Relative Strengths of Acids and Bases and Selected K_A Values

increasing acid strength ↑

increasing base strength ↓

strong acids ↑ / weak bases ↑ / inactive bases

weak acids ↓ / strong bases ↓ / active bases ↓

ACID				CONJUGATE BASE	K_A
Perchloric Acid	**$HClO_4$** + H_2O	<=>	**ClO_4^{1-}** + H_3O^{1+}	perchlorate	
Hydriodic Acid	**HI** + H_2O	<=>	**I^{1-}** + H_3O^{1+}	iodide	
Hydrobromic Acid	**HBr** + H_2O	<=>	**Br^{1-}** + H_3O^{1+}	bromide	
Hydrochloric Acid	**HCl** + H_2O	<=>	**Cl^{1-}** + H_3O^{1+}	chloride	
Nitric Acid	**HNO_3** + H_2O	<=>	**NO_3^{1-}** + H_3O^{1+}	nitrate	
Sulfuric Acid	**H_2SO_4** + H_2O	<=>	**HSO_4^{1-}** + H_3O^{1+}	bisulphate	
Hydronium	**H_3O^{1+}** + H_2O	<=>	**H_2O** + H_3O^{1+}	water	
Iodic Acid	**HIO_3** + H_2O	<=>	**IO_3^{1-}** + H_3O^{1+}	iodate	1.6×10^{-1}
Sulfurous Acid	**H_2SO_3** + H_2O	<=>	**HSO_3^{1-}** + H_3O^{1+}	bisulphite	1.3×10^{-2}
Hydrogen Sulfate	**HSO_4^{1-}** + H_2O	<=>	**SO_4^{2-}** + H_3O^{1+}	sulphate	1.2×10^{-2}
Phosphoric Acid	**H_3PO_4** + H_2O	<=>	**$H_2PO_4^{1-}$** + H_3O^{1+}	dihydrogen phosphate	7.6×10^{-3}
Benzoic Acid	**C_6H_5COOH** + H_2O	<=>	**$C_6H_5COO^{1-}$** + H_3O^{1+}	benzoate	6.6×10^{-3}
Hydrofluoric Acid	**HF** + H_2O	<=>	**F^{1-}** + H_3O^{1+}	fluoride	6.8×10^{-4}
Nitrous Acid	**HNO_2** + H_2O	<=>	**NO_2^{1-}** + H_3O^{1+}	nitrite	5.1×10^{-4}
Formic Acid	**$HCOOH$** + H_2O	<=>	**$HCOO^{1-}$** + H_3O^{1+}	formate	2.0×10^{-4}
Acetic Acid	**CH_3COOH** + H_2O	<=>	**CH_3COO^{1-}** + H_3O^{1+}	acetate	1.8×10^{-5}
Carbonic Acid	**H_2CO_3** + H_2O	<=>	**HCO_3^{1-}** + H_3O^{1+}	bicarbonate	4.3×10^{-7}
Hydrogen Sulfide	**H_2S** + H_2O	<=>	**HS^{1-}** + H_3O^{1+}	bisulphide	1.3×10^{-7}
Hydrogen Sulfite	**HSO_3^{1-}** + H_2O	<=>	**SO_3^{2-}** + H_3O^{1+}	sulphite	6.2×10^{-8}
Hypochlorous Acid	**$HClO$** + H_2O	<=>	**ClO^{1-}** + H_3O^{1+}	hypochlorite	3.0×10^{-8}
Boric Acid	**H_3BO_3** + H_2O	<=>	**$H_2BO_3^{1-}$** + H_3O^{1+}	dihydrogen borate	5.9×10^{-10}
Ammonium	**NH_4^{1+}** + H_2O	<=>	**NH_3** + H_3O^{1+}	ammonia	5.6×10^{-10}
Hydrocyanic Acid	**HCN** + H_2O	<=>	**CN^{1-}** + H_3O^{1+}	cyanide	4.0×10^{-10}
Hydrogen Carbonate	**HCO_3^{1-}** + H_2O	<=>	**CO_3^{2-}** + H_3O^{1+}	carbonate	5.6×10^{-11}
Water	**H_2O** + H_2O	<=>	**OH^{1-}** + H_3O^{1+}	hydroxide	1.0×10^{-14}
Hydrogen Sulfide	**HS^{1-}** + H_2O	<=>	**S^{2-}** + H_3O^{1+}	sulphide	7.1×10^{-15}
Hydroxide	**OH^{1-}** + H_2O	<=>	**O^{2-}** + H_3O^{1+}	oxide	very small
Ammonia	**NH_3** + H_2O	<=>	**NH_2^{1-}** + H_3O^{1+}	amide	very small
Hydrogen	**H_2** + H_2O	<=>	**H^{1-}** + H_3O^{1+}	hydride	very small

acids and conjugate bases are in bold