Opinion of the Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food on a request from the Commission related to

Maltitol Syrup E 965(ii) new production process.
Change of specification

Question number EFSA-Q-2005-289

Adopted on 19 April 2006 by written procedure

SUMMARY

The Commission has asked the European Food Safety Authority to issue an opinion on a new production method for the food additive maltitol syrup (E965ii).

Maltitol syrup is authorised in Europe for use as a sweetener in food. The present specification describes a production method where a mixture of sugars are reduced to the corresponding sugar alcohols resulting in a mixture of maltitol, sorbitol and hydrogenated glucose syrup.

According to the newly proposed procedure sorbitol, maltitol and hydrogenated glucose syrup are produced separately and subsequently blended to achieve the final maltitol syrup.

The Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food (AFC Panel) concluded that provided that the composition of the product based on the modified process will be similar to the existing product, and will be in accordance with the existing specification, the Panel considers that the previous evaluation by the SCF will also cover a product prepared by this method, which can therefore be included in the definition of the maltitol syrup specification.
KEYWORDS

Maltitol syrup, E965(ii), food additive, specification

BACKGROUND

Maltitol syrup E 965 (ii) is authorised for use as a food additive in the European Union by European Parliament and Council Directives 95/2/EC and 94/35/EC. Specifications for maltitol syrup are laid down in commission Directive 95/31/EC (as amended)

The Scientific Committee on Food has previously evaluated the safety of maltitol syrup when considering maltitol and maltitol based products in 1984 (SCF, 1985) and 1999 (SCF, 1999). At that time the Committee considered that its use is acceptable provided that limitations due to the laxative action were kept in mind.

A manufacturer has made a request to use a modified process for the production of maltitol syrup. The current production process involves catalytic hydrogenation of high maltose content glucose syrup. The modified process differs as the hydrogenation step is carried out on the separate constituents of glucose, maltose and low dextrose equivalent (DE) glucose syrup which are then combined. The manufacturer has stated that the resulting maltitol syrup produced in this new process meets the current specifications.

TERMS OF REFERENCE

In accordance with article 29(1) (a) of Regulation No 178/2002, the European Commission asks the European Food Safety Authority to provide a scientific opinion on the safety in use of maltitol syrup produced by a modified production process.
ASSESSMENT

Chemistry and specification

The present specification for E 965(ii) SYRUP MALTITOL reads as follows:

Synonyms: Hydrogenated high-maltose-glucose syrup, hydrogenated glucose syrup.

Definition: A mixture consisting of mainly maltitol with sorbitol and hydrogenated oligo and polysaccharides. It is manufactured by the catalytic hydrogenation of high maltose-content glucose syrup. The article of commerce is supplied both as a syrup and as a solid product.

Assay: Content not less than 99 % of total hydrogenated saccharides on the anhydrous basis and not less than 50 % of maltitol on the anhydrous basis.

Description: Colourless and odourless, clear viscous liquids or white crystalline masses.

Identification:

A. Solubility: Very soluble in water, slightly soluble in ethanol.

B. Thin layer chromatography: Passes test.

Purity: Water not more than 31%; Reducing sugars not more than 0.3% (as glucose); Sulphated ash not more than 0.1%; Chlorides not more than 50 mg/kg; Sulphates not more than 100 mg/kg; Nickel not more than 2 mg/kg; Lead not more than 1 mg/kg.

Manufacturing method

The presently applied production process is based on the hydrogenation of high maltose syrup (>50%). This high maltose syrup is obtained directly by hydrolysis of starch (fig

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1) or obtained by combining the individual starch hydrolysis products dextrose, maltose and low dextrose equivalent (DE) glucose syrup (fig 2).

According to the newly proposed procedure each of the individual starch hydrolysis products dextrose, maltose and low DE glucose syrup is first subjected to hydrogenation. The resulting products sorbitol, maltitol and hydrogenated glucose syrup are subsequently blended to achieve the final maltitol syrup (> 50% maltitol on a dry basis). (fig. 3)

For the production of dry maltitol syrup an additional drying of sorbitol, maltitol and hydrogenated glucose syrup is performed before the final blending (fig 4).

The difference between the old and the newly proposed process is the step at which hydrogenation takes place.

**Existing SCF opinions**

The Scientific Committee on Food has previously evaluated the safety of maltitol syrup when considering maltitol and maltitol based products in 1984 and 1999 (SCF 1985 and 1999). At that time the Committee considered that its use was acceptable provided that limitations due to laxative action were kept in mind.

The SCF opinion on maltitol syrup, expressed on December 1 1999, concludes:

“Based on the above [data] the Committee considered that the use of this new material does not raise any additional safety concerns in relation to existing maltitol syrups. Its laxative potential is considered to be similar to, or less than, that of existing maltitol syrups. Its use is therefore considered acceptable.”

**CONCLUSION**

Provided that the composition of the product based on the modified process will be similar to the existing product, and will be in accordance with the existing specification, the Panel considers that the previous evaluation by the SCF will also cover a product prepared by this method, which can therefore be included in the definition of the maltitol syrup specification.
DOCUMENTS SUBMITTED TO THE PANEL

SANCO/D3/MW/KmD 4311123, December 12, 2005 with an attached request from SPI Polyols to amend Directive 95/31/EC laying down criteria of purity concerning sweeteners.

SCF Opinion on Maltitol Syrup December 1, 1999

REFERENCES


AFC Scientific Panel members

Robert Anton, Sue Barlow, Dimitrios Boskou, Laurence Castle, Riccardo Crebelli, Wolfgang Dekant, Karl-Heinz Engel, Stephen Forsythe, Werner Grunow, Marina Heinonen, John Chr. Larsen, Catherine Leclercq, Wim Mennes, Maria Rosaria Milana, Iona Pratt, Ivonne Rietjens, Kjettil Svensson, Paul Tobback, Fidel Toldrá
Figure 1 and 2: Maltitol Syrup Manufacture - Existing Routes

Figure 1:

Starch

Hydrolysis

High Maltose Syrup
(>50% maltose dsb)

Hydrogenation

Maltitol Syrup
(>50% maltitol dsb)

Dry Maltitol Syrup
(>50% maltitol dsb)

Figure 2:

Starch

Hydrolysis

Dextrose
Maltose
Low DE Glucose Syrup

High Maltose Syrup
(>50% maltose dsb)

Hydrogenation

Maltitol Syrup
(>50% maltitol dsb)

Dry Maltitol Syrup
(>50% maltitol dsb)

2 dbs = dry solid basis