Strong acids and bases

Strong = ionises completely in water (one-way arrow). Weak = ionises partly (equilibrium arrow). Strong is NOT the same as concentrated: strength is the fraction ionised, concentration is moles per dm3.

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The seven strong acids

Acid	Formula	Where you meet it
Hydrochloric acid	HCl	Stomach acid, lab reagent
Hydrobromic acid	HBr	Lab reagent
Hydroiodic acid	HI	Lab reagent, strongest of the three
Nitric acid	HNO3	Fertilisers, explosives
Sulfuric acid	H2SO4	Car batteries, industry (first proton only)
Perchloric acid	HClO4	Analytical chemistry
Chloric acid	HClO3	Rarely met at school

All other common acids are weak: ethanoic, citric, carbonic, phosphoric, methanoic, hydrofluoric.

The strong bases

Base	Formula	Where you meet it
Lithium hydroxide	LiOH	Batteries, CO2 scrubbers
Sodium hydroxide	NaOH	Caustic soda, drain cleaner, soap
Potassium hydroxide	KOH	Caustic potash, alkaline batteries
Rubidium and caesium hydroxide	RbOH, CsOH	Rare
Calcium hydroxide	Ca(OH)2	Limewater, slaked lime (strong but only slightly soluble)
Strontium and barium hydroxide	Sr(OH)2, Ba(OH)2	Lab reagents

Weak bases: ammonia, amines, carbonates and hydrogencarbonates.

Same concentration (0.1 mol/dm3), strong vs weak acid

Measurement	HCl (strong)	Ethanoic acid (weak)
pH	1	about 2.9
Conductivity	high	low
Rate with magnesium	fast	slow
Volume of 0.1 mol/dm3 NaOH to neutralise 25 cm3	25 cm3	25 cm3 (same amount of acid)

Full notes: sciencewithshobha.com/blog/strong-acids-and-bases-list-with-examples-and-how-to-tell-strong-from-weak/