

Relative Strengths of Acids and Bases and Selected K_a Values

	ACID		CONJUGATE BASE	K_a	
	Perchloric Acid	HClO₄ + H ₂ O <=> ClO₄¹⁻ + H ₃ O ¹⁺	perchlorate		
	Hydriodic Acid	HI + H ₂ O <=> I¹⁻ + H ₃ O ¹⁺	iodide		
	Hydrobromic Acid	HBr + H ₂ O <=> Br¹⁻ + H ₃ O ¹⁺	bromide		
↑	Hydrochloric Acid	HCl + H ₂ O <=> Cl¹⁻ + H ₃ O ¹⁺	chloride		↓
↑	Nitric Acid	HNO₃ + H ₂ O <=> NO₃¹⁻ + H ₃ O ¹⁺	nitrate		↓
↑	Sulfuric Acid	H₂SO₄ + H ₂ O <=> HSO₄¹⁻ + H ₃ O ¹⁺	bisulphate		↓
↑	Hydronium	H₃O¹⁺ + H ₂ O <=> H₂O + H ₃ O ¹⁺	water		↓
↑	Iodic Acid	HIO₃ + H ₂ O <=> IO₃¹⁻ + H ₃ O ¹⁺	iodate	1.6 × 10 ⁻¹	↓
↑	Sulfurous Acid	H₂SO₃ + H ₂ O <=> HSO₃¹⁻ + H ₃ O ¹⁺	bisulphite	1.3 × 10 ⁻²	↓
↑	Hydrogen Sulfate	HSO₄¹⁻ + H ₂ O <=> SO₄²⁻ + H ₃ O ¹⁺	sulphate	1.2 × 10 ⁻²	↓
↑	Phosphoric Acid	H₃PO₄ + H ₂ O <=> H₂PO₄¹⁻ + H ₃ O ¹⁺	dihydrogen phosphate	7.6 × 10 ⁻³	↓
↑	Benzoic Acid	C₆H₅COOH + H ₂ O <=> C₆H₅COO¹⁻ + H ₃ O ¹⁺	benzoate	6.6 × 10 ⁻³	↓
↑	Hydrofluoric Acid	HF + H ₂ O <=> F¹⁻ + H ₃ O ¹⁺	fluoride	6.8 × 10 ⁻⁴	↓
↑	Nitrous Acid	HNO₂ + H ₂ O <=> NO₂¹⁻ + H ₃ O ¹⁺	nitrite	5.1 × 10 ⁻⁴	↓
↑	Formic Acid	HCOOH + H ₂ O <=> HCOO¹⁻ + H ₃ O ¹⁺	formate	2.0 × 10 ⁻⁴	↓
↑	Acetic Acid	CH₃COOH + H ₂ O <=> CH₃COO¹⁻ + H ₃ O ¹⁺	acetate	1.8 × 10 ⁻⁵	↓
↑	Carbonic Acid	H₂CO₃ + H ₂ O <=> HCO₃¹⁻ + H ₃ O ¹⁺	bicarbonate	4.3 × 10 ⁻⁷	↓
↑	Hydrogen Sulfide	H₂S + H ₂ O <=> HS¹⁻ + H ₃ O ¹⁺	bisulphide	1.3 × 10 ⁻⁷	↓
↑	Hydrogen Sulfite	HSO₃¹⁻ + H ₂ O <=> SO₃²⁻ + H ₃ O ¹⁺	sulphite	6.2 × 10 ⁻⁸	↓
↑	Hypochlorous Acid	HClO + H ₂ O <=> ClO¹⁻ + H ₃ O ¹⁺	hypochlorite	3.0 × 10 ⁻⁸	↓
↑	Boric Acid	H₃BO₃ + H ₂ O <=> H₂BO₃¹⁻ + H ₃ O ¹⁺	dihydrogen borate	5.9 × 10 ⁻¹⁰	↓
↑	Ammonium	NH₄¹⁺ + H ₂ O <=> NH₃ + H ₃ O ¹⁺	ammonia	5.6 × 10 ⁻¹⁰	↓
↑	Hydrocyanic Acid	HCN + H ₂ O <=> CN¹⁻ + H ₃ O ¹⁺	cyanide	4.0 × 10 ⁻¹⁰	↓
↑	Hydrogen Carbonate	HCO₃¹⁻ + H ₂ O <=> CO₃²⁻ + H ₃ O ¹⁺	carbonate	5.6 × 10 ⁻¹¹	↓
↑	Water	H₂O + H ₂ O <=> OH¹⁻ + H ₃ O ¹⁺	hydroxide	1.0 × 10 ⁻¹⁴	↓
	Hydrogen Sulfide	HS¹⁻ + H ₂ O <=> S²⁻ + H ₃ O ¹⁺	sulphide	7.1 × 10 ⁻¹⁵	↓
	Hydroxide	OH¹⁻ + H ₂ O <=> O²⁻ + H ₃ O ¹⁺	oxide	very small	↓
	Ammonia	NH₃ + H ₂ O <=> NH₂¹⁻ + H ₃ O ¹⁺	amide	very small	↓
	Hydrogen	H₂ + H ₂ O <=> H¹⁻ + H ₃ O ¹⁺	hydride	very small	↓

acids and conjugate bases are in bold