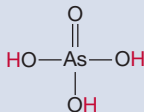
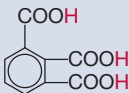
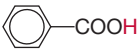
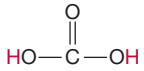
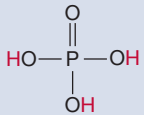
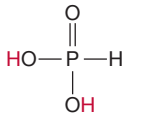


# Appendice E

## Dati per alcuni acidi e basi

Costanti di dissociazione acida per acidi deboli in acqua a 25 °C\*

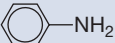
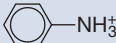
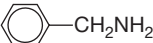
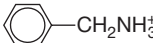
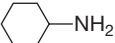
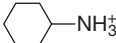




Nome	Formula <sup>†</sup>	$K_a/M$	$pK_a$
acido acetico	CH <sub>3</sub> COOH	$1,8 \times 10^{-5}$	4,74
acido arsenico		$5,5 \times 10^{-3}$ $1,7 \times 10^{-7}$ $5,1 \times 10^{-12}$	2,26 6,76 11,29
acido azotidrico (azoturo di idrogeno)	HN <sub>3</sub>	$3 \times 10^{-5}$	4,6
acido benzene-1,2,3-tricarbossilico (acido trimellitico)		$1,3 \times 10^{-3}$ $1,8 \times 10^{-5}$ $7,4 \times 10^{-8}$	2,88 4,75 7,13
acido benzoico		$6,3 \times 10^{-5}$	4,20
acido borico	HOB(OH) <sub>2</sub>	$5,4 \times 10^{-10}$	9,27
acido bromoacetico	BrCH <sub>2</sub> COOH	$1,3 \times 10^{-3}$	2,90
acido butanoico	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> COOH	$1,5 \times 10^{-5}$	4,83
acido carbonico		$4,5 \times 10^{-7}$ $4,7 \times 10^{-11}$	6,35 10,33
acido cianico	HCNO	$3,5 \times 10^{-4}$	3,46
acido cianidrico	HCN	$6,2 \times 10^{-10}$	9,21
acido cloroacetico	ClCH <sub>2</sub> COOH	$1,4 \times 10^{-3}$	2,87
acido cloroso	O=Cl-OH	$1,2 \times 10^{-2}$	1,94
acido dicloroacetico	Cl <sub>2</sub> CHCOOH	$4,5 \times 10^{-2}$	1,35
acido fluoridrico	HF	$6,3 \times 10^{-4}$	3,20
acido fluoroacetico	FCH <sub>2</sub> COOH	$2,6 \times 10^{-3}$	2,59
acido formico	HCOOH	$1,8 \times 10^{-4}$	3,75
acido fosforico		$6,9 \times 10^{-3}$ $6,2 \times 10^{-8}$ $4,8 \times 10^{-13}$	2,16 7,21 12,32
acido fosforoso		$5 \times 10^{-2}$ $2,0 \times 10^{-7}$	1,3 6,70
acido iodico	HIO <sub>3</sub>	0,17	0,78
acido ipobromoso	HOBBr	$2,8 \times 10^{-9}$	8,55
acido ipocloroso	HOCl	$4,0 \times 10^{-8}$	7,40
acido ipoiodoso	HOI	$3 \times 10^{-11}$	10,5
acido lattico	CH <sub>3</sub> CHOHCOOH	$1,4 \times 10^{-4}$	3,86
acido nitroso	HNO <sub>2</sub>	$5,6 \times 10^{-4}$	3,25

acido ossalico	$\text{HOOC-COOH}$	0,056 $1,5 \times 10^{-4}$	1,25 3,81
acido propanoico	$\text{CH}_3\text{CH}_2\text{COOH}$	$1,4 \times 10^{-5}$	4,87
acido solfidrico	$\text{H}_2\text{S}$	$8,9 \times 10^{-8}$ $1,2 \times 10^{-13}$	7,05 12,91
acido solforico	$\text{H}_2\text{SO}_4$	forte $1,0 \times 10^{-2}$	forte 1,99
acido solforoso	$\text{H}_2\text{SO}_3$	$1,4 \times 10^{-2}$ $6 \times 10^{-8}$	1,85 7,2
acido tiocianico	$\text{HSCN}$	63,1	-1,8
acido tiosolforico	$\begin{array}{c} \text{O} \\ \parallel \\ \text{HO}-\text{S}-\text{OH} \\ \parallel \\ \text{S} \end{array}$	0,30 $3,0 \times 10^{-2}$	0,52 1,52

\*I valori di  $\text{p}K_a$  sono tratti da *CRC Handbook of Chemistry and Physics*, 87th ed., 2006-2007, tranne quelli scritti in blu.

†I protoni acidi sono indicati in rosso.

Costanti di protonazione basica per basi deboli in acqua a 25 °C\*

Nome	Formula	Forma protonata	$K_b/\text{M}$	$\text{p}K_b^*$
ammoniaca	$\text{NH}_3$	$\text{NH}_4^+$	$1,8 \times 10^{-5}$	4,75
anilina			$7,4 \times 10^{-10}$	9,13
benzilammina			$2,2 \times 10^{-5}$	4,66
butilammina	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2$	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_3^+$	$4,0 \times 10^{-4}$	3,40
cicloesilammina			$4,4 \times 10^{-4}$	3,36
dietilammina	$(\text{C}_2\text{H}_5)_2\text{NH}$	$(\text{C}_2\text{H}_5)_2\text{NH}_2^+$	$6,9 \times 10^{-4}$	3,16
dimetilammina	$(\text{CH}_3)_2\text{NH}$	$(\text{CH}_3)_2\text{NH}_2^+$	$5,4 \times 10^{-4}$	3,27
etanolammina	$\text{HOCH}_2\text{CH}_2\text{NH}_2$	$\text{HOCH}_2\text{CH}_2\text{NH}_3^+$	$3,2 \times 10^{-5}$	4,50
etilammina	$\text{CH}_3\text{CH}_2\text{NH}_2$	$\text{CH}_3\text{CH}_2\text{NH}_3^+$	$4,5 \times 10^{-4}$	3,35
idrossilammina	$\text{HONH}_2$	$\text{HONH}_3^+$	$8,7 \times 10^{-9}$	8,06
metilammina	$\text{CH}_3\text{NH}_2$	$\text{CH}_3\text{NH}_3^+$	$4,6 \times 10^{-4}$	3,34
piperidina			$1,3 \times 10^{-3}$	2,88
piridina			$1,7 \times 10^{-9}$	8,77
propilammina	$\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$	$\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_3^+$	$3,5 \times 10^{-4}$	3,46
trimetilammina	$(\text{CH}_3)_3\text{N}$	$(\text{CH}_3)_3\text{NH}^+$	$6,3 \times 10^{-5}$	4,20

\*I valori di  $\text{p}K_b$  sono ricavati da dati presi da *CRC Handbook of Chemistry and Physics*, 87th ed., 2006-2007.