

Worksheet 5 Addendum: Identifying Types of Acids and Bases.

As quickly as possible, identify the compounds below by type of acid or base and the symbol to be used in an acid or base calculation (answer key below)

Possible types of acid or base answers:

strong acid, weak acid, strong base, weak base, Lewis acid, neither, amphoteric

Possible symbols: H^+ , OH^- , HA, A^- , B, BH^+ , none

| Name or molecular formula | Type of acid or base | Symbol in calculations |
|---------------------------|----------------------|------------------------|
| hydrochloric acid | Strong acid | H^+ |
| potassium malonate | Weak base | A^- |
| NH_4Cl | Weak acid | BH^+ |
| H_2SO_4 | | |
| HCOOH | | |
| tartaric acid | | |
| hydrofluoric acid | | |
| $Ba(OH)_2$ | | |
| HNO_2 | | |
| hypochlorous acid | | |
| ammonium nitrate | | |
| NH_3 | | |
| lithium hydroxide | | |
| $FeCl_3$ | | |
| potassium bisulfate | | |
| Br_2 | | |
| phosphoric acid | | |
| dimethylamine | | |
| $CH_3CH_2C=CCOOH$ | | |
| $CH_3COO^-Na^+$ | | |
| $Al(OH)_3$ | | |
| $(CH_3)_2NH$ | | |
| $CH_3NH_3^+Cl^-$ | | |
| Sulfurous acid | | |
| Hydronium ion | | |
| H_2O | | |
| $NaHCO_3$ | | |
| Sodium carbonate | | |
| H_2CO_3 | | |
| H_3PO_4 | | |
| Hydroxide ion | | |
| $HClO_3$ | | |
| Ammonium acetate | | |
| Potassium chloride | | |
| H_3O^+ | | |
| Hydroiodic acid | | |
| Br^- | | |
| CH_3COOH | | |
| BH_3 | | |

| Name or molecular formula | Type of acid or base | Symbol in calculations |
|---------------------------|-------------------------|------------------------|
| hydrochloric acid | Strong acid | H^+ |
| potassium malonate | Weak base | A^- |
| NH_4Cl | Weak acid | BH^+ |
| H_2SO_4 | Strong acid | H^+ |
| $HCOOH$ | Weak acid | HA |
| tartaric acid | Weak acid | HA |
| hydrofluoric acid | Weak acid | HA |
| $Ba(OH)_2$ | Strong base | OH^- |
| HNO_2 | Weak acid | HA |
| hypochlorous acid | Weak acid | HA |
| ammonium nitrate | Weak acid | BH^+ |
| NH_3 | Weak base | B |
| lithium hydroxide | Strong base | OH^- |
| $FeCl_3$ | Weak acid | Lewis acid |
| potassium bisulfate | amphiprotic | HA^- |
| Br_2 | neutral | none |
| phosphoric acid | Weak acid | H_3A |
| dimethylamine | Weak base | B |
| $CH_3CH_2C=CCOOH$ | Weak acid | HA |
| $CH_3COO^-Na^+$ | Weak base | A^- |
| $Al(OH)_3$ | Weak base | OH^- |
| $(CH_3)_2NH$ | Weak base | B |
| $CH_3NH_3^+Cl^-$ | Weak acid | BH^+ |
| Sulfurous acid | Weak acid | HA |
| Hydronium ion | Strong acid | H^+ |
| H_2O | amphiprotic | H^+ and OH^- |
| $NaHCO_3$ | amphiprotic | HA^- |
| Sodium carbonate | Weak base | A^- |
| H_2CO_3 | Weak acid | HA |
| H_3PO_4 | Weak acid | HA |
| Hydroxide ion | Strong base | OH^- |
| $HClO_3$ | Strong acid | H^+ |
| Ammonium acetate | Weak acid and weak base | BH^+ and A^- |
| Potassium chloride | Neutral | none |
| H_3O^+ | Strong acid | H^+ |
| Hydroiodic acid | Strong acid | H^+ |
| Br^- | Neutral | none |
| CH_3COOH | Weak acid | HA |
| BH_3 | Weak acid | Lewis acid |