Family Friendly Factsheets!
E numbers

What?
Food additives are substances added to foods to perform a range of functions. E numbers are food additives which have been assigned a 'European Number' or E number following safety testing. If an additive has an E number it shows that it has passed safety tests and been permitted for use throughout the European Union (EU). E number approval is constantly reviewed and monitored and is revised if new scientific data is discovered.

E numbers are natural, nature identical or artificial:

- **Natural additives** are substances found naturally in foods which are extracted for use in another foodstuff. Examples include red/purple colour from beetroot (E162) which can be added to sweets and instant desserts or purple colour from black carrots (E163) which can be added to dry powders.
- **Nature identical additives** are man-made copies of substances that occur naturally in foods. They are identical to natural substances but have greater purity thus reducing the quantity of additive needed in a foodstuff. An example is benzoic acid (E210, E211, E212, and E213) which is used as a preservative in acidic foods and drinks such as pickles, chutneys and fizzy drinks.
- **Artificial additives** do not occur naturally in foods but are man made. An example is aspartame (E951) which is an artificial sweetener used in low calorie fizzy drinks, it is used in a reported 6,000 food products worldwide.

Why?
E Numbers are categorised by number and function:

E Number	*Function*
100 – 199	Colours
200 – 299	Preservatives
300 – 399	Antioxidants & acidity regulators
400 – 499	Thickeners, stabilisers & emulsifiers
500 – 599	pH regulators & anti-caking agents
600 – 699	Flavour enhancers
900 – 999	Miscellaneous
1100 – 1599	New chemicals that do not fall into standard classification schemes

What do these functions mean?

- **Colours -** replace natural colour lost during processing or storage, add colour to naturally colourless food products such as sweets or make products consistent in colour. Colourings do not impart nutritional value or flavour but are important in terms of consumer acceptability, for example without colourings peas wouldn't be green and margarine wouldn't be yellow. Food colours can only be used to enhance visual appearance not deceive or conceal consumer opinion.
- **Preservatives –** increase the shelf life of foods by preventing deterioration by mould, bacteria, yeast or environmental influence such as oxygen and moisture which can cause flavour and colour changes. Use of preservatives reduces food waste. Preservatives can be artificial such as sulphur dioxide or natural such as sugar and salt.
- **Antioxidants and acidity regulators –** help make foods last longer by preventing rancidity or 'going off' of fats and oils and browning of cut fruits and vegetables. Natural Vitamin C (E300) is one of the most widely used antioxidant. Predominantly acidity regulators are used to prevent fermentation of acidic foods.
- **Thickeners, stabilisers & emulsifiers –** emulsifier's help ingredients remain combined and prevent them separating out i.e. in mayonnaise. Stabilisers do exactly what they say on the tin stabilising emulsions or mixtures of ingredients. Thickeners help give body to products such as soups and gravies.
- **pH regulators & anti-caking agents -** pH regulators are generally used as preservatives for use with acidic and alkaline foodstuffs. Anti-caking agents are used in dry products to prevent clumping such as in sugar and powders.
- **Flavour enhancers –** are used to enhance the flavour of a range of foods without imparting flavour of their own. The most common flavour enhancer is monosodium glutamate (E621), known as MSG, which is added to many processed foods.

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Where?
Food additives are included in packaged and processed foods to fulfill a range of functions as discussed. Additives must be named on food labels either by name or by E number; these are shown on the ingredients list of packaged foods. Additives are also commonly labeled by slogan for example, if strawberry jam contains strawberry flavouring rather than real strawberries it will be labeled "artificial strawberry flavour" whereas if the flavour is from strawberries alone it will be labeled “made with real strawberries”.

Safe?
Food additive approval can take up to 10 years, safety testing can take up to 5 years, evaluation by the European Food Safety Authority takes 2 years and EU approval for use takes a further 3 years. EU law states that additives are allowed only if:

- They present not hazard to health at the level used in foods
- Reasonable need for the additive can be demonstrated (e.g. in processing or preservation)
- They do not mislead the customer

As such additives are considered safe and it must be noted that not all additives are bad for you.

Additives and my child
There is much controversy about the effects of food additives, particularly artificial food colourings, on children’s behaviour. In 2004 a trail run by the Food Standards Agency (FSA) provided conclusive evidence showing the detrimental effects of the food additives (versus placebo) on children's behaviour, according to parents' ratings. Scientists at the UK's Asthma & Allergy Research Centre made a study of artificial colourings in drinks and concluded that 'significant changes in children's hyperactive behaviour could be produced by the removal of colourings and additives from their diet', the artificial colourings in question were Tartrazine (E102), Sunset Yellow (E110), Carmoisine (E122), and Ponceau 4R (E124) and the preservative Sodium Benzoate (E211). In light of this it is advisable to exclude food colourings and additives from a child’s diet wherever possible.

How do I leave E numbers behind?
Much of the research has been surrounding the effect of artificial food colourings on child’s behaviour. Colourings predominately fall into the band of E100 – 199 and as such you should be able to spot them on food labels. Many supermarkets are reducing the use of artificial food colourings particularly in food products aimed at a child market so your task of checking for them on labels should be easier than it once was. Homemade food will obviously have less chance of additives getting into it so it could be time to pull on your pinny! Buying foods which don’t look unrealistically colourful, such as bright blue sweets or vividly orange squash, is another way of reducing your child’s intake; generally the more natural the food product the less additives it will contain.

Most importantly though don’t worry too much, a few additives every now and then won’t do your child any harm, additives are rigorously tested and frequently reviewed for safety so the likelihood is if its on the market it’s considered safe to eat.