

Sweeteners Fact Sheet

Sweeteners provide an intense sweet flavour and are an alternative way to satisfy our sweet tooth. **Small changes** make a **big difference**.



86
PERCENT

of Americans use low-calorie, reduced sugar, or sugar-free foods and beverages.¹

Sweeteners

Discovered by accident in the late 19th century, sweeteners are a relatively recent introduction into the food and drink supply. Sweeteners provide an intense sweet flavour and their use has expanded as we look for alternative ways to satisfy our sweet tooth, without the associated energy (kilojoules) of regular sugar.

Sweeteners can be split into three key categories:

- artificial sweeteners
- nutritive sweeteners
- natural intense sweeteners.

Artificial Sweeteners

Artificial or non-nutritive sweeteners are often used as an alternative to sugar. These sweeteners are energy (kilojoule) free.

The most commonly used artificial sweeteners in the Australian food supply are:

Name	Code number	Brand name
Acesulphame K	950	Hermesetas Gold® Sunnett®
Alitame	956	Aclame®
Aspartame	951	Equal® Equal Spoonful® Hermesetas Gold® Nutrasweet®
Cyclamate	952	Sucaryl®
Neotame	961	
Saccharin	954	Hermesetas® Sugarella® Sugarine® Sweetex®
Sucralose	955	Splenda®



Non-nutritive sweeteners are found in a wide range of food and drink products in the supermarket. Many exist as 'tabletop sweeteners' which can be used to add sweetness to tea, coffee, cereal and fruit in place of sugar. While there are also a huge number of other products such as cordials, soft drinks, jellies, yoghurt, ice-cream, chewing gum, lollies, desserts and cakes, which use these sweeteners. These products are often labelled as 'diet', 'low joule' or 'no sugar'.

Under Australian law, food and drink manufacturers must declare the use of an artificial sweetener in a product. The sweeteners are either listed by their name or three-digit number.

The example below identifies the non-nutritive sweeteners, which have been added to a commercially available vanilla chocolate sundae.

Vanilla chocolate sundae

Acesulphame K (950)
Sucralose (955)

INGREDIENTS

WATER, MILK SOLIDS, SORBITOL, POLYDEXTROSE, CREAM, MALTITOL, COCOA (0.5%), HUMECTANT (1520), VEGETABLE ORIGIN EMULSIFIERS [477, 471 (SOY)], VEGETABLE GUMS (412, 440, 405), VEGETABLE FAT, THICKENER (1422), MINERAL SALTS (341, 339), FLAVOURS, SALT, COLOUR (160b), SWEETENERS (955, 950), PRESERVATIVE (202).



Nutritive sweeteners

Nutritive sweeteners are based on different types of carbohydrates. Products that contain these sweeteners may be labelled as 'carbohydrate modified'. The sweeteners provide a sweet taste, have less energy (kilojoules) than sugar but they are not kilojoule free. The most commonly found nutritive sweeteners in food and drinks are:

Name	Code number	Side effects
Fructose	No code	<ul style="list-style-type: none"> • fruit sugar • same kilojoules as sugar but sweeter
Isomalt	953	<ul style="list-style-type: none"> • less kilojoules than sugar but half the sweetness • may have a laxative effect • can also be listed as 'humectant'
Lactitol	966	<ul style="list-style-type: none"> • these are all sugar alcohols • same kilojoules as sugar, except mannitol • may have a laxative effect and cause wind and diarrhoea • can also be listed as 'humectant'
Mannitol	421	
Maltitol	967	
Xylitol	965	
Sorbitol	420	
Maltodextrin	No code	<ul style="list-style-type: none"> • same kilojoules as sugar • also listed as 'hydrolysed corn syrup' or 'glucose syrup'
Polydextrose	1200	<ul style="list-style-type: none"> • provides minimal kilojoules • may have a laxative effect
Thaumatococin	957	<ul style="list-style-type: none"> • can also be listed as 'flavour enhancer'

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Sorbitol (420)
Polydextrose (1200)
Maltitol (967)

Natural intense sweeteners

A more recent addition to the sweeteners market is Stevia, a 'natural' sweetener. Stevia is extracted from the Stevia Rebaudiana plant, a shrub from the chrysanthemum family native to South America. Stevia is between 200 - 300 times sweeter than regular sugar and contains no energy (kilojoules).

Stevia was introduced to Australia in 2008 but it has been used by South American tribes for centuries and has been commercially available in Japan since the 1970s. In food and drink products, Stevia is listed by either its name or three digit number (960). It is commonly used in flavoured waters and soft drinks. The example below shows a stevia-sweetened flavoured water.

Flavoured water

Water, Cane Sugar, Flavour, Food Acids (330, 340), Salt (Sodium Chloride), Preservative (211), Sweetener, (960), Antioxidant (385).



Stevia (960)

Cooking with sweeteners

The heat generated during cooking (e.g. baking) can change the taste of many sweeteners. The table below summarises each sweetener's suitability for cooking. For the ones that aren't suitable for cooking, they can be added once cooking has finished.

Name	Code number	Suitability for cooking
Acesulphame K	950	No
Alitame	956	Yes Commercial use only
Aspartame	951	Yes In powder form only
Cyclamate	952	No Gives a bitter aftertaste
Neotame	961	Yes Limited availability however
Saccharin	954	No Gives a bitter aftertaste
Stevia	960	Yes
Sucralose	955	Yes Use in equal quantities to sugar

Selecting sweeteners

For those with a particularly sweet tooth, sweeteners provide an alternative to sugar without the associated energy (kilojoules). There are lots of different ways sweeteners can be incorporated into our diet and selecting a particular sweetener over another will depend on what you are trying to achieve.

For those trying to resist the sweetness in a cup of tea or coffee, an artificial or 'tabletop' sweetener can be used instead.

Or perhaps you are looking to use a sweetener in a recipe as a sugar substitute. A natural intense sweetener would be the pick as it is more heat stable than other sweeteners.

And if you don't have any particular preference for sweeteners, you are bound to experience a huge variety when you next eat or drink products such as 'diet' soft drinks, 'lite' ice-cream or chewing gum, to name a few.

Safety of sweeteners

Artificial sweeteners have been the subject of intense scrutiny for decades. Critics of artificial sweeteners contend that artificial sweeteners cause a variety of health problems, including cancer. However, in a review of the evidence, undertaken by World Cancer Research Fund, it was found that the artificial sweeteners in studies are administered to animals in very large amounts, far greater than humans could consume in foods and drinks. As a result, the WCRF notes that artificial sweeteners do not have a detectable effect on the risk of any cancer.

In addition, Food Standards Australia New Zealand (FSANZ) regularly reviews safety evidence and recommends a maximum level permitted in foods before approving sweeteners, and other additives, for use in Australia.

One more thing...

It's important to remember that although foods containing sweeteners may be lower in sugar, they may actually be higher in other nutrients, such as fat. Examples include 'sugar-free chocolate' and 'skinny ice creams'.

The use of artificial sweeteners therefore does not give a green light to eat or drink a product in large quantities.