Naming acids and bases rules pdf

Acids and bases are used in many chemical reactions. They are responsible for most of the color change reaction and are used to adjust the pH of chemical solutions. Here are the names of some of the common acids and bases and the formulas associated with them. A binary compound consists of two elements. Binary acids have the hydraulic prefix in front of the full name of the non-tricholic element. They have the end-ic. Examples include hydrochloric, and hydrofluoric acid includes: Hydrofluoric Acid - HFHydrocordic Acid - HClhidrobromic Acid - HBrHidroiodic Acid - HYHydrosulfuric ACID - H2S Ternary Acids Commonly Contain Hydrogen, a Non-Hydrometal and Oxygen. The name of the most common form of acid consists of the name of the non-metal root with the end -ic. The acid that contains one oxygen atom less than the most common form is designated by the final -ous. An acid containing an oxygen atom less than the acid -ous has the prefix hypo-fixed and the -ous ending. Acid containing an oxygen more than the most common acid has the prefix per-prefix and the final -ic. Nitric Acid - HNO3Nitrous Acid - HNO2Hypochloros Acid - HClOChlorous Acid - Cinormic Acid HClO2 - HCLO3Percloic Acid - HCLO4Sulfuric Acid - H2SO4Sulfuros Acid - H2SO3Phosphoric Acid - H3PO4Phosphorous Acid - H3PO3Carbonic Acid - H2CO3ACepTic Acid - HC2H3O2 Transmissalic Acid - H2C2O4Boric Acid - H Acid 3BO3Silicic - H2Si Here are the formulas for 11 common bases: Sodium Hydroxide - NaOHPotassium Hydroxide - Kohammonium Hydroxide - Candid Hydroxide NH4OHCalci - Ca(OH)2Magnesium Hydroxide - Mg(OH)2Barium Hydrox - Ba(OH)2 Sisuminum Hydroxide - Al(OH)3 Hydroxide or Iron (II) Hydroxide - Fe(OH) 2 Hydroxide or iron (III) Hydroxide - Fe(OH)3 Zn hydroxide. OH)2 Lithium hydroxide - LiOH Some common examples of acids are hydrosulfuric acids, hydrophilic acid, hydrochloric acid, hydrohydroid acid and hydrofluoric acid, while some common bases are calcium hydroxide, sodium hydroxide, barrio hydroxide, ammonium hydroxide, magnesium hydroxide and potassium hydroxide. The acidity or basicity of a substance is measured on the pH scale. Acids increase the concentration of hydronium ions when dissolved in water, while the bases decrease it. Hydrochloric acid is represented by the chemical formula HCl, and is used industrially in the production of PVC plastics, gelatine, cleaning products and polyurethanes, among other uses. Hydrochloric acid is known as monopotic acid because it loses a hydrogen ion when it is dissolved in water. It's one of seven strong acids. Sodium hydroxide base is better known as lye. It is used in the manufacture of products such as soap, paper and detergent. Sodium hydroxide is represented by the chemical formula NaOH. Hydrochloric acid and sodium hydroxide react together to produce sodium chloride and water. Hydrosulphuric acid is produced when hydrogen sulfide is in water, and it's an organic acid. The chemical formula for the base calcium hydroxide is Ca(OH)2. Base base types Brønsted bases, Lewis bases, organic bases, strong bases, superbases and non-nucleophilic weak bases. Types of acid include brønsted acids, Lewis acids, mineral acids, organic acids, strong acids, superacids and weak acids. In chemistry and cooking, many substances dissolve in water to make it acidic or basic/alkaline. A basic solution has a pH greater than 7, while an acid iced solution has a pH of less than 7. Aqueous solutions with a pH of 7 are considered neutral. Acid base indicators are substances used to determine approximately where a solution falls on the pH scale. An acid-base indicator is a weak or weak base that exhibits a color change as the concentration of hydrogen (H+) or hydroxide (OH-) ions changes in an aqueous solution. Acid-base indicators are most often used in a titration to identify the endpoint of an acid-base reaction. They are also used to measure pH values and for interesting scientific demonstrations of color change. Also known as: pH indicator Perhaps the best known pH indicator is litmus. Thymol Blue, Phenol Red and Meethyl Orange are all common acid-based indicators. Red cabbage can also be used as an acid base indicator. If the indicator is a weak acid, the acid and its conjugated base are different colors. If the indicator is a weak base, the base and its conjugated acid display different colors. For a weak acid indicator with the formula genera HIn, the balance is achieved in the solution according to the chemical equation: HIn(aq) + H2O(l) ↔ In-(aq) + H3O+(aq) HIn(aq) is acid, which is a different color from the Base In-(aq). When the pH is low, the concentration of the Hydronium Ion H3O+ is high and the balance is to the left, producing the color A. At high pH, the concentration of H3O+ is low, so that the balance tends to the right side of the equation and the color B is displayed. An example of weak acid indicator is phenolthalein, which is colorless as a weak acid but dissociates in water to form a magenta or red-purple anion. In an acidic solution, the balance is to the left, so the solution is colorless (too little magenta anion to be visible), but as the pH increases, the balance changes to the right and the magenta color is visible. The equilibrium constant for the reaction can be determined using the equation: KIn = [H3O+][In-] / [HIn] where KIn is the dissociation constant of the indicator. The color change occurs at the point where the concentration of acid and anion base are equal: [HIn] = [In-] which is the point where half of the indicator is in acid form and the other half is its conjugated base. A certain type of acid-base indicator is a universal indicator, which is a mixture of multiple indicators that gradually changes color over a wide pH range. The indicators are chosen to mix a few drops with a solution will produce a color that can be associated with a value pH. Various plants and household chemicals can be used as pH indicators, but in a laboratory environment, these are are Most common chemicals used as indicators: Indicator Acid Color Base Color pH Range pKIn thymol blue (first change) red yellow 1.2 - 2.8 1.5 yellow red red methyl orange 3.2 - 3.2 - 3.2 - 3.2 - 3.2 - 3.2 - 3.2 - 3.2 4.4 3.7 bromocre blue yellow green sun 3.8 - 5.4 4.7 methyl red red red red red red red 4.8 - 6.0 5.1 bromo blue pee blue blue blue blue 6.0 - 7.6 7.0phenol red red red red red red 6.8- 8.4 7.9 blue thymol (second change) yellow blue 0 8.0 - 9.6 8.9 phenolthalein colorless magenta 8.2 -10.0 9.4 Acid and base colors are relative. Also, note that some popular indicators exhibit more than one color change as weak acid or weak base dissociates more than once. Acid-based indicators are chemicals used to determine whether an aqueous solution is acidic, neutral, or alkaline. Because acidity and alkalinity relate to pH, they can also be known as pH indicators. Examples of acid-base indicators include litmus paper, phenolphthalein and red cabbage juice. An acid-base indicator is a weak or weak base acid that dissociates in water to produce weak acid and its conjugated base or else the weak base and its conjugated acid. The species and its conjugate have different colors. The point at which an indicator changes color is different for each chemical. There is a pH range over which the indicator is useful. Thus, the indicator that may be good for a solution may be a bad choice to test another solution. Some indicators may not actually identify acids or bases, but can only tell the approximate pH of an acid or a base. For example, methyl orange only works at an acidic pH. It would be the same color above a certain pH (acid) and also in neutral and alkaline values. Sodium fluoride (NaF) is a salt. Although NaF is neither an acid nor a base, this salt is formed when hydrofluoric acid reacts with sodium hydroxide. The overall reaction is HF + NaOH --> NaF + H2O This general type of reaction is called neutralization reaction: acid + base --> salt + water. Acid protons bind or neutralize hydroxide ions from the base to form water. Meanwhile, the metal component of the base, in this case sodium, binds to the non-metallic component of the acid (fluoride ions) to form a salt (sodium fluoride). A more familiar example of this reaction is HCl neutralizing NaOH to form water and sodium chloride, or table salt. Soap is a base composed of metallic salts, usually in the form of sodium, from fatty acids. The first soaps consisted of water, oil and lye, which gave the soap its alkaline nature and reacted with the oils to form the soap. Soap manufacturers use sodium hydroxide or potassium hydroxide to make soaps, with the sodium variety used for solid soaps. Cream soaps use a mixture of the two bases. Make soaps that are soft enough to while strong enough to clean effectively has been a balancing act for soap manufacturers, as stated by the U.S. Department of Energy. It's easy to get confused about whether milk is an acid or a base, especially when you consider that some people drink milk or take calcium calcium treat an acidic stomach. In fact, milk has a pH of about 6.5 to 6.7, which makes it slightly acidic. Some sources cite milk as neutral because it is so close to the neutral pH of 7.0. However, milk contains lactic acid, which is a hydrogen donor or proton donor. If you test milk with litmus paper, you will have a neutral for a slightly acidic response. As the milk sours, its acidity increases. Harmless lactobacilli bacteria use lactose in milk as an energy source. Bacteria combine with oxygen to produce lactic acid. Like other acids, lactic acid tastes bitter. Milk from mammalian species other than cattle has a slightly acidic pH comparable. The pH changes slightly depending on whether the milk is skimmed, whole or evaporated. Colostrum is more acidic than ordinary milk (less than 6.5 for cow's milk). milk).