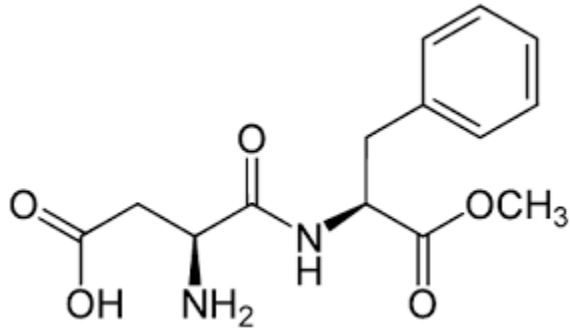


Concepts and formulas to remember :

Aspartame:

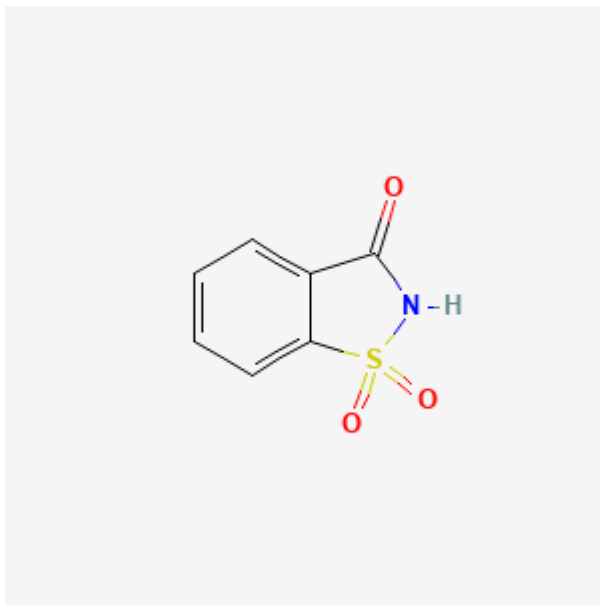


It has an ester and COOH group and 1 amide group

100 times more sweeter than sugar

Use of aspartame is limited to cold foods and soft drinks because it is unstable at cooking temperature

Saccharin:



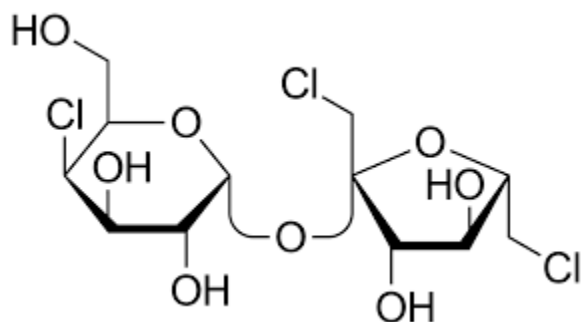
550 times more sweeter than sugar

NO of double bonds :6

No of sp² carbon :7

Number of oxygen : 2

Sucralose:



Tri chloro Derivative of sucrose

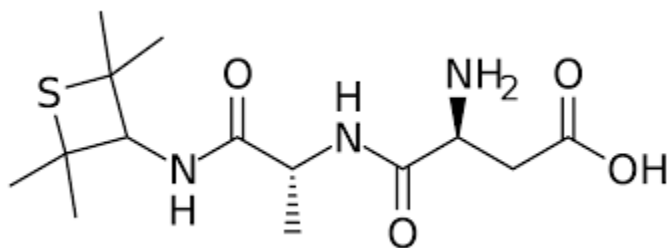
600 times sweter than sugar

Its appearance and taste are like sugar. It is stable at cooking temperature. It does not provide calories.

Number of chlorines : 3

Rest is sucrose structure

Alitame:



2000 times sweeter than sugar

No of S atoms is 1

No of N atoms : 3

Number of oxygen: 4

Number of sp² carbon :3

1 COOH group

It is high potency sweetener, although it is more stable than aspartame, the control of sweetness of food is difficult while using it.

Anti oxidants :

These are important and necessary food additives. These help in food preservation by retarding the action of oxygen on food. They act through several chemical mechanisms. The two most familiar antioxidants are butylated hydroxy toluene (BHT) and butylated hydroxy anisole (BHA). The addition of BHA to butter increases its shelf life from months to years. Sometimes BHT and BHA along with citric acid are added to produce more effect. Sulphur dioxide and sulphite are useful antioxidants for wine and beer, sugar syrups and cut, peeled or dried fruits and vegetables

Soaps and Detergents:

Soaps: Soaps used for cleaning purpose are sodium or potassium salts of long chain fatty acids, e.g., stearic, oleic and palmitic acids. Soaps containing sodium salts are formed by heating fat (i.e., glyceryl ester of fatty acid) with aqueous sodium hydroxide solution. This reaction is known as saponification.

Detergents: Synthetic detergents are mainly classified into three categories: (i) Anionic detergents (ii) Cationic detergents and (iii) Non-ionic detergents

- (i) **Anionic Detergents:** Anionic detergents are sodium salts of sulphonated long chain alcohols or hydrocarbons. Alkyl hydrogensulphates formed by treating long chain alcohols with concentrated sulphuric acid are neutralised with alkali to form anionic detergents. Similarly alkyl benzene sulphonates are obtained by neutralising alkyl benzene sulphonic acids with alkali.
- (ii) **Cationic Detergents:** Cationic detergents are quaternary ammonium salts of amines with acetates, chlorides or bromides as anions. Cationic part possess a long hydrocarbon chain and a positive charge on nitrogen atom. Hence, these are called cationic detergents. Cetyltrimethylammonium bromide is a popular cationic detergent and is used in hair conditioners. Cationic detergents have germicidal properties and are expensive, therefore, these are of limited use.
- (iii) **Non-ionic detergents** do not contain any ion in their constitution. One such detergent is formed when stearic acid reacts with polyethyleneglycol. Liquid dishwashing detergents are non-ionic type. Mechanism of cleansing action of this type of detergents is the same as that of soaps.

