

**Table of Acids with Ka and pKa Values\***
**CLAS**

Acid	HA	A <sup>-</sup>	Ka	pKa	Acid Strength	Conjugate Base Strength
Hydroiodic	HI	I <sup>-</sup>	Strong acids completely dissociate in aq solution (Ka > 1, pKa < 1). Conjugate bases of strong acids are ineffective bases.			
Hydrobromic	HBr	Br <sup>-</sup>				
Perchloric	HClO <sub>4</sub>	ClO <sub>4</sub> <sup>-</sup>				
Hydrochloric	HCl	Cl <sup>-</sup>				
Chloric	HClO <sub>3</sub>	ClO <sub>3</sub> <sup>-</sup>				
Sulfuric (1)	H <sub>2</sub> SO <sub>4</sub>	HSO <sub>4</sub> <sup>-</sup>				
Nitric	HNO <sub>3</sub>	NO <sub>3</sub> <sup>-</sup>				
Hydronium ion	H <sub>3</sub> O <sup>+</sup>	H <sub>2</sub> O	1	0.0		
Iodic	HIO <sub>3</sub>	IO <sub>3</sub> <sup>-</sup>	1.6 x 10 <sup>-1</sup>	0.80		
Oxalic (1)	H <sub>2</sub> C <sub>2</sub> O <sub>4</sub>	HC <sub>2</sub> O <sub>4</sub> <sup>-</sup>	5.9 x 10 <sup>-2</sup>	1.23		
Sulfurous (1)	H <sub>2</sub> SO <sub>3</sub>	HSO <sub>3</sub> <sup>-</sup>	1.54 x 10 <sup>-2</sup>	1.81		
Sulfuric (2)	HSO <sub>4</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	1.2 x 10 <sup>-2</sup>	1.92		
Chlorous	HClO <sub>2</sub>	ClO <sub>2</sub> <sup>-</sup>	1.1 x 10 <sup>-2</sup>	1.96		
Phosphoric (1)	H <sub>3</sub> PO <sub>4</sub>	H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>	7.52 x 10 <sup>-3</sup>	2.12		
Arsenic (1)	H <sub>3</sub> AsO <sub>4</sub>	H <sub>2</sub> AsO <sub>4</sub> <sup>-</sup>	5.0 x 10 <sup>-3</sup>	2.30		
Chloroacetic	CH <sub>2</sub> ClCOOH	CH <sub>2</sub> ClCOO <sup>-</sup>	1.4 x 10 <sup>-3</sup>	2.85		
Citric (1)	H <sub>3</sub> C <sub>6</sub> H <sub>5</sub> O <sub>7</sub>	H <sub>2</sub> C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>-</sup>	8.4 x 10 <sup>-4</sup>	3.08		
Hydrofluoric	HF	F <sup>-</sup>	7.2 x 10 <sup>-4</sup>	3.14		
Nitrous	HNO <sub>2</sub>	NO <sub>2</sub> <sup>-</sup>	4.0 x 10 <sup>-4</sup>	3.39		
Formic	HCOOH	HCOO <sup>-</sup>	1.77 x 10 <sup>-4</sup>	3.75		
Lactic	HCH <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	CH <sub>3</sub> H <sub>5</sub> O <sub>3</sub> <sup>-</sup>	1.38 x 10 <sup>-4</sup>	3.86		
Ascorbic (1)	H <sub>2</sub> C <sub>6</sub> H <sub>6</sub> O <sub>6</sub>	HC <sub>6</sub> H <sub>6</sub> O <sub>6</sub> <sup>-</sup>	7.9 x 10 <sup>-5</sup>	4.10		
Benzoic	C <sub>6</sub> H <sub>5</sub> COOH	C <sub>6</sub> H <sub>5</sub> COO <sup>-</sup>	6.46 x 10 <sup>-5</sup>	4.19		
Oxalic (2)	HC <sub>2</sub> O <sub>4</sub> <sup>-</sup>	C <sub>2</sub> O <sub>4</sub> <sup>2-</sup>	6.4 x 10 <sup>-5</sup>	4.19		
Hydrazoic	HN <sub>3</sub>	N <sub>3</sub> <sup>-</sup>	1.9 x 10 <sup>-5</sup>	4.72		
Citric (2)	H <sub>2</sub> C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>-</sup>	HC <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>2-</sup>	1.8 x 10 <sup>-5</sup>	4.74		
Acetic	CH <sub>3</sub> COOH	CH <sub>3</sub> COO <sup>-</sup>	1.76 x 10 <sup>-5</sup>	4.75		
Propionic	CH <sub>3</sub> CH <sub>2</sub> COOH	CH <sub>3</sub> CH <sub>2</sub> COO <sup>-</sup>	1.34 x 10 <sup>-5</sup>	4.87		
Pyridinium ion	C <sub>5</sub> H <sub>4</sub> NH <sup>+</sup>	C <sub>5</sub> H <sub>4</sub> N	5.6 x 10 <sup>-6</sup>	5.25		
Citric (3)	HC <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>2-</sup>	C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> <sup>3-</sup>	4.0 x 10 <sup>-6</sup>	5.40		
Carbonic (1)	H <sub>2</sub> CO <sub>3</sub>	HCO <sub>3</sub> <sup>-</sup>	4.3 x 10 <sup>-7</sup>	6.37		
Sulfurous (2)	HSO <sub>4</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	1.02 x 10 <sup>-7</sup>	6.91		
Arsenic (2)	H <sub>2</sub> AsO <sub>4</sub> <sup>-</sup>	HAsO <sub>4</sub> <sup>2-</sup>	8/9.3 x 10 <sup>-8</sup>	7.10/7.03		
Hydrosulfuric	H <sub>2</sub> S	HS <sup>-</sup>	1.0 x 10 <sup>-7</sup> /9.1 x 10 <sup>-8</sup>	7/7.04		
Phosphoric (2)	H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>	HPO <sub>4</sub> <sup>2-</sup>	6.23 x 10 <sup>-8</sup>	7.21		
Hypochlorous	HClO	ClO <sup>-</sup>	3.5/3.0 x 10 <sup>-8</sup>	7.46/7.53		
Hypobromous	HBrO	BrO <sup>-</sup>	2 x 10 <sup>-9</sup>	8.70		
Cyanoacetic	HCN	CN <sup>-</sup>	6.17 x 10 <sup>-10</sup>	9.21		
Boric (1)	H <sub>3</sub> BO <sub>3</sub>	H <sub>2</sub> BO <sub>3</sub> <sup>-</sup>	5.8 x 10 <sup>-10</sup>	9.23		
Ammonium ion	NH <sub>4</sub> <sup>+</sup>	NH <sub>3</sub>	5.6 x 10 <sup>-10</sup>	9.25		
Phenol	C <sub>6</sub> H <sub>5</sub> OH	C <sub>6</sub> H <sub>5</sub> O <sup>-</sup>	1.6 x 10 <sup>-10</sup>	9.80		
Carbonic (2)	HCO <sub>3</sub> <sup>-</sup>	CO <sub>3</sub> <sup>2-</sup>	4.8 x 10 <sup>-11</sup>	10.32		
Hypoiodous	HIO	IO <sup>-</sup>	2 x 10 <sup>-11</sup>	10.70		
Arsenic (3)	HAsO <sub>4</sub> <sup>2-</sup>	AsO <sub>4</sub> <sup>3-</sup>	6.0 x 10 <sup>-10</sup> /3.0 x 10 <sup>-12</sup>	9.22/11.53		
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	HO <sub>2</sub> <sup>-</sup>	2.4 x 10 <sup>-12</sup>	11.62		
Ascorbic (2)	HC <sub>6</sub> H <sub>6</sub> O <sub>6</sub> <sup>-</sup>	C <sub>6</sub> H <sub>6</sub> O <sub>6</sub> <sup>2-</sup>	1.6 x 10 <sup>-12</sup>	11.80		
Phosphoric (3)	HPO <sub>4</sub> <sup>2-</sup>	PO <sub>4</sub> <sup>3-</sup>	4.8/2.2 x 10 <sup>-13</sup>	12.32/12.66		
Water	H <sub>2</sub> O	OH <sup>-</sup>	1.0 x 10 <sup>-14</sup>	14.0		
Group I metal hydroxides (LiOH, NaOH, etc.)			Strong bases completely dissociate in aq solution (Kb > 1, pKb < 1). Conjugate acids (cations) of strong bases are ineffective bases.			
Group II metal hydroxides (Mg(OH) <sub>2</sub> , Ba(OH) <sub>2</sub> , etc.)						

\* Compiled from Appendix 5 Chem 1A, B, C Lab Manual and Zumdahl 6<sup>th</sup> Ed. The pKa values for organic acids can be found in Appendix II of Bruice 5<sup>th</sup> Ed.

Table of Acids with Ka and pKa Values\*

pKa

CLAS

PHTHALIC ACID  $C_8H_6O_4$

2, 89

5, 51

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