Legislative Proposal Relating to Formula Products and Foods Intended for Infants and Young Children under the Age of 36 Months in Hong Kong

Definition of nutrients

2nd Technical Meeting with Trade

15 March 2013

食物環境衞生署
Food and Environmental Hygiene Department

食物安全中心
Centre for Food Safety

The Definition of Nutrients

- The definition of nutrients are based on the following Codex Standards:
  - Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants (Codex Stan 72-1981);
  - Codex Standard for Follow-up Formula (Codex Stan 156-1987);
  - Codex Standard for Processed Cereal-Based Foods for Infants and Young Children (Codex Stan 74-1981); and
  - Recommended Methods of Analysis and Sampling (Codex Stan 237-1999)

Essential Compositions

Nutrients [Expressed in g/100kcal or g/100kJ]	**Infant Formula**	**Follow-up Formula**
Energy Content [Expressed in kJ/100mL or kcal/100mL]	Calories by calculation	Calories by calculation [Not specified in **CODEX STAN 156-1987**]
Protein	Conversion Factor: N x 6.25 **(N x 6.38 for other milk product or N x 5.71 for soy product)**	As infant formula [Not specified in **CODEX STAN 156-1987**]
Carbohydrates	Total carbohydrates (Determinate by difference)	Available carbohydrates

Essential Compositions

Nutrients [Expressed in g/100kcal or g/100kJ]	**Infant Formula**	**Follow-up Formula**
Lipids	**Total fat** **Lauric and myristic acids ≤ 20% of total fatty acids** **Trans fat ≤ 3% of total fatty acids** **Erucic acid ≤ 1% of total fatty acids** **Total Phospholipids ≤ 300 mg/100 kcal or 72 mg/100 kJ**	**Fat**
Linoleic acid	**Linoleic acid**	**Linoleic acid** (In form of glyceride)
α-linolenic acid	**α-linolenic acid** **Ratio of linoleic acid/α-linolenic acid: Between 5:1 and 15:1**	N.A.

Vitamins

Nutrient	Infant Formula	Follow-up Formula
Vitamin A	all-trans-retinol and 13-cis-retinol Any contents of carotenoids should not be included in the calculation and declaration of vitamin A activity. Conversion factor: 1 μg RE = 1 μg all-trans retinol Expressed in μg RE/100kcal or μg RE/100kJ as retinol equivalents (RE)	all-trans-retinol and 13-cis-retinol **Conversion factor:** **1 μg RE = 3.33 IU Vitamin A = 1 μg all-trans retinol** Expressed in I.U./ 100 available kcal or I.U./ 100 available kJ or μg / 100 available kcal or μg / 100 available kJ as retinol

Vitamins

Nutrient	Infant Formula	Follow-up Formula
Vitamin D	**Vitamin D3** (Cholecalciferol) Conversion factor: 1 μg calciferol = 40 IU vitamin D Expressed in µg/100kcal or µg/100kJ	**Vitamin D (D2 and D3)** **Conversion factor:** **1 μg calciferol = 40 IU vitamin D** Expressed in I.U./ 100 available kcal or I.U./ 100 available kJ or µg / 100 available kcal or µg / 100 available kJ
Vitamin K	**Vitamin K1** Expressed in µg/100kcal or µg/100kJ	**Vitamin K1** Expressed in µg / 100 available kcal or µg / 100 available kJ

Vitamins

Nutrient	Infant Formula	Follow-up Formula
Vitamin E	Alpha-tocopherol equivalent (α-TE) 1 mg α-TE = 1 mg d-α-tocopherol **Vitamin E content ≥ 0.5 mg α -TE per g PUFA** **using the following factors of equivalence to adapt the minimal vitamin E content to the number of fatty acid double bonds in the formula: 0.5 mg α -TE/g linoleic acid (18:2 n-6); 0.75 mg α -TE/g α -linolenic acid (18:3 n-3); 1.0 mg α -TE/g arachidonic acid (20:4 n-6); 1.25 mg α -TE/g eicosapentaenoic acid (20:5 n-3); 1.5 mg α -TE/g docosahexaenoic acid (22:6 n-3)** Expressed as mg α-TE /100kcal or mg α-TE /100kJ	α-tocopherol compounds **Conversion factors*:** **μg α-TE = 0.67 x I.U. Vitamin E (natural)** **μg α-TE = 0.45 x I.U. Vitamin E (synthetic)** Expressed as I.U./g linoleic acid or I.U./100 available kcal or I.U./100 available kJ

Note: *FAO/INFOODS Guidelines for Converting Units, Denominators and Expressions Version 1.0, FAO, Rome, 2012.

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Vitamins

Nutrient [Expressed in µg/100kcal or µg/100kJ]	**Infant Formula**	**Follow-up Formula**
Vitamin B1	**Thiamin**	**Thiamin**
Vitamin B2	**Riboflavin**	**Riboflavin**
Vitamin B3	**Preformed niacin** (nicotinic acid + nicotinamide)	**Nicotinamide**

Vitamins

Nutrient [Expressed in µg/100kcal or µg/100kJ]	**Infant Formula**	**Follow-up Formula**
Vitamin B6	Pyridoxine, pyridoxal and pyridoxamine	Pyridoxine, pyridoxal and pyridoxamine **Vitamin B6 > 15ug/g protein**
Vitamin B5	**Pantothenic acid**	**Pantothenic acid**
Vitamin B9	**Folic acid**	**Folic acid**

Vitamins

Nutrient [Expressed in µg/100kcal or µg/100kJ]	**Infant Formula**	**Follow-up Formula**
Vitamin B12	Total vitamin B12 as cyanocobalamin	**Vitamin B12**
Vitamin C	Ascorbic acid and dehydroascorbic acid Expressed as ascorbic acid	**Ascorbic acid (Vitamin C)**
Biotin	d-biotin and d-biocytin	**Biotin (Vitamin H)**

Minerals and Trace Elements

- Iron
- Calcium
- Phosphorus
- Magnesium
- Sodium
- Chloride
- Potassium
- Manganese (Infant-Formula Only)
- Iodine
- Selenium (Infant-Formula Only)
- Copper (Infant-Formula Only)
- Zinc

- Expressed in mg/100kcal or mg/100kJ

- **Calcium/Phosphorus Ratio for Infant-Formula and Follow-up Formula Min. (1:1) and Max. (2:1)**

Other Substances (Infant Formula Only)

- Choline
- Myo-Inositol
- L-Carnitine

- [Expressed in mg/100kcal or mg/100kJ]

Processed Cereal-based Foods for Infants and Young Children (CODEX STAN 74-1981)

Nutrients [Expressed in g/100kcal or g/100kJ]	**Processed Cereal-based Foods for Infants and Young Children**
Energy Content	Energy Density (Calories by calculation) Expressed in kJ/g or kcal/g
Protein	Conversion factor: N x 6.25
Carbohydrates	Available carbohydrates [Not specified in **CODEX STAN 74-1981**]

Processed Cereal-based Foods for Infants and Young Children (CODEX STAN 74-1981)

Nutrients [Expressed in g/100kcal or g/100kJ]	**Processed Cereal-based Foods for Infants and Young Children**
Lipids	Lipids ▫ **The amount of linoleic acid (in the form of triglycerides=linoleates) shall not be less than 70 mg/100 kJ (300 mg/100 kcal) and shall not exceed 285 mg/100 kJ (1200 mg/100 kcal)** ▫ **the amount of lauric acid shall not exceed 15% of the total lipid content** ▫ **the amount of myristic acid shall not exceed 15% of the total lipid content**

Processed Cereal-based Foods for Infants and Young Children (CODEX STAN 74-1981)

Nutrients [Expressed in µg/100kcal or µg/100kJ]	**Processed Cereal-based Foods for Infants and Young Children**
Vitamin A	all-trans-retinol and 13-cis-retinol Expressed in µg/100kcal or µg/100kJ as retinol equivalents
Vitamin D	Vitamin D **(D2 and D3)**
Vitamin B1	Vitamin B1 (Thiamin)
Calcium	Calcium
Sodium	Sodium

Thank You