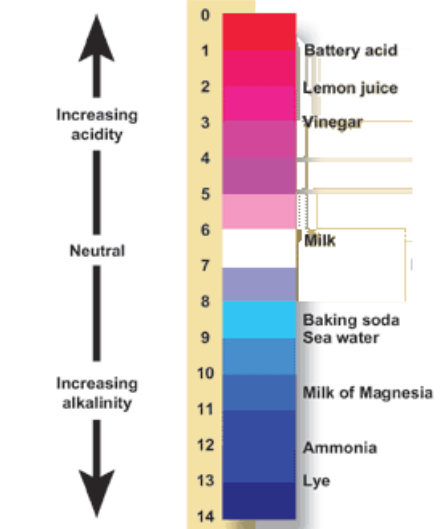


## ICSE CLASS 8 CHEMISTRY ACIDS, BASES AND SALTS

PROPERTY	ACIDS	BASES	Indicators are used to see if a solution is acidic or basic  
Taste	Sour to taste Soluble in water	Bitter, soapy/slippery to touch Soluble bases are alkalis	
Reaction with litmus indicator	Blue litmus to red	Red litmus to blue	
Hydrogen ion concentration	< 7	>7	
Conduction of electricity	Release H <sup>+</sup> ions in aqueous solution $\text{HCl} + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+ + \text{Cl}^-$	Release OH <sup>-</sup> in solution $\text{NaOH(aq.)} \rightarrow \text{Na}^+ + \text{OH}^- \text{(aq.)}$	
Reaction with metals	$\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$	$2\text{NaOH} + \text{Zn} \rightarrow \text{Na}_2\text{ZnO}_2 + \text{H}_2$	
Reaction of oxides	Metal oxide + acid → salt + water $\text{Cu}_2\text{O} + \text{HCl} \rightarrow 2\text{CuCl}_2 + \text{H}_2\text{O}$	Non-metallic oxide + base → salt + water $\text{Ca(OH)}_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$	
Reaction with carbonates/hydrogencarbonates	Metal carbonate + acid → salt + carbon dioxide + water $\text{Na}_2\text{CO}_3 + 2\text{HCl} \rightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$ $\text{NaHCO}_3 + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$	No reaction, they are rendered inert	
Neutralization	Acid + Base = Salt		

Acid	Uses	Base	Uses
1. Citric acid	As a food preservative, Vit C	Potassium hydroxide	in alkaline batteries
2. Acetic acid	As a food preservative	Sodium Hydroxide	in manufacture of soaps
3. Tartaric acid	In the preparation of baking power	Calcium hydroxide	in softening of hard water
4. Boric acid	As an eye wash	Magnesium Hydroxide	as an antacid -
5. Carbonic acid	In flavouring drinks	Ammonium Hydroxide	removes grease stains from clothes

### Salts:

- Solids with high melting points
- Mostly soluble in water
- Can conduct electricity in molten state
- 2 salts in solution may react to form 2 new salts
- Can be hydrated salts containing water of crystallization e.g.  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- Sodium chloride is common salt used in cooking and as preservative
- Washing soda is used in laundries
- Bleaching powder is used to disinfect water
- Baking soda is used in making bread and cakes

- Gypsum is used to make Plaster of Paris. This is used to make plaster casts to set bones and to make toys