}_2 + \text{H}_2\text{O} \rightleftharpoons \text{NO}_2^- + \text{H}_3\text{O}^+$	$4,57 \times 10^{-4}$	3,34
ácido fórmico	$\text{HCOOH} + \text{H}_2\text{O} \rightleftharpoons \text{HCOO}^- + \text{H}_3\text{O}^+$	$1,78 \times 10^{-4}$	3,75
ácido ascórbico	$\text{C}_5\text{H}_7\text{O}_4\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{C}_5\text{H}_7\text{O}_4\text{COO}^- + \text{H}_3\text{O}^+$	$7,94 \times 10^{-5}$	4,10
ácido benzoico	$\text{C}_6\text{H}_5\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{C}_6\text{H}_5\text{COO}^- + \text{H}_3\text{O}^+$	$6,50 \times 10^{-5}$	4,19
ácido acético	$\text{CH}_3\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{CH}_3\text{COO}^- + \text{H}_3\text{O}^+$	$1,78 \times 10^{-5}$	4,75
ácido propanoico	$\text{CH}_3\text{CH}_2\text{COOH} + \text{H}_2\text{O} \rightleftharpoons \text{CH}_3\text{CH}_2\text{COO}^- + \text{H}_3\text{O}^+$	$1,40 \times 10^{-5}$	4,85
ácido carbónico	$\text{H}_2\text{CO}_3 + \text{H}_2\text{O} \rightleftharpoons \text{HCO}_3^- + \text{H}_3\text{O}^+$	$4,47 \times 10^{-7}$	6,35
ácido sulfhídrico	$\text{H}_2\text{S} + \text{H}_2\text{O} \rightleftharpoons \text{HS}^- + \text{H}_3\text{O}^+$	$9,12 \times 10^{-8}$	7,04
ion dihidrogenofosfato	$\text{H}_2\text{PO}_4^- + \text{H}_2\text{O} \rightleftharpoons \text{HPO}_4^{2-} + \text{H}_3\text{O}^+$	$6,20 \times 10^{-8}$	7,21
ácido hipocloroso	$\text{HClO} + \text{H}_2\text{O} \rightleftharpoons \text{ClO}^- + \text{H}_3\text{O}^+$	$2,90 \times 10^{-8}$	7,54
ácido hipobromoso	$\text{HBrO} + \text{H}_2\text{O} \rightleftharpoons \text{BrO}^- + \text{H}_3\text{O}^+$	$2,50 \times 10^{-9}$	8,60
ion amonio	$\text{NH}_4^+ + \text{H}_2\text{O} \rightleftharpoons \text{NH}_3 + \text{H}_3\text{O}^+$	$5,62 \times 10^{-10}$	9,25
ion hidrogenocarbonato	$\text{HCO}_3^- + \text{H}_2\text{O} \rightleftharpoons \text{CO}_3^{2-} + \text{H}_3\text{O}^+$	$4,70 \times 10^{-11}$	10,33
ácido hipoiodoso	$\text{HIO} + \text{H}_2\text{O} \rightleftharpoons \text{IO}^- + \text{H}_3\text{O}^+$	$3,98 \times 10^{-11}$	10,40
ion hidrogenofosfato	$\text{HPO}_4^{2-} + \text{H}_2\text{O} \rightleftharpoons \text{PO}_4^{3-} + \text{H}_3\text{O}^+$	$3,50 \times 10^{-13}$	12,46

■ 2. Constantes de basicidad

Especie	Ecuación ácido-base	K_b	pK_b
	Base 1 + Ácido 2 $\rightleftharpoons$ Ácido 1 + Base 2		
ion fosfato	$\text{PO}_4^{3-} + \text{H}_2\text{O} \rightleftharpoons \text{HPO}_4^{2-} + \text{OH}^-$	$3,16 \times 10^{-2}$	1,50
dimetilamina	$(\text{CH}_3)_2\text{NH} + \text{H}_2\text{O} \rightleftharpoons (\text{CH}_3)_2\text{NH}_2^+ + \text{OH}^-$	$7,40 \times 10^{-4}$	3,13
dietilamina	$(\text{C}_2\text{H}_5)_2\text{NH} + \text{H}_2\text{O} \rightleftharpoons (\text{C}_2\text{H}_5)_2\text{NH}_2^+ + \text{OH}^-$	$9,55 \times 10^{-4}$	3,02
etilamina	$\text{C}_2\text{H}_5\text{NH}_2 + \text{H}_2\text{O} \rightleftharpoons \text{C}_2\text{H}_5\text{NH}_3^+ + \text{OH}^-$	$5,01 \times 10^{-4}$	3,30
metilamina	$\text{CH}_3\text{NH}_2 + \text{H}_2\text{O} \rightleftharpoons \text{CH}_3\text{NH}_3^+ + \text{OH}^-$	$4,37 \times 10^{-4}$	3,36
propilamina	$\text{C}_3\text{H}_7\text{NH}_2 + \text{H}_2\text{O} \rightleftharpoons \text{C}_3\text{H}_7\text{NH}_3^+ + \text{OH}^-$	$3,80 \times 10^{-4}$	3,42
ion carbonato	$\text{CO}_3^{2-} + \text{H}_2\text{O} \rightleftharpoons \text{HCO}_3^- + \text{OH}^-$	$2,10 \times 10^{-4}$	3,68
trimetilamina	$(\text{CH}_3)_3\text{N} + \text{H}_2\text{O} \rightleftharpoons (\text{CH}_3)_3\text{NH}^+ + \text{OH}^-$	$7,40 \times 10^{-5}$	4,13
amoníaco	$\text{NH}_3 + \text{H}_2\text{O} \rightleftharpoons \text{NH}_4^+ + \text{OH}^-$	$1,78 \times 10^{-5}$	4,75
hidracina	$\text{H}_2\text{NNH}_2 + \text{H}_2\text{O} \rightleftharpoons \text{H}_2\text{NNH}_3^+ + \text{OH}^-$	$3,02 \times 10^{-6}$	5,52
piridina	$\text{C}_5\text{H}_5\text{N} + \text{H}_2\text{O} \rightleftharpoons \text{C}_5\text{H}_5\text{NH}^+ + \text{OH}^-$	$1,66 \times 10^{-9}$	8,78
ion acetato	$\text{CH}_3\text{COO}^- + \text{H}_2\text{O} \rightleftharpoons \text{CH}_3\text{COOH} + \text{OH}^-$	$5,62 \times 10^{-10}$	9,25
anilina	$\text{C}_6\text{H}_5\text{NH}_2 + \text{H}_2\text{O} \rightleftharpoons \text{C}_6\text{H}_5\text{NH}_3^+ + \text{OH}^-$	$4,27 \times 10^{-10}$	9,37
ion fluoruro	$\text{F}^- + \text{H}_2\text{O} \rightleftharpoons \text{HF} + \text{OH}^-$	$1,48 \times 10^{-11}$	10,83