

| | Acid | Conj. Base | pKa | Comment | |
|----------------------------|---|--|-------------------------------|---|-----------------------------|
| Increasing Acid Strength ↑ | SO ₃ / FSO ₃ H/SbF ₅ | SbF ₆ ⁻ | -?? | Super Acids all too strong to measure | |
| | HF / SbF ₅ | SbF ₆ ⁻ | | | |
| | F ₃ CSO ₃ H | F ₃ CSO ₃ ⁻ | | | |
| | | HClO ₄ | ClO ₄ ⁻ | -10 | |
| | | HI | I ⁻ | -10 | |
| | | HBr | Br ⁻ | -9 | hydrobromic acid |
| | | HCl | Cl ⁻ | -8 | hydrochloric acid |
| | | | | -8 | protonated aldehydes |
| | | | | -7 | protonated esters |
| | | | | -7 | protonated ketones |
| | | | | -6 | protonated carboxylic acids |
| | | | | -6 | protonated phenols |
| | | | | -3 | sulfonic acids |
| | | H ₂ SO ₄ | HSO ₄ ⁻ | -3 | sulfuric acid |
| | | | | -3 | protonated ethers |
| | | | -2 | protonated alcohols | |
| | HNO ₃ | NO ₃ ⁻ | -1.3 | nitric acid | |
| | H ₃ O ⁺ | H ₂ O | 0 | hydronium; H ⁺ (aq) | |
| | HSO ₄ ⁻ | SO ₄ ²⁻ | 1.99 | second H of sulfuric acid | |
| | H-F | F ⁻ | 3.18 | hydrofluoric acid | |
| | HNO ₂ | NO ₂ ⁻ | 3.3 | nitrous acid | |
| | | | -6 to +5 | anilines; pKa very sensitive to ring substituents | |

Increasing Base Strength ↓

| | Acid | Conj. Base | pKa | Comment |
|--------------------------|------------------------------------|-------------------------------|------------|--|
| Increasing Acid Strength | | | 4.0 to 5.0 | carboxylic acids |
| | H ₂ CO ₃ | HCO ₃ ⁻ | 6.35 | carbonic acid |
| | H ₂ S | HS ⁻ | 7.00 | hydrogen sulfide |
| | | | 9.00 | 2,4-pentandione |
| | NH ₄ ⁺ | NH ₃ | 9.24 | ammonium ion |
| | | | 4-11 | depends on substitution plain phenol has a pKa=10 |
| | R-CH ₂ -NO ₂ | | 10.0 | aliphatic nitro |
| | HCO ₃ ⁻ | CHO ₃ ⁻ | 10.3 | bicarbonate |
| | | | 11.0 | ethyl acetoacetate |
| | | | 13.0 | diethyl malonate |
| | H-O-H | HO ⁻ | 14.0 | water pKa |
| | | | 15.0 | cyclopentadiene: World's Strongest Carbon Acid!! |
| | | | 17.0 | amides |
| | R-O-H | R-O ⁻ | 16-19 | alcohols, ethanol pKa = 16 |
| | | | 20-21 | alpha H of ketones |
| | | | 25 | alpha H of esters |
| | R-CH ₂ -CN | | 25 | alpha to nitrile |
| | R-C≡C-H | | 25 | terminal alkynes. The electrons are in an sp hybridized orbital |

Increasing Base Strength

| | Acid | Conj. Base | pKa | Comment |
|----------------------------|----------------|----------------|-------|--|
| Increasing Acid Strength ↑ | | | 18–28 | anilines; pKa Depends on substitution. Low because it has a conjugated base. Plain aniline has pKa =25 |
| | H ₂ | H [⊖] | 36 | hydrogen gas is a weak acid |
| Increasing Base Strength ↓ | | | 40 | amines: NH ₃ pKa=38 |
| | | | 41 | benzyl hydrogens; conjugated base |
| | | | 43 | allyl hydrogens; conjugated conjugate base. |
| | | | 44 | vinyl hydrogens; electrons in unconjugated sp ² orbital |
| | | | 44 | phenyl hydrogens; electrons in unconjugated sp ² orbital, not part of aromatic π sextet |
| | | | 46 | cyclopropane H; more vinyl than sp ³ hybrid (see below.) |
| | | | 48 | methane and hydrogens on sp ³ carbons |
| | | | 52 | cyclohexyl; weakest acid on this table. sp ³ conj. base |