Ionization Constants

Acids

Acid	Formula	Ionization Constant K_a
Acetic	CH_3COOH	1.8×10^{-5}
Arsenic	H_3AsO_4	5.5×10^{-3}
Benzoic	C_6H_5COOH	6.3×10^{-5}
Boric	H_3BO_3	5.4×10^{-10}
Butanoic	C_3H_7COOH	1.5×10^{-5}
Carbonic	H_2CO_3	$K_{a1} = 4.5\times10^{-7}$ $K_{a2} = 4.7\times10^{-11}$
Chloroacetic	$ClCH_2COOH$	1.4×10^{-3}
Chlorous	$HClO_2$	1.1×10^{-2}
Chromic	H_2CrO_4	$K_{a1} = 1.8\times10^{-1}$ $K_{a2} = 3.2\times10^{-7}$
Cyanic	HCNO	3.5×10^{-4}
Formic	HCOOH	1.8×10^{-4}
Hydrazoic	HN_3	2.5×10^{-5}
Hydrocyanic	HCN	6.2×10^{-10}
Hydrofluoric	HF	6.3×10^{-4}
Hydrogen peroxide	H_2O_2	2.4×10^{-12}
Hydrosulfuric	H_2S	$K_{a1} = 8.9\times10^{-8}$ $K_{a2} = 1.0\times10^{-19}$
Hypobromous	HBrO	2.8×10^{-9}
Hypochlorous	HClO	4.0×10^{-8}
Hypoiodous	HIO	3.2×10^{-11}
Iodic	HIO_3	1.7×10^{-1}
Nitrous	HNO_2	5.6×10^{-4}
Oxalic	$C_2H_2O_4$	$K_{a1} = 5.6\times10^{-2}$ $K_{a2} = 1.5\times10^{-4}$
Paraperiodic	H_5IO_6	2.8×10^{-2}
Pentanoic	C_4H_9COOH	1.5×10^{-5}
Periodic	HIO_4	7.3×10^{-2}

Phenol	HC_6H_5O	1.3×10^{-10}
Phosphoric	H_3PO_4	$K_{a1} = 6.9\times10^{-3}$ $K_{a2} = 6.2\times10^{-8}$ $K_{a3} = 4.8\times10^{-13}$
Phosphorous	H_3PO_3	$K_{a1} = 5.0\times10^{-2}$ $K_{a2} = 2.0\times10^{-7}$
Propanoic	C_2H_5COOH	1.3×10^{-5}
Sulfuric	H_2SO_4	K_{a1} = very large $K_{a2} = 1.2\times10^{-2}$
Sulfurous	H_2SO_3	$K_{a1} = 1.4\times10^{-2}$ $K_{a2} = 6.3\times10^{-8}$
Trichloroacetic	Cl_3CCOOH	2.2×10^{-1}

Bases

Base	Formula	Ionization Constant K_b
Ammonia	NH_3	1.8×10^{-5}
Methylamine	CH_3NH_2	5.0×10^{-4}
Dimethylamine	$(CH_3)_2NH$	5.4×10^{-4}
Diethylamine	$(C_2H_5)_2NH$	6.9×10^{-4}
Trimethylamine	$(CH_3)_3N$	6.3×10^{-5}
Triethylamine	$(C_2H_5)_3N$	5.6×10^{-4}
Ethylamine	$CH_3CH_2NH_2$	6.3×10^{-4}
Ethylenediamine	$(CH_2NH_2)_2$	8.3×10^{-5}
Pyridine	C_5H_5N	1.7×10^{-9}
Hydroxylamine	NH_2OH	8.7×10^{-9}
Aniline	$C_6H_5NH_2$	7.4×10^{-10}
Hydrazine	H_2NNH_2	1.3×10^{-6}

Reference: *CRC Handbook of Chemistry and Physics*, 2007