

Fact Sheet - Sucralose

Sucralose – how sweet it is

Flavour Creations' Diet Lemon and Diet Raspberry Cordial Drinks are now sweetened with Sucralose* and Sunett[®], making great tasting and safe sugar free beverages for you and your clients.

Health benefits

Nonnutritive (or intense) sweeteners offer consumers a way to enjoy the taste of sweetness with little or no energy and/or glycemic response. They may also assist in the management of weight, diabetes and other chronic disease management, and the prevention of dental caries.

Diabetes Australia and The American Dietetic Association endorse the use of nonnutritive sweeteners in a diet that is guided by federal nutrition recommendations, the opinion of nutrition professionals, as well as individual health goals^{1,2}.

Safety

The use of sweeteners is evaluated by governing bodies throughout the world. These include the Food and Drug Administration (FDA) of the United States and expert scientific committees such as the Scientific Committee on Food (SCF) of the European Commission, the Joint Expert Committee of Food Additives (JECFA) of the United Nations Food and Agricultural Organization, and the World Health Organization (WHO).

In Australia, FSANZ approves the safety of all food additives before permitting their use in foods. This is determined via toxicological testing and thorough research. During this process the following basic questions are asked:

- How is the additive made?
- How much of the additive will be consumed?
- Will certain groups be particularly susceptible?
- Is it safe and does it cause adverse effects to the individual or offspring, including cancer, or chronic toxicity?

This testing establishes a safety limit or conditions of use that are expressed as the Acceptable Daily Intake (ADI). The ADI is the amount of a food additive that can be ingested daily over an entire lifetime without any appreciable risk to health. Occasional exposure above the ADI does not necessarily indicate a health risk as ADI's incorporate substantial safety margins, usually 100 times less than the maximum level at which no observed effect has been found to occur.

The ADI for Sucralose and Sunett, as determined by the WHO/FAO Joint Expert Committee on Food Additives, is 0 – 15 mg per kilogram of body weight per day³.

For an 80 kg person, this would equate to the consumption of more than 20 cups of Flavour Creations Diet Lemon Cordial every day, over an entire lifetime, with no appreciable health risk arising from the sweetener!

Clearly, there is no basis for concern regarding the health and safety of Flavour Creations Diet Cordials.

Alternative sweeteners

Saccharin

In the 70's, the FDA proposed a ban on saccharin as it was reported to be carcinogenic in rats. Saccharin has since been cleared as a potential carcinogen and is approved by FSANZ and the FDA for use in foods, however at a lower ADI than for Sucralose and cyclamate². Saccharin has also been found to have a delayed bitter aftertaste, one that is often associated with diet drinks⁴.

*** Sucralose is a concentrated form of the household brand Splenda[®], readily available in supermarkets.**

Cyclamate

There has been some scientific evidence that suggests that cyclamate may be unsuitable for some susceptible individuals who appear to metabolise cyclamate to a moderately toxic compound. However, cyclamate is generally considered safe and is approved by FSANZ and more than 50 countries worldwide².

Aspartame

Aspartame receives more attention in the media about its safety than any other intense sweetener. Intestinal enzymes break-down aspartame to aspartic acid, methanol, and phenylalanine. Individuals with phenylketonuria, an inborn error of metabolism, cannot metabolise phenylalanine. Some individuals also report allergic reactions to aspartame, including swelling of the lips, tongue and throat; dermatological reactions and respiratory reactions. As such, FSANZ and the FDA require that foods containing aspartame be clearly labeled with an advisory statement warning of the presence of the sweetener⁵.

Sucralose

Sucralose is a substituted disaccharide. That is, it has the same basic structure as sucrose however some groups on the molecule have been replaced to prevent it from being broken down and used for energy.

Sucralose provides essentially no energy; it is poorly absorbed and is excreted in the faeces unchanged. Absorbed Sucralose is excreted in the urine unchanged. Unlike most other food additives which only undergo animal studies, Sucralose has

undergone human testing and it was concluded that the sweetener did not pose any carcinogenic, reproductive or neurological risk to human beings².

Sunett®

Sunett is the brand name for a sweetener known as acesulphame-K (the 'K' simply stands for the nutrient potassium). Similar to Sucralose, acesulphame-K provides no energy, and since it is excreted unchanged in the urine, it does not influence the intake of potassium. Acesulphame-K was first evaluated for safety by JECFA in 1983 and has been approved as a general purpose sweetener since 1988. It has undergone over 90 scientific studies to verify its health and safety and is used in over 100 countries around the world².

No sweetener alone tastes just like sugar. That's why Flavour Creations uses a specially formulated blend of Sucralose and Sunett to mimic the flavour profile of sugar, with just the right sweetness peak and lingering sensation. Furthermore, both Sucralose and Sunett have intense sweetening power and in combination have sweetening synergy, meaning the amounts added to our drinks are very small, making the transition to diet drinks safe and enjoyable for everyone including children, the elderly, pregnant women, nursing mothers, those seeking a calorie controlled diet and people with diabetes.

References

1. Diabetes Australia 2004, Fact Sheet: 'Food choices for people with diabetes', Diabetes Australia (National Publications Division), Canberra.
2. The American Dietetic Association 2004, 'Position of the American Dietetic Association: Use of Nutritive and Nonnutritive Sweeteners', *Journal of The American Dietetic Association*, vol. 104, no. 2, pp. 255 – 275.
3. Food Standards Australia New Zealand 2004, 'Consumption of intense sweeteners in Australia and New Zealand: Benchmark Survey 2003', Roy Morgan Research Report, Canberra.
4. Horne, J., Lawless, H. T., Speirs, W. and Sposato D. 2002, 'Bitter Taste of Saccharin and Acesulfame-K', *Chemical Senses*, vol. 27, no. 1, pp. 31 – 38.
5. Food Standards Australia New Zealand 2002, *Standard 1.2.3 Mandatory Warning and Advisory Statement and Declarations*, Food Standards Australia New Zealand, Canberra