

FOOD ADDITIVES & E NUMBERS - FACTS

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Food additives aren't a recent discovery, have been used by mankind for centuries. Our ancestors used salt to preserve meats and fish, added herbs and spices to improve the flavor of foods, preserved fruit with sugar, and pickled olives and cucumbers in a vinegar solution. Today, with the advent of processed foods, there has been a massive explosion in the chemical adulteration of foods with additives. Considerable controversy has been associated with the potential threats and possible benefits of food additives.

Why Use Additives?

Food made at home is always at its best when eaten straight away. Food produced on the large scale that is needed to supply supermarkets and other food shops has to be transported and stored before it is consumed. It has to stay in highest condition over a much longer period of time than home-cooked food.

Food Additives are substances added intentionally to foodstuffs to perform certain technological functions, for example to colour, to sweeten or to preserve, they are so essential that additives are used even in certain organic foods.

In many countries, lots of food is lost because it 'goes off' due to microbial growth before it can be eaten. Food poisoning also shows the dangers of contaminated food and without the use of preservatives; it would quite likely be more common. However food additive is defined as: any natural or artificial material, other than the basic raw ingredients, used in the production of a food item to improve the final product or any substance that may affect the characteristics of any food, including those used in the production, processing, treatment, packaging, transportation or storage of food.

In the European Union (EU) Food additives are often referred to as E-numbers as in the European Union countries additives are numbered with a prefix E. The E thus refers to an approved additive.

Additives are not used to cover problems (such as spoiling) in the food, but are often used to prevent spoilage or other loss of quality. All additives are tested for toxicity and safety. However, side effects can never completely be excluded.

There are many categories of food additives, such as:

- Food Colours
- Preservatives
- Antioxidants

- Sweeteners
- Emulsifiers, Stabilisers, Thickeners and Gelling Agents
- Flavour enhancers and flavourings

Food Colours

The primary reasons for adding colours to foods include:

- To offset colour loss due to exposure to light, air, extremes of temperature, moisture and storage conditions
- To compensate for natural or seasonal variations in food raw materials or the effects of processing and storage to meet consumer expectations (Masking or disguising inferior quality, however, are unacceptable uses of colours).
- To enhance colours that occur naturally but at levels weaker than those usually associated with a given food.

Colours commonly found include caramel (E150a), which is used in products such as gravy and soft drinks; and curcumin (E100), a yellow colour extracted from turmeric roots.

Some people think that adding colour makes food look more attractive, while other people think added colours are unnecessary and misleading.

Preservatives

These help stop food 'go off' and mean that food can be kept safe for longer. Most food that has a long shelf-life is likely to include preservatives, unless another method of preserving has been used ' such as freezing, canning or drying.

For example, to stop mould or bacteria growing, dried fruit is often treated with sulphur dioxide (E220); and bacon, ham, corned beef and other 'cured' meats are often treated with nitrite and nitrate (E249 to E252) during the curing process. More traditional preservatives such as sugar, salt and vinegar are also still used to preserve some foods.

Antioxidants

Any food made using fats or oils - from meat pies to mayonnaise - is likely to contain antioxidants.

These make foods last longer by helping to stop the fats, oils and certain vitamins from combining with oxygen in the air - this is what makes food taste 'off' – become rancid and lose colour.

Vitamin C, also called ascorbic acid or E300, is one of the most widely used antioxidants.

Sweeteners

The desire for the pleasure of sweetness has a strong influence on what people choose to eat and drink. Since early times, people have sought out foods with sweet taste; for example, drawings on the walls of Egyptian

tombs show bee-keepers collecting honey, and sugar cane was grown in India some 2000 years ago.

Today, sucrose, or table sugar, is the taste standard by which all other sweeteners are measured. An "ideal" sweetener tastes like sucrose, is colourless, odourless, readily soluble, stable and economical. Some sweeteners, like sugar, contain calories. And some are low-calorie or calorie free Sweeteners are lower in calories and safer for teeth; sweeteners are often used instead of sugar in products such as fizzy drinks, yoghurt and chewing gum.

'Intense sweeteners', such as aspartame (E951), saccharin (E954) and acesulfame-K (E950) are many times sweeter than sugar and so only very small amounts are used.

Bulk sweeteners, such as sorbitol (E420), have about the same sweetness as sugar and so they are used in similar amounts to sugar. If you give concentrated soft drinks that contain sweeteners to children aged under 4, it's important to dilute them more than you would for an adult. This is to avoid children having large amounts of sweetener.

Emulsifiers, Stabilisers, Thickeners and Gelling Agents

Add oil to water and the two liquids will never mix. At least not until an emulsifier is added. Emulsifiers are molecules with one water-loving (hydrophilic) and one oil-loving (hydrophobic) end. They make it possible for water and oil to become finely dispersed in each other, creating a stable, homogenous, smooth emulsion.

Emulsifiers such as Lecithins (E322), help mix ingredients together that would normally separate, such as oil and water. Stabilisers, such as locust bean gum (E410) made from carob beans, help stop these ingredients from separating again.

Emulsifiers and stabilisers also give foods a consistent texture. They are used in foods such as low-fat spreads and other sweet and savoury foods. The most common gelling agent is pectin (E440), which is used to make jam. Gelling agents are used to change the consistency of food. Thickeners help give body to food in the same way as adding flour thickens a sauce.

Flavour enhancers and flavourings

Flavour enhancers are used to bring out the flavour in a wide range of savoury and sweet foods without adding a flavour of their own.

For example monosodium glutamate (E621), known as MSG, is added to processed foods, especially soups, sauces and sausages.

Flavour enhancers are also used in a wide range of other foods including savoury snacks, ready meals and condiments.

Flavourings, in contrast, are added to a wide range of foods, usually in very small amounts, to give a particular taste or smell.

Flavourings don't have E numbers because they are controlled by different laws to other food additives.

Ingredients lists will say if flavourings have been used, but individual flavourings might not be named. Salt, although not classed as a food additive, is the most widely used flavour enhancer.

Why are additives given E numbers?

E numbers are codes for food additives and are usually found on food labels throughout the European Union. The numbering scheme follows that of the International Numbering System (INS) as determined by the Codex Alimentarius committee. Only a subset of the INS additives are approved for use in the European Union, giving rise to the 'E' prefix. EU legislation requires most additives used in foods to be labelled clearly in the list of ingredients, either by name or by an E number.

This provides you with information about the use of additives in foods and allows you to avoid foods containing specific additives if you wish. Giving an additive an E number means that it has passed safety tests and has been approved for use in the European Union.

E numbers are universally adopted by the food industry worldwide, also encountered on food labeling in other jurisdictions, including Australia, and New Zealand. They are increasingly (though still rarely) found on North American packaging, especially in Canada.

It is known that many E numbers contain unlisted ingredients in them generally additives derived from animals and insects not suitable for vegetarians, vegans or other groups such as religious Muslims, Jews and Hindus.

The E numbers are categorized as follows:

- E100–E199 (colours)
- E200–E299 (preservatives)
- E300–E399 (antioxidants, acidity regulators)
- E400–E499 (thickeners, stabilizers, emulsifiers)
- E500–E599 (acidity regulators, anti-caking agents)
- E600–E699 (flavour enhancers)
- E900–E999 (surface coating agents, gases, sweeteners)
- E1000–E1999 (additional chemicals)