

**ACIDITY AND BASICITY CONSTANTS FOR SUBSTANCES IN AQUEOUS SOLUTION AT 25°C**

ACID		$-\log K_a$ = $pK_a$	CONJUGATE BASE		$-\log K_b$ = $pK_b$
HClO <sub>4</sub>	Perchloric Acid	-7	ClO <sub>4</sub> <sup>-</sup>	Perchlorate Ion	21
HCl	Hydrochloric Acid	~ -3	Cl <sup>-</sup>	Chloride Ion	17
H <sub>2</sub> SO <sub>4</sub>	Sulfuric Acid	~ -3	HSO <sub>4</sub> <sup>-</sup>	Bisulfate Ion	17
HNO <sub>3</sub>	Nitric Acid	-0	NO <sub>3</sub> <sup>-</sup>	Nitrate Ion	14
H <sub>3</sub> O <sup>+</sup>	Hydronium Ion	0	H <sub>2</sub> O	Water	14
HIO <sub>3</sub>	Iodic Acid	0.8	IO <sub>3</sub> <sup>-</sup>	Iodate Ion	13.2
HSO <sub>4</sub> <sup>-</sup>	Bisulfate Ion	2	SO <sub>4</sub> <sup>2-</sup>	Sulfate Ion	12
H <sub>3</sub> PO <sub>4</sub>	Phosphoric Acid	2.1	H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>	Dihydrogen Phosphate Ion	11.9
Fe(H <sub>2</sub> O) <sub>6</sub> <sup>3+</sup>	Ferric Ion	2.2	Fe(H <sub>2</sub> O) <sub>5</sub> OH <sup>2+</sup>	Hydroxo Ion(III) Complex	11.8
HF	Hydrofluoric Acid	3.2	F <sup>-</sup>	Fluoride Ion	10.8
HNO <sub>2</sub>	Nitrous Acid	4.5	NO <sub>2</sub> <sup>-</sup>	Nitrite Ion	9.5
CH <sub>3</sub> COOH	Acetic Acid	4.7	CH <sub>3</sub> COO <sup>-</sup>	Acetate Ion	9.3
Al(H <sub>2</sub> O) <sub>6</sub> <sup>3+</sup>	Aluminum Ion	4.9	Al(H <sub>2</sub> O) <sub>5</sub> OH <sup>2+</sup>	Hydroxo Aluminum(III) Complex	9.1
H <sub>2</sub> CO <sub>3</sub> <sup>*</sup>	Carbon Dioxide & Carbonic Acid	6.3	HCO <sub>3</sub> <sup>-</sup>	Bicarbonate Ion	7.7
H <sub>2</sub> S	Hydrogen Sulfide	7.1	HS <sup>-</sup>	Bisulfide Ion	6.9
H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>	Dihydrogen Phosphate	7.2	HPO <sub>4</sub> <sup>2-</sup>	Monohydrogen Phosphate Ion	6.8
HOCl	Hypochlorous Acid	7.5	OCl <sup>-</sup>	Hypochlorite Ion	6.4
HCN	Hydrocyanic Acid	9.3	CN <sup>-</sup>	Cyanide Ion	4.7
H <sub>3</sub> BO <sub>3</sub>	Boric Acid	9.3	B(OH) <sub>4</sub> <sup>-</sup>	Borate Ion	4.7
NH <sub>4</sub> <sup>+</sup>	Ammonium Ion	9.3	NH <sub>3</sub>	Ammonia	4.7
H <sub>4</sub> SiO <sub>4</sub>	Orthosilicic Acid	9.5	H <sub>3</sub> SiO <sub>4</sub> <sup>-</sup>	Trihydrogen Silicate Ion	4.5
C <sub>6</sub> H <sub>5</sub> OH	Phenol	9.9	C <sub>6</sub> H <sub>5</sub> O <sup>-</sup>	Phenolate Ion	4.1
HCO <sub>3</sub> <sup>-</sup>	Bicarbonate Ion	10.3	CO <sub>3</sub> <sup>2-</sup>	Carbonate Ion	3.7
HPO <sub>4</sub> <sup>2-</sup>	Monohydrogen Phosphate	12.3	PO <sub>4</sub> <sup>3-</sup>	Phosphate Ion	1.7
H <sub>3</sub> SiO <sub>4</sub> <sup>-</sup>	Trihydrogen Silicate	12.6	H <sub>2</sub> SiO <sub>4</sub> <sup>2-</sup>	Dihydrogen Silicate Ion	1.4
HS <sup>-</sup>	Bisulfide Ion	14	S <sup>2-</sup>	Sulfide Ion	0
H <sub>2</sub> O	Water	14	OH <sup>-</sup>	Hydroxide Ion	0
NH <sub>3</sub>	Ammonia	~23	NH <sub>2</sub> <sup>-</sup>	Amide Ion	-9
OH <sup>-</sup>	Hydroxide Ion	~24	O <sup>2-</sup>	Oxide Ion	-10