

Health & Nutrition Sciences

Food additives: Function, purpose and regulation

A food additive is a substance that has an important technological function when used in the production or storage of a food or beverage product. As a result, the additive becomes an essential component of the final product, in order to create a safe product that is also palatable and attractive to the consumer.

Food additives come from different sources – many substances used as additives occur naturally whereas other additives can be chemically synthesised. Food additives can also be derived from natural sources such as animals or minerals.



Food additives are used in small quantities for a wide variety of functions in a food or beverage, for example:



- Low or no-calorie sweeteners such as aspartame, sucralose and acesulfame K, are used instead of sugar, to impart a sweet taste.
- Colours which add or restore colour, such as paprika extract.
- Preservatives which protect food against deterioration and spoilage caused by micro-organisms, thus prolonging the shelf life of the food and helping to protect against food poisoning, such as Potassium Sorbate.
- Emulsifiers and stabilisers which help mixtures of different phases – such as oil and water - remain stable, such as using xanthan gum in creamy dips.
- Antioxidants which protect foods against oxidative deterioration, such as the ascorbic acid found in lemon juice, and so also preventing discolouration.

More than 300 substances are authorised for use as food additives in the European Union. Food additives must be declared in the ingredients list using both their function name, such as 'Colour' or 'Sweetener', and either its technological name or its E number.

Before an additive can be used in a food or beverage, it must be authorised for use via a process that requires the technological need to be clearly demonstrated and a rigorous safety evaluation to be conducted. Both requirements have to be fulfilled before an additive is authorised for use and conditions of use are specified. Any food or beverage manufacturer must make sure it uses food additives according to the controls laid down in the legislation.



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Food Additives and the EFSA

In the European Union, the European Food Safety Authority (EFSA) is the risk assessment body that regularly examines the safety of food additives based on the latest scientific knowledge. This process evaluates an additive's composition, and how the additive interacts with our bodies, whether it is absorbed or broken down, and whether it has any harmful effects (looking at both the short and longer term).

Based on the safety evaluation, EFSA establish the Acceptable Daily Intake (ADI) for a given food additive. EFSA also assesses whether even at high levels of consumption the permitted levels of additives ensure that the ADI is not exceeded.



The ADI represents the amount of an additive that can be consumed every day over a lifetime without posing an appreciable risk to health. The ADI is set on a body weight basis and so is protective for all population groups including children and the elderly.

In the United Kingdom, the Food Standards Agency is the competent authority that conducts safety reviews for food additives.

Key take-aways:

A food additive is a substance that has an important technological function when used in the production or storage of a food or beverage.

Food additives must be authorised for use by Regulators; food and beverage manufacturers must use additives in accordance with requirements set out in legislation

The intended use of a food additive in food and beverages must be shown to be safe for all population groups, including children, before it can be authorised.