I'm not a robot

An acid which ionizes almost completely in solution is said to be a strong acid, wheras one which has a small degree of ionization is a weak acid. Of the common acids, hydrochloric acid, nitric acid and sulfuric acid are strong acids. Acetic acid is a weak acid. The acidity of solutions is measured in terms of the pH of the solution, and strong acids will lower the pH more for a given molarity of solution. Acids are compounds that dissociate in water to donate hydrogen ions/protons or to accept electrons. Here's a list of ten common acids with their chemical structures. Acetic acid is also known as ethanoic acid.LAGUNA DESIGN / Getty Images Acetic Acid: HC2H3O2Also known as: ethanoic acid, CH3COOH, AcOH.Acetic acid is found in vinegar. Vinegar contains between 5 and 20 percent acetic acid. This weak acid is most often liquid. Pure acetic acid (glacial) crystallizes just below room temperature. This is the chemical structure of boric acid: boron (pink), hydrogen (white) and oxygen (red).LAGUNA DESIGN / Getty Images Boric Acid: H3BO3Also known as: acidum boricum, hydrogen orthoborate Boric acid may be used as a disinfectant or pesticide. It's usually found as a white crystalline powder. Borax (sodium tetraborate) is a familiar related compound. This is the chemical structure of carbonic acid.LAGUNA DESIGN / Getty Images Carbonic Acid: CH2O3Also known as: aerial acid, acid of air, dihydrogen carbonate, kihydroxyketone. Solutions of carbon dioxide in water (carbonated water) may be called carbonic acid. This is the only acid excreted by the lungs as a gas. Carbonic acid is a weak acid. It's responsible for dissolving limestone to produce geological features like stalagmites and stalactites. Citric acid is a weak acid found in citrus fruits and used as a natural preservative and to impart a sour flavoring. Atoms are represented as spheres and are colour-coded: carbon (grey), hydrogen (white) and oxygen (red).LAGUNA DESIGN / Getty Images Citric Acid: H3C6H5O7 Also known as: 2-Hydroxy-1,2,3-propanetricarboxylic acid. Citric acid is a weak organic acid that gets its name because it's a natural acid in citrus fruits. The chemical is an intermediate species in the citric acid cycle, which is key for aerobic metabolism. Citric acid is widely used as a flavoring and acidifier in food. Pure citric acid has a tangy, tart flavor. This is the chemical structure of hydrochloric acid: chlorine (green) and hydrogen (white).LAGUNA DESIGN / Getty Images Hydrochloric acid: HCl Also known as marine acid, chloronium, spirit of salt. Hydrochloric acid is a clear, highly corrosive strong acid. It's found in diluted form as muriatic acid. This chemical has many industrial and lab uses. Muriatic acid for industrial purposes typically is 20 to 35 percent hydrochloric acid, while muriatic acid for household purposes ranges between 10 and 12 percent hydrochloric acid. HCl is the acid found in gastric juice. This is the chemical structure of hydrofluoric acid: fluorine (cyan) and hydrogen (white).LAGUNA DESIGN / Getty Images Hydrofluoric Acid: HFAlso known as: hydrogen fluoride, hydrofluoride, hydrogen monofluoride, fluorhydric acid. Although it's highly corrosive, hydrofluoric acid is considered a weak acid because it doesn't usually dissociate completely. The acid will eat glass and metals, so HF is stored in plastic containers. If spilled on skin, hydrofluoric acid passes through soft tissue to attack bone. HF is used to make fluorine compounds, including Teflon and Prozac. This is the chemical structure of nitric acid: hydrogen (white), nitrogen (blue) and oxygen (red).LAGUNA DESIGN / Getty Images Nitric Acid: HNO3Also known as: aqua fortis, azotic acid, engraver's acid, nitroalcohol. Nitric acid is a strong mineral acid. In pure form, it is a colorless liquid. Over time, it develops a yellow color from decomposition into nitrogen oxides and water. Nitric acid is used to make explosives and inks and as a strong oxidizer for industrial and lab use. This is the chemical structure of oxalic acid.Todd Helmenstine Oxalic Acid: H2C2O4 Also known as: ethanedioic acid, hydrogen oxalate, ethanedionate, acidum oxalicum, HOOCCOOH, oxiric acid. Oxalic acid gets its name because it was first isolated as a salt from sorrel (Oxalis sp.). The acid is relatively abundant in green, leafy foods. It's also found in metal cleaners, anti-rust products, and some types of bleach. Oxalic acid is a weak acid. Phosphoric acid is also known as orthophosphoric acid or phosphoric(V) acid.Ben Mills Phosphoric Acid: H3PO4Also known as: orthophosphoric acid, trihydrogen phosphate, acidum phosphoricum. Phosphoric acid is a mineral acid used in home cleaning products, as a chemical reagent, as a rust inhibitor, and as a dental etchant. Phosphoric acid is also an important acid in biochemistry. It's a strong acid. This is the chemical structure of sulfuric acid. Sulfuric acid: H2SO4Also known as: battery acid, dipping acid, mattling acid, Terra Alba, oil of vitriol. Sulfuric acid is a corrosive mineral strong acid. Although normally clear to slightly yellow, it may be dyed dark brown to alert people to its composition. Sulfuric acid causes serious chemical burns, as well as thermal burns from the exothermic dehydration reaction. The acid is used in lead batteries, drain cleaners, and chemical synthesis.Acids are common in daily life. They are found within cells and digestive systems, occur naturally in foods, and are used for many common chemical reactions.Common strong acids include hydrochloric acid, sulfuric acid, phosphoric acid, and nitric acid.Common weak acids include acetic acid, boric acid, hydrofluoric acid, oxalic acid, citric acid, and carbonic acid. Some science concepts have the strange property of being both complex and simple at the same time. They may be a facet of our daily life, but, if asked, we probably wouldnt be able to describe them well. One great example of this is acids in chemistry. From cooking to cleaning, you come in contact with acids daily; but do you actually know what they are? Lets discuss the question: What is an acid?, and take a look at three of the most common acid definitions in chemistry! In life, acids can be extremely variable in form and function. Across all definitions, they have a few underlying characteristics, such as: They make food taste sour They have an elevated concentration of hydrogen (H+) ions They turn litmus paper red They have a pH lower than 7 They are typically corrosive. Acids are extremely diverse. There are many different categories of acids, which can make them hard to pin down as a major group of chemicals. There are non-organic acids (such as sulfuric and phosphoric acid) and organic acids (such as ascorbic and oxalic acid). Natural acids are often found in plants and animal systems. Ascorbic acid, also known as vitamin C, is a prime constituent in many fruits. These are just a few of the main characteristics associated with acids. There are plenty more that you may come across, such as the reactivity of acids with various compounds. In chemistry, there are a few extremely common acid definitions that you may come across. Each describes acids as a whole, meaning they are not exclusive to specific acids. The definitions are known as Arrhenius acids, Bronsted Lowry acids, and Lewis acids. One of the earliest definitions for acids came from the Swedish chemist, Svante Arrhenius. His definition is as follows: An Arrhenius acid increases the H+ concentration within an aqueous solution. Arrhenius acids fully dissociate in solution. Thus, they always give off H+ ions. In water, the free hydrogens combine with H20 molecules to form H3O+, also known as hydronium. The next major definition for acids arose in 1923. It was coined by the English chemist, Thomas Lowry and Danish chemist, Johannes Bronsted. This definition goes a little more in-depth, describing acids as: Compounds that donate a proton in solution. In essence, Bronsted-Lowry acids describe a wider range of acid functions and depict why acids increase the proton concentration in a solution. When an acid reacts, it produces a conjugate base. Last but not least, there are Lewis acids, which were described by G.N. Lewis in 1916. Surprisingly, his theory was not widely popularized until 1923, the same year that Bronsted-Lowry acids were proposed. Lewis acids are described as: Substances that accept a pair of electrons, thus forming a covalent bond with the atom sharing the electrons. As compared to the others, the definition for Lewis acids takes into account the movement of electrons and the change of both the acid and the base as a reaction occurs. As you may have guessed, Lewis acids are usually depicted with Lewis structures, as they allow for the best visualization of lone pairs and atom movement. Many acids and bases occur naturally in nature, such as citric acid in fruits like orange, lemon, etc, tartaric acid in tamarind, malic acid in apples, and lactic acid in milk and milk products, hydrochloric acid in gastric juices.Similarly, many bases are found such as lime water. We use many of these acids in our day-to-day life, such as vinegar or acetic acid in the kitchen, boric acid for laundry, baking soda for the purpose of cooking, washing soda for cleaning, etc.Table of Content Many of the acids that we do not consume in the household are used in the laboratories and industries, which include an acid such as HCl, H2SO4 etc, and bases such as NaOH, KOH etc. When these acids and bases are mixed in the right proportions, the neutralization reaction thus results in the formation of salt and water. Some naturally occurring salts found in nature include NaCl and KCl etc in seawater and natural rock deposits. In this section, we will read more about acid, base, and salt and their properties. DefinitionsAcid:- An acid is defined as a substance whose water solution tastes sour, turns blue litmus red, and neutralizes bases.Base:- A substance is called base if its aqueous solution tastes bitter, turns red litmus blue, or neutralizes acids.Salt:- Salt is a neutral substance whose aqueous solution does not affect litmus.Recommended Videos AcidsThe term acid is derived from a Latin word acidus or acere, which means sour. The most common characteristic is their sour taste. An acid is a substance that renders ionizable hydronium ion (H3O+) in its aqueous solution. It turns blue litmus paper red. These dissociate in their aqueous solution to form their constituent ions, as given by the following examples.Based on their occurrence, they are divided into two types- Natural and mineral acids.Natural Acids:These are obtained from natural sources, such as fruits and animal products. For e.g. lactic, citric, and tartaric acid etc.Mineral Acids: Mineral acids are acids prepared from minerals. Examples are Hydrochloric acid (HCl), Sulphuric Acid (H2SO4), and nitric acid (HNO3), etc.Also, CheckDilute AcidsBasesThe most common characteristic of bases is their bitter taste and soapy feel. A base is a substance that renders hydroxyl ion(OH) in their aqueous solution. Bases turn the colour of red litmus paper to blue.The bases dissociate in their aqueous solution to form their constituent ions, given in the following examples.SaltsSalt is an ionic compound that results from the neutralization reaction of acids and bases. Salts are constituted of positively charged ions, known as cations, and negatively charged ions, known as anions, which can either be organic or inorganic in nature. These ions are present in a relative amount, thus rendering the nature of the salt neutral.The formation of salt can be seen from the chemical reactions shown in the equations below.In chemistry, a salt is a substance obtained by the reaction of an acid and a base. Salts are composed of positive ions (cations) of bases and negative ions (anions) of acids. The reaction of acid and base is called the neutralization reaction.Ammonium chloride (chemical formula NH4Cl) is an acid salt because it is a salt of a strong acid (i.e. hydrochloric acid) and a weak base (i.e. ammonium hydroxide).There are two basic types of acids organic and inorganic acids. Inorganic acids are sometimes referred to as mineral acids. As a group, organic acids are generally not as strong as inorganic acids. The main difference between the two is the presence of carbon in the compound; inorganic acids do not contain carbon.Inorganic acids Inorganic acids are often termed mineral acids. The anhydrous form may be gaseous or solid. An inorganic anhydride is an oxide of metalloid which can combine with water to form an inorganic acid.Example:Sulphuric acid (H2SO4)Phosphoric acid (H3PO4)Nitric acid (HNO3)Organic acids Organic acids are corrosive and toxic. Corrosivity is a form of toxicity to the tissues that the acid contacts. Organic acids and their derivatives cover a wide range of substances. They are used in nearly every type of chemical manufacture. Because of the variety in the chemical structure of the members of the organic acid group.Example:Acetic acidCitric acidFormic acidThe salt is basic only when it contains a weak acid conjugate base. For example, sodium chloride contains chloride (Cl-), the conjugate base of HCl.When an acid reacts with metal, a salt and hydrogen are produced:acid + metal salt + hydrogenThe salt that is produced depends upon which acid and which metal react.Sodium metal reacts with hydrochloric acid which produces hydrogen gas and sodium chloride.2Na(s)+2HCl(aq)2NaCl(aq)+H2(g)To learn more about acids and bases and neutralization reactions, thepHscale and other related topics, come register with BYJUS and download BYJUS The Learning App. noun (4)adjective (5)Chemistry.a compound usually having a sour taste and capable of neutralizing alkalis and reddening blue litmus paper, containing hydrogen that can be replaced by a metal or an electropositive group to form a salt, or containing an atom that can accept a pair of electrons from a base. Acids are proton donors that yield hydronium ions in water solution, or electron-pair acceptors that combine with electron-pair donors or bases.a substance with a sour taste.something, as a remark or piece of writing, that is sharp, sour, or ill-natured.His criticism was pure acid.Slang.LSD.Chemistry.belonging or pertaining to acids or the anhydrides of acids.having only a part of the hydrogen of an acid replaced by a metal or its equivalent.having a pH value of less than 7.sharp or biting to the taste; tasting like vinegar; sour.sharp, biting, or ill-natured in mood, manner, etc..an acid remark; an acid wit.Synonyms: tart, vitriolic, biting, acerbicGeology.containing much silica.Metallurgy.noting, pertaining to, or made by a process in which the lining of the furnace, or the slag that is present, functions as an acid in high-temperature reactions in taking electrons from oxide ions: usually a siliceous material, as sand or ganister.any substance that dissociates in water to yield a sour corrosive solution containing hydrogen ions, having a pH of less than 7, and turning litmus red See also Lewis acida sour-tasting substancea slang name for LSDCollins English Dictionary Complete & Unabridged 2012 Digital Edition William Collins Sons & Co. Ltd. 1979, 1986 HarperCollins Publishers 1998, 2000, 2003, 2005, 2006, 2007, 2009, 2012chemof, derived from, or containing acidbeing or having the properties of an acidsodium bicarbonate is an acid saltsharp or sour in tastecutting, sharp, or hurtful in speech, manner, etc; vitriolic; caustic(of rain, snow, etc) containing pollutant acids in solution(of igneous rocks) having a silica content of more than 60% of the total and containing at least one tenth quartzmetallurgy of or made by a process in which the furnace or converter is lined with an acid materialCollins English Dictionary Complete & Unabridged 2012 Digital Edition William Collins Sons & Co. Ltd. 1979, 1986 HarperCollins Publishers 1998, 2000, 2003, 2005, 2006, 2007, 2009, 2012Any of a class of compounds that form hydrogen ions when dissolved in water, and whose aqueous solutions react with bases and certain metals to form salts. Acids turn blue litmus paper red and have a pH of less than 7. Their aqueous solutions have a sour taste.Compare baseA sour-tasting material (usually in a solution) that dissolves metals and other materials. Technically, a material that produces positive ions in solution. An acid is the opposite of a base and has a pH of 0 to 7. A given amount of an acid added to the same amount of a base neutralizes the base, producing water and a salt. Common vinegar, for example, is a weak solution of acetic acid.Figuratively, acid applies to anything sour or biting; for example, an acid wit is sharp and unpleasant.acidly adverbacidness nounacidy adjectivenonacid nounpreacid adjectivepreacidness nounsemiacid adjectiveOrigin of acid1First recorded in 162030; from Latin acidus sour, akin to cer sharp, actum vinegar; acescent, aciculaOrigin of acid1C17: (first used by Francis Bacon): from French acide or Latin acidus, from acre to be sour or sharpIdiomsput on the acid, to importune someone, as for money, sexual favors, or confidential information.Acid, astringent are terms used figuratively of wit or humor. Acid suggests a sharp, biting, or ill-natured quality: an acid joke about an opponent. Astringent connotes severity but usually also a bracing quality, as of something applied with curative intent: astringent criticism.Examples have not been reviewed.The kind that makes your mouth pucker and your tongue go numb from all the acids decimating your taste buds.The 13 pelicans had been poisoned by domoic acid, a toxin that occurs in algal blooms, which fish can consume.It hits hard with acid, which seems to be the foundational principle of my summer cooking style.The Company rakes her over the coals, demotes her, and doesnt believe her report about an alien creature that has a razor-sharp tail, knife-like teeth and highly caustic acid for blood.In those early years, I was a menace with acid.What does acid mean?In science, an acid is a sour-tasting substance that releases hydrogen ions when added to water. Acids will turn litmus to a red color and have a pH lower than 7.An acid is any substance that will release hydrogen ions when mixed with water. The amount of hydrogen ions that a substance releases is measured on the pH scale, which ranges from 0 to 14. The lower the pH number is, the more hydrogen ions that are being released. Water has a pH of 7, which is neutral on the pH scale. All acids have a pH lower than 7. A pH greater than 7 indicates an alkali, or base.Acids also have a sour taste, such as the acid found in lemons. A final quality that all acids share is that when they come into contact with litmus paper, they will turn the paper red.Acids are all around us and are used for a wide variety of purposes. Some common acids you can find in your house include lactic acid (in milk), ascorbic acid (in citrus fruits), and acetic acid (in vinegar).Definitions and idiom definitions from Dictionary.com Unabridged, based on the Random House Unabridged Dictionary, Random House, Inc. 2023Idioms from The American Heritage Idioms Dictionary copyright 2002, 2001, 1995 by Houghton Mifflin Harcourt Publishing Company. Published by Houghton Mifflin Harcourt Publishing Company.aciculumacid anhydrideBrowse#aabbccddeeffgghhiijjkkllmmnnooppqqrrsstuuvvwwxxyyzzAboutCareersContact usCookies, terms, & privacyHelpFollow usGet the Word of the Day every day! 2025 Dictionary.com, LLCThere are different types of acids. By definition, an acid donates hydrogen ions or protons or accepts an electron pair.In chemistry, an acid is a chemical species that donates hydrogen ions or protons or accepts an electron pair. Acids react with bases and some metals via a neutralization reaction that forms a salt. They have a pH less than 7 and taste sour. The word acid comes from the Latin word acidus, which means sour. Take a closer look at the definition of acids, examples, and their properties.An acid is a hydrogen ion or proton donor or an electron pair acceptor.Not all compounds containing hydrogen are acids.Acids have a pH less than 7, turn litmus paper red, taste sour, and react with bases.Examples of acids include hydrochloric acid (HCl), sulfuric acid (H2SO4), and acetic acid (CH3COOH).There are three ways of defining an acid, based on the three main acid-base theories. Some chemicals are acids under one definition, but not another.Arrhenius acid: An Arrhenius acid increases the hydrogen ion (H+) concentration of an aqueous solution. Since hydrogen ions attach to water molecules, what this really means is an Arrhenius acid increases the hydronium ion (H3O+) concentration. An Arrhenius acid has the element hydrogen (H) as part of its chemical formula. Examples include hydrochloric acid (HCl), nitric acid (HNO3), and acetic acid (CH3COOH).Brnsted-Lowry acid: A Bronsted-Lowry acid is a proton donor. Since a hydrogen ion and a proton are essentially the same, all Brnsted acids contain hydrogen. The difference between these acids and Arrhenius acids is that they can react in solvents besides water.Lewis acid: A Lewis acid accepts an electron pair to form a covalent bond. All Arrhenius and Bronsted-Lowry acids are Lewis acids. But, there are Lewis acids which are not Arrhenius or Bronsted-Lowry acids. For example, BF3, AlCl3,and Mg2+ are Lewis acids, but are not acids by the other definitions. Boric acid (H3BO3) has hydrogen in its formula, but it is only a Lewis acid because it does not dissociate in water, but does accept an electron pair.Most of the time, when chemists refer to an acid, they mean a Brnsted-Lowry acid. This definition includes all of the Arrhenius acids, plus it extends to solvents besides water.An amphoteric compound acts as either an acid or a base, depending on the situation. Examples include water, amino acids, and metal oxides. For example, water donates a proton when it reacts with a base, but accepts a proton when it reacts with water.The two broad categories of acids are strong acids and weak acids.Strong acids completely dissociate into their ions in water (or other solvent, for Brnsted-Lowry acids). Examples include hydrochloric acid (HCl) and nitric acid (HNO3). There are only seven common strong acids.Weak acids incompletely dissociate into their ions in a solvent, so the solution contains both the weak acid and the ions. There are numerous weak acids. Examples include acetic acid (CH3COOH), nitrous acid (HNO2), and formic acid (HCOOH).Common Strong AcidFormulahydrochloric acidHClnitric acidHNO3sulfuric acidH2SO4hydrobromic acidHBrhydroiodic acidHIperchloric acidHClO4chloric acidHClO3A monoprotic or monobasic acid only donates one proton per molecule. An example is hydrochloric acid (HCl).HA (aq) + H2O (l) H3O+(aq) + A(aq)A polyprotic or polybasic acid can donate more than one proton per acid molecule. There are diprotic (dibasic) acid and triprotic (tribasic acids). For example, sulfuric acid (H2SO4) is a diprotic acid that has two protons it can donate.H2A (aq) + H2O (l) H3O+(aq) + HA(aq)Ka1HA(aq) + H2O (l) H3O+(aq) + A2(aq) Ka2The equilibrium constant of the first dissociation (Ka1) usually is greater than the second dissociation constant (Ka2).A superacid is any acid that is stronger than sulfuric acid. The strongest acid is fluoroantimonic acid (HSbF6). It donates protons about a billion times better than sulfuric acid.Acids display several characteristic properties:Most taste sour. (Dont test this.)Most are corrosive.They have pH values less than 7.Acids turn litmus paper red.In water, Arrhenius acids are electrolytes. In other words, they conduct electricity in aqueous solution.Arrhenius acids react with bases to form salt and water.Arrhenius acids react with most metals to release hydrogen gas.Finston, H.L.; Rychtman, A.C. (1983).A New View of Current Acid-Base Theories. New York: John Wiley & Sons. doi:10.1002/ciuz.19830170211Hall, Norris F. (March 1940). Systems of Acids and Bases.Journal of Chemical Education. 17 (3): 124128. doi:10.1021/ed017p124IUPAC (1997). Acid. Compendium of Chemical Terminology (2nd ed.). Oxford: Blackwell Scientific Publications. doi:10.1351/goldbookJensen, W.B. (1980).The Lewis Acid-Base Concepts: An Overview. New York: Wiley. 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