

PROPOSED AMENDMENTS TO THE FOOD REGULATIONS

(A) TO PERMIT THE USE OF NEW FOOD ADDITIVES AND INGREDIENTS

1. Three new types of enzyme modified steviol glycosides (listed below) will be permitted for use as sweetening agents under Regulation 18. They will be accorded the same provisions currently permitted for steviol glycosides in the Thirteenth Schedule. The Joint FAO/WHO Expert Committee on Food Additives (JECFA) had assessed the safety of enzyme modified steviol glycosides produced using the enzymes from genetically modified strains of *Pichia pastoris* and *Escherichia coli*, and concluded that the Acceptable Daily Intake (ADI) of 0 – 4 mg/kg bw (expressed as steviol) applies to steviol glycosides produced by enzymatic modification. These three types of enzyme modified steviol glycosides are permitted in Australia and New Zealand for use as sweeteners in food. In addition, the enzymatically produced rebaudioside D and rebaudioside E are also permitted for use as sweeteners in food in the United States.
 - (a) Rebaudioside D produced by enzymatic conversion of purified stevia leaf extract using the enzymes UDP-glucosyltransferase (EC 2.4.1.17) and sucrose synthase (EC 2.4.1.13), produced by genetically modified strains of *Pichia pastoris*
 - (b) Rebaudioside E produced by enzymatic conversion of purified stevia leaf extract using the enzymes UDP-glucosyltransferase (EC 2.4.1.17) and sucrose synthase (EC 2.4.1.13), produced by genetically modified strains of *Pichia pastoris*
 - (c) Rebaudioside AM produced by enzymatic conversion of stevioside extracted from stevia leaf using the enzymes UDP-glucosyltransferase (EC 2.4.1.17) and sucrose synthase (EC 2.4.1.13), produced by genetically modified strains of *Escherichia coli* K-12 W311
2. Sodium polyacrylate will be permitted for use in instant noodles (under Regulation 55), to improve strength and texture, in an amount not exceeding 2000 ppm. Sodium polyacrylate is a permitted food additive in Japan, South Korea and China.
3. 2'-fucosyllactose / difucosyllactose (2'-FL/DFL) mixture that contains at least 75% (w/w) 2'-fucosyllactose and at least 5% (w/w) difucosyllactose will be permitted for addition to infant formula (under Regulation 252(6)), in an amount not exceeding
 - 160 mg per 100 ml (in the case of infant formula for infants not more than 6 months of age) and
 - 120 mg per 100 ml (in the case of infant formula for infants more than 6 months of age but not more than 12 months of age).

2'-FL/DFL mixture is permitted for use in infant formula in major developed countries such as the European Union and the United States.

4. Lacto-N-tetraose (LNT) will be permitted for addition to infant formula (under Regulation 252(6)), in an amount not exceeding
 - 80 mg per 100 ml (in the case of infant formula for infants not more than 6 months of age) and
 - 60 mg per 100 ml (in the case of infant formula for infants more than 6 months of age but not more than 12 months of age).

LNT is permitted for use in infant formula in major developed countries such as the European Union and the United States.

5. Sucrose oligoesters, type I and type II (INS 473a) will be included in Part 1 of the Eighth Schedule as a permitted general purpose food additive. It will be permitted for use in food under good manufacturing practice (GMP). JECFA has established the safety of INS 473a and the Codex Alimentarius Commission (CAC) has adopted provisions for the use of INS 473a in various categories of food. INS 473a is also permitted for use in food in major developed countries such as Japan and the United States.

(B) TO EXTEND THE USE OF EXISTING FOOD ADDITIVES

1. Benzoates (referring to benzoic acid and its sodium and potassium salts (INS 210, 211 and 212)) and sorbates (referring to sorbic acid and its sodium, potassium and calcium salts (INS 200, 201, 202 and 203)) will be permitted in the category “Desserts, fruit based, milk and cream” in Part I of the Fourth Schedule, in amounts not exceeding 1000 ppm (as benzoic acid) and 1000 ppm (as sorbic acid) respectively, when the food product contains either benzoates or sorbates as the sole preservative. The CAC has adopted standards for benzoates and sorbates in a similar food category “04.1.2.9 Fruit-based desserts, incl. fruit-flavoured water-based desserts”. Benzoates and sorbates are also permitted in similar food categories in major developed countries such as Canada, Australia and New Zealand.
2. Steviol glycosides will be permitted for use in nine food categories in the Thirteenth Schedule, in amounts not exceeding 50 to 330 ppm, in line with the amounts adopted by the CAC or major developed countries such as the European Union, Australia and New Zealand for similar food categories.

Food categories		Maximum amount (ppm)
1	Semi-preserved fish and fish products, including molluscs, crustaceans and echinoderms (applicable to sweet and sour products only)	100
2	Fully preserved, including canned or fermented fish and fish products, including molluscs, crustaceans and echinoderms (applicable to sweet and sour products only)	100
3	Mustards	130
4	Soups and broths, including mixes	50
5	Cocoa-based spreads, including fillings	330

Food categories		Maximum amount (ppm)
6	Bread and bakery products, and mixes for these products	160
7	Flour confectionery products and mixes for these products (applicable to products for special nutritional use only)	330
8	Semi-preserved caviar and other fish roe products	100
9	Vegetable, nut and seed pulps and preparations	330

(C) TO REVISE THE MAXIMUM LIMITS FOR HEAVY METALS IN FOOD

The current Food Regulations do not have specific maximum limits (MLs) for the following 4 heavy metal / food commodity combinations. Instead, these commodities are subsumed under larger food categories, as shown in the third column of the table below. SFA proposes to adopt the revised MLs shown in the fourth column of the table below. The adoption of these revised MLs follows the MLs adopted by the CAC, and ASEAN's harmonisation of MLs for these 4 heavy metal / food commodity combinations.

<u>Heavy metals</u>	<u>Food commodities</u>	<u>Current maximum limits</u>	<u>Revised maximum limits</u>
(1)	(2)	(3)	(4)
Arsenic	Fat spreads and blended spreads	1 ppm, corresponding to "(27) Other food not specified above" in the Tenth Schedule (<i>This category covers fat spreads and blended spreads.</i>)	0.1 ppm (new category "Fat spreads and blended spreads" in Tenth Schedule)
Lead	Fat spreads and blended spreads	2 ppm, corresponding to "(27) Other food not specified above" in the Tenth Schedule (<i>This category covers fat spreads and blended spreads.</i>)	0.04 ppm (new category "Fat spreads and blended spreads" in Tenth Schedule)
Cadmium	Salt	0.2 ppm for "Any other food containing cadmium" in Regulation 31(5). (<i>This category covers salt</i>)	0.5 ppm (Regulation 31(5))
Mercury	Salt	0.05 ppm for "Any other food containing mercury"	0.1 ppm (Regulation 31(3))

<u>Heavy metals</u>	<u>Food commodities</u>	<u>Current maximum limits</u>	<u>Revised maximum limits</u>
		in Regulation 31(3)(c) <i>(This category covers salt.)</i>	

(D) TO ENSURE COHERENCE IN LEGISLATION

Currently, Regulations 15(1) and 15(2) require that any article of food imported, manufactured or sold in Singapore may only contain permitted food additive(s). Regulation 15(4) then specifies that it is an offence to import, sell, advertise, manufacture, consign or deliver a permitted food additive if its purity does not conform with the specifications provided in the Food Regulations, or if there are no such specifications, with the specifications recommended by JECFA. However, it is not explicitly mentioned that permitted food additives contained in any article of food must also conform to the purity requirements in Regulation 15(4).

To ensure coherence in legislation, Regulation 15(2) will be amended to require, in addition to existing requirements, that when a food contains a permitted food additive (whether that food is imported or locally manufactured), the purity of the food additive must conform to the specifications as provided in the Food Regulations. Where it is not so provided, then the purity of the permitted food additive must conform with JECFA's specifications.