



## Relative Strengths of Acids and Bases

| Strongest acids  | Acid  | Base  | Weakest bases  |
|--|---|---|--|
|  | HClO <sub>4</sub>                               | ClO <sub>4</sub> <sup>-</sup>                             |  |
|  | H <sub>2</sub> SO <sub>4</sub>                  | HSO <sub>4</sub> <sup>-</sup>                             |  |
|  | HI  | I <sup>-</sup>  |  |
|  | HBr   | Br <sup>-</sup>   |  |
|  | HCl   | Cl <sup>-</sup>   |  |
|  | HNO <sub>3</sub>                                | NO <sub>3</sub> <sup>-</sup>                              |  |
|  | H <sub>3</sub> O <sup>+</sup>                   | H <sub>2</sub> O  |  |
|  | HSO <sub>4</sub> <sup>-</sup>                   | SO <sub>4</sub> <sup>2-</sup>                             |  |
|  | H <sub>2</sub> SO <sub>3</sub>                  | HSO <sub>3</sub> <sup>-</sup>                             |  |
|  | H <sub>3</sub> PO <sub>4</sub>                  | H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>               |  |
|  | HNO <sub>2</sub>                                | NO <sub>2</sub> <sup>-</sup>                              |  |
|  | HF  | F <sup>-</sup>  |  |
|  | HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>   | C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-</sup> |  |
|  | Al(H <sub>2</sub> O) <sub>6</sub> <sup>3+</sup> | Al(H <sub>2</sub> O) <sub>5</sub> OH <sup>2+</sup>        |  |
|  | H <sub>2</sub> CO <sub>3</sub>                  | HCO <sub>3</sub> <sup>-</sup>                             |  |
|  | H <sub>2</sub> S                                | HS <sup>-</sup>   |  |
|  | HClO  | ClO <sup>-</sup>  |  |
|  | HBrO  | BrO <sup>-</sup>  |  |
|  | NH <sub>4</sub> <sup>+</sup>                    | NH <sub>3</sub>   |  |
|  | HCN   | CN <sup>-</sup>   |  |
| HCO <sub>3</sub> <sup>-</sup>  | CO <sub>3</sub> <sup>2-</sup>                   |   |  |
| H <sub>2</sub> O <sub>2</sub>  | HO <sub>2</sub> <sup>-</sup>                    |   |  |
| HS <sup>-</sup>  | S <sup>2-</sup>                                 |   |  |
| Weakest acids  | H <sub>2</sub> O                                | OH <sup>-</sup>   | Strongest bases  |