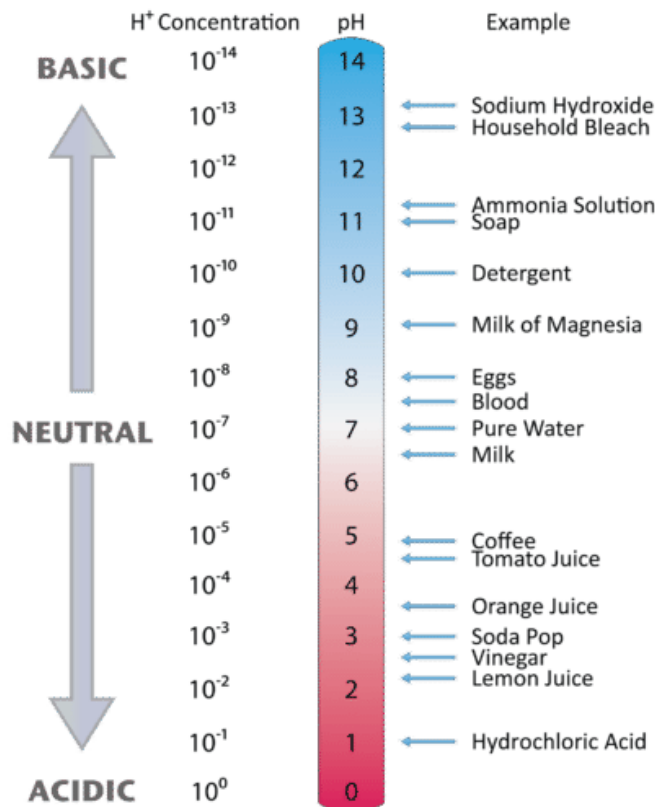


Acid and Alkali

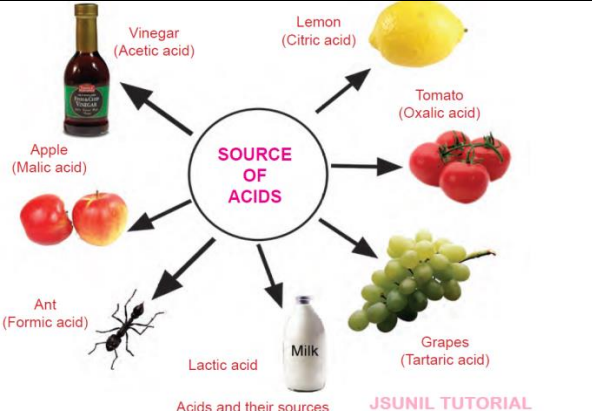

There are 3 types of substances

- a. Acidic Substance
- b. Alkali Substance
- c. Neutral Substance

Acidic Substance	Alkali
<p>Characteristics</p> <ul style="list-style-type: none"> - Sour - Corrosive - Changes litmus paper from Blue to Red - PH less than 7 - Reacts with carbonates to release carbon dioxide form salt and water - Examples: Lime, lemon, tomato, mango, oranges 	<p>Characteristics</p> <ul style="list-style-type: none"> - Bitter - Corrosive - Changes litmus paper from Red to Blue - PH Value more than 7 - Reacts with ammonia salt to release salt, water and ammonia gas - Examples: Soap



Acid + Alkali

Acid	Alkali																										
 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #f4a460;"> <th style="padding: 5px;">Acid Name</th> <th style="padding: 5px;">Formula</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Hydrochloric Acid</td> <td style="padding: 5px;">HCl</td> </tr> <tr> <td style="padding: 5px;">Nitric Acid</td> <td style="padding: 5px;">HNO₃</td> </tr> <tr> <td style="padding: 5px;">Acetic Acid</td> <td style="padding: 5px;">CH₃COOH</td> </tr> <tr> <td style="padding: 5px;">Benzoic Acid</td> <td style="padding: 5px;">C₆H₅COOH</td> </tr> <tr> <td style="padding: 5px;">Hydroiodic Acid</td> <td style="padding: 5px;">HI</td> </tr> <tr> <td style="padding: 5px;">Hydrofluoric Acid</td> <td style="padding: 5px;">HF</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Chemical Reaction</p> <p>Acid + Carbonate -> Salt + Water + Carbon dioxide</p> <p>Acid + Metal -> Salt + Hydrogen</p>	Acid Name	Formula	Hydrochloric Acid	HCl	Nitric Acid	HNO ₃	Acetic Acid	CH ₃ COOH	Benzoic Acid	C ₆ H ₅ COOH	Hydroiodic Acid	HI	Hydrofluoric Acid	HF	 <div style="background-color: #ffffcc; padding: 10px; text-align: center; margin-top: 10px;"> <p>Common laboratory alkalis</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Name of alkali</th> <th style="padding: 5px;">Formula</th> <th style="padding: 5px;">Alkalinity</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Sodium hydroxide</td> <td style="padding: 5px;">NaOH</td> <td style="padding: 5px;">High</td> </tr> <tr> <td style="padding: 5px;">Lime water</td> <td style="padding: 5px;">Ca(OH)₂</td> <td style="padding: 5px;">Moderate</td> </tr> <tr> <td style="padding: 5px;">Ammonia</td> <td style="padding: 5px;">NH₃</td> <td style="padding: 5px;">Moderate</td> </tr> </tbody> </table> </div> <p style="margin-top: 20px;">Chemical Reaction</p> <p>Alkali + Ammonium Salt -> Salt + Water + Ammonia Gas</p> <p>Alkali + Acid -> Salt + Water</p>	Name of alkali	Formula	Alkalinity	Sodium hydroxide	NaOH	High	Lime water	Ca(OH) ₂	Moderate	Ammonia	NH ₃	Moderate
Acid Name	Formula																										
Hydrochloric Acid	HCl																										
Nitric Acid	HNO ₃																										
Acetic Acid	CH ₃ COOH																										
Benzoic Acid	C ₆ H ₅ COOH																										
Hydroiodic Acid	HI																										
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Application of Acid and Alkali

Acids:

Vinegar: Often used in the kitchen, it includes 3-6% acetic acid.

Lemon and Orange Juice: Most people drink them everyday, but little do they know that they contain citric acid which is used as a food preservation among other uses.

Industrial Uses: Nitric acid and sulphuric acid are both used commonly in fertilizers, dyes, paints and explosives.

Batteries: Sulphuric acid is used in batteries which run in cars and flashlights to name a few.

Dissolving: Hydrochloric acid is used to make aqua regia, which is used to dissolve noble metals such as gold and platinum.

Fertilizers: Fertilizers are often produced using sulphuric acid.

Alkali:

Manufacturing Soap: Sodium hydroxide is one of the key ingredients in producing soap.

Detergent: Detergent is made using sodium carbonate and phosphate.

Window Cleaner: Ammonium hydroxide is an important part of making window cleaner.

Oven/Sink/Drain Cleaners: Sodium hydroxide is used once again to help clean ovens, sinks and drains.

Baking Soda: Sodium bicarbonate is used to make baking soda.

Toothpaste: Fluoride is used in toothpaste to neutralize acids on your teeth and remove plaque.