

A COLLECTION OF pKa VALUES

	Acid	Formula	pK _a	Conjugate Base
Weaker acid ↓	Ethane	CH ₃ CH ₃	51	CH ₃ CH ₂ ⁻
	Ethylene	CH ₂ =CH ₂	44	CH ₂ =CH ⁻
	Ammonia	NH ₃	38	NH ₂ ⁻
	Hydrogen	H ₂	35	H ⁻
	Acetylene	HC≡CH	25	HC≡C ⁻
	Ethanol	CH ₃ CH ₂ OH	15.9	CH ₃ CH ₂ O ⁻
	Water	H ₂ O	15.7	HO ⁻
	Methylammonium ion	CH ₃ NH ₃ ⁺	10.64	CH ₃ NH ₂
	Bicarbonate ion	HCO ₃ ⁻	10.33	CO ₃ ²⁻
	Phenol	C ₆ H ₅ OH	9.95	C ₆ H ₅ O ⁻
	Ammonium ion	NH ₄ ⁺	9.24	NH ₃
	Hydrogen sulfide	H ₂ S	7.04	HS ⁻
	Carbonic acid	H ₂ CO ₃	6.36	HCO ₃ ⁻
	Acetic acid	CH ₃ COOH	4.76	CH ₃ COO ⁻
	Benzoic acid	C ₆ H ₅ COOH	4.19	C ₆ H ₅ COO ⁻
	Phosphoric acid	H ₃ PO ₄	2.1	H ₂ PO ₄ ⁻
Hydronium ion	H ₃ O ⁺	-1.74	H ₂ O	
Sulfuric acid	H ₂ SO ₄	-5.2	HSO ₄ ⁻	
Hydrogen chloride	HCl	-7	Cl ⁻	
Hydrogen bromide	HBr	-8	Br ⁻	
Hydrogen iodide	HI	-9	I ⁻	
↑ Stronger acid				Weaker conjugate base

Functional group	Example	pKa	Conjugate Base
Alkane	<chem>H3C-CH2-CH3</chem>	~50	<chem>H3C-CH2-CH2-[-]</chem>
Alkene	<chem>C=C</chem>	~43	<chem>C=C-[-]</chem>
Hydrogen	H-H	36	H ⁻
Amine	NH ₃	~35	NH ₂ ⁻
Sulfoxide	<chem>H3C-S(=O)-CH3</chem>	31	<chem>H3C-S(=O)-CH2-[-]</chem>
Alkyne	R-C≡C-H	25	R-C≡C ⁻
Ester	<chem>H3CO-C(=O)-CH3</chem>	25	<chem>H3CO-C(=O)-CH2-[-]</chem>
Nitrile	<chem>H3C-C#N</chem>	25	<chem>H2C-[-]-C#N</chem>
Ketone/ aldehyde	<chem>H3C-C(=O)-CH3</chem>	20-24	<chem>H3C-C(=O)-CH2-[-]</chem>
Alcohol	<chem>H3C-OH</chem>	17	<chem>H3C-O-[-]</chem>
Water	HO-H	16	HO ⁻
Malonates	<chem>H3CO-C(=O)-CH2-C(=O)-OCH3</chem>	13	<chem>H3CO-C(=O)-CH-[-]-C(=O)-OCH3</chem>
Thiols	<chem>CH3S-H</chem>	13	<chem>CH3S-[-]</chem>
Protonated amines	<chem>NH4+ Cl-</chem>	9-11	NH ₃
Carboxylic acids	<chem>H3C-C(=O)OH</chem>	4	<chem>H3C-C(=O)O-[-]</chem>
Hydrofluoric acid	H-F	3.2	F ⁻
Sulfonic acids	<chem>Me-C6H4-SO3H</chem> (tosic acid)	-1	<chem>Me-C6H4-SO3-[-]</chem>
Hydronium ion	H ₃ O ⁺	-1.7	H ₂ O
Sulfuric acid	H ₂ SO ₄	-3	HSO ₄ ⁻
Hydrochloric acid	HCl	-6	Cl ⁻
Hydrobromic acid	HBr	-9	Br ⁻
Hydroiodic acid	HI	-10	I ⁻