



Acids and Bases

How do acids and bases behave in water?

Why?

Acids and bases play an important role in our lives. Numerous biological processes, industrial applications, and even environmental problems are a function of the acidity or basicity (alkalinity) of aqueous solutions. It is therefore important to understand what makes a substance behave as an acid or a base when dissolved in water. In this activity, we will explore the physical and chemical properties of acids and bases.

Model 1 – Arrhenius Acids and Bases

Common Name for Aqueous Solution	Chemical Formula	Found in...	Tastes...	Turns Litmus Paper...	Conducts Electricity?	Acid or Base
Acetic acid	$\text{HC}_2\text{H}_3\text{O}_2(\text{aq})$	Vinegar	Sour	Red	Yes	Acid
Benzoic acid	$\text{HC}_7\text{H}_5\text{O}_2(\text{aq})$	Food preservative	Sour	Red	Yes	Acid
Phosphoric acid	$\text{H}_3\text{PO}_4(\text{aq})$	Soda pop	Sour	Red	Yes	Acid
Hydrochloric acid	$\text{HCl}(\text{aq})$	Stomach acid	Sour	Red	Yes	Acid
Citric acid	$\text{H}_3\text{C}_6\text{H}_7\text{O}_7(\text{aq})$	Citrus fruits	Sour	Red	Yes	Acid
Ascorbic acid	$\text{H}_2\text{C}_6\text{H}_7\text{O}_6(\text{aq})$	Vitamin C	Sour	Red	Yes	Acid
Magnesium hydroxide	$\text{Mg}(\text{OH})_2(\text{aq})$	Milk of magnesia	Bitter	Blue	Yes	Base
Aluminum hydroxide	$\text{Al}(\text{OH})_3(\text{aq})$	Antacids	Bitter	Blue	Yes	Base
Barium hydroxide	$\text{Ba}(\text{OH})_2(\text{aq})$	Lubricants	POISON	Blue	Yes	Base
Sodium hydroxide	$\text{NaOH}(\text{aq})$	Drain cleaner	POISON	Blue	Yes	Base

1. Refer to Model 1.

a. What is the common chemical name for Vitamin C?

Ascorbic Acid

b. Is Vitamin C classified as an acid or a base?

Acid

2. Examine the properties of the Arrhenius acids in Model 1. List three properties that all Arrhenius acids have in common.

They contain Hydrogen, taste sour, and turn litmus paper red

3. Examine the chemical formulas for the Arrhenius acids in Model 1. What feature do all the Arrhenius acid chemical formulas have in common?

Hydrogen ^!!

4. Examine the properties of the Arrhenius bases in Model 1. List two properties that all Arrhenius bases have in common.

Taste bad & turn litmus blue



Pogil Chemistry Answer Key Acids Bases

NARAYAN CHANGDER



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is made that there are one hundred different substituent groups available to substitute in the benzene ring of benzoic acid approximately five million tri substituted benzoic acids are theoretically possible Thus we have long felt that it is useful to consider methods by which a pK value might be predicted as an interim value to within several tenths of a pH unit using arguments based on linear free energy relationships by analogy by extrapolation by interpolation from existing data or in some other way This degree of precision may be adequate for many purposes such as the recording of spectra of pure species as anion neutral molecule or cation for selection of conditions favourable to solvent extraction and for the interpretation of pH profiles for organic reactions

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