

# CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture  
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## ADVISORY LISTS OF NUTRIENT COMPOUNDS FOR USE IN FOODS FOR SPECIAL DIETARY USES INTENDED FOR INFANTS AND YOUNG CHILDREN

**CXG 10-1979**

**Adopted in 1979. Amended in 1983, 1991, 2009, 2015, 2016, 2023. Revised in 2008, 2010.**

**2023 Amendments**

Following decisions taken at the Forty-sixth Session of the Codex Alimentarius Commission in December 2023, amendments were made in Table B Advisory list of vitamin compounds for use in foods for special dietary uses intended for infants and young children, row 10.2 Calcium-L-methyl-folate.

## 1. PREAMBLE

These lists include nutrient compounds, which may be used for nutritional purposes in foods for special dietary uses intended for infants and young children in accordance with 1) the criteria and conditions of use identified below; and 2) other criteria for their use stipulated in the respective standards. In addition, the sources from which the nutrient compound is produced may exclude the use of specific substances where religious or other specific dietary restrictions apply. As noted in the respective standards, their use may either be essential or optional.

## 2. CRITERIA FOR THE INCLUSION AND DELETION OF NUTRIENT COMPOUNDS FROM THE ADVISORY LISTS

2.1 Nutrient compounds that are to be added for nutritional purposes to foods for infants and young children may be included in the lists only if:

- a) they are shown to be safe and appropriate for the intended use as nutrient sources for infants and young children;
- b) it is demonstrated by appropriate studies in animals and/or humans that the nutrients are biologically available;
- c) the purity requirements of the nutrient compounds conform with the applicable specifications of identity and purity recommended by the Codex Alimentarius Commission, or in the absence of such specifications, with another internationally-recognized specification. If there is no internationally-recognized specification, national purity requirements that have been evaluated according to, or similar to, a FAO/WHO process may be considered;
- d) the stability of nutrient compound(s) in the food(s) in which it is (they are) to be used can be demonstrated; and
- e) the fulfilment of the above criteria shall be demonstrated by generally accepted scientific criteria.

2.2 Nutrient compounds may be added to the lists based on the criteria above. Nutrient compounds shall be deleted from the lists if they are found to no longer meet the above criteria. If a country proposes to add or delete a nutrient compound to/from a list, the country should provide information that addresses how the nutrient compound satisfies/does not satisfy the criteria in Section 2.1.

## 3. OPTIONAL INGREDIENTS

The optional ingredients sections in Codex standards for foods for infants and young children do not identify all optional ingredients that may be considered for use in foods for special dietary uses intended for infants and young children. Optional ingredients added for nutritional purposes to foods for special dietary uses intended for infants and young children should meet the criteria specified in Section 2.1. They should also meet the provisions for optional ingredients in the respective Codex standard for foods for infants and young children.

**A: ADVISORY LIST OF MINERAL SALTS AND TRACE ELEMENTS FOR USE IN FOODS FOR SPECIAL DIETARY USES INTENDED FOR INFANTS AND YOUNG CHILDREN**

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>1. Source of calcium (Ca)</b>								
1.1 Calcium carbonate	√ (1981)	JECFA (1973), Ph Int, FCC, USP, NF, Ph Eur, BP, DAB	√	√	√	√	√	√
1.2 Calcium chloride	√ (1979)	JECFA (1975), FCC, USP, Ph Eur, JP, BP, DAB	√	√	√	√	√	√
1.3 Tricalcium dicitrate (Calcium citrate)	√ (1979)	JECFA (1975), FCC, USP, DAC	√	√	√	√	√	√
1.4 Calcium gluconate	√ (1999)	JECFA (1998), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
1.5 Calcium glycerophosphate		FCC, Ph Eur, Ph Franc	√	√	√	√	√	√
1.6 Calcium L-lactate	√ (1978)	JECFA (1974), FCC, USP, Ph Eur (tri- and penta-hydrate), BP, DAB	√	√	√	√	√	√
1.7 Calcium hydroxide	√ (1979)	JECFA (1975), FCC, USP, Ph Eur, BP	√	√	√	√	√	√

<sup>1</sup> CAC = Codex Alimentarius Commission

<sup>2</sup> IF Sect. A = Section A of the *Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants* (CXS 72-1981)

<sup>3</sup> IF Sect. B = Section B of the *Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants* (CXS 72-1981)

<sup>4</sup> FUF = *Standard for Follow-up Formula and Product for Young Children* (CXS 156-1987)

<sup>5</sup> PCBF = *Standard for Processed Cereal-Based Food for Infants and Young Children* (CXS 74-1981)

<sup>6</sup> CBF = *Standard for Canned Baby Foods* (CXS 73-1981)

<sup>7</sup> FSMP = Food for Special Medical Purposes other than Infant Formula

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
1.8 Calcium oxide	√ (1979)	JECFA (1975), FCC, DAC	-	√	-	√	√	√
1.9 Calcium dihydrogen phosphate (Calcium phosphate, monobasic)	√ (1997)	JECFA (1996), Ph Int, FCC	√	√	√	√	√	√
1.10 Calcium hydrogen phosphate (Calcium phosphate, dibasic)	√ (1979)	JECFA (1975), FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
1.11 Tricalcium diphosphate (Calcium phosphate, tribasic)		JECFA (1973), Ph Int, FCC, BP	√	√	√	√	√	√
1.12 Calcium sulphate	√ (1979)	JECFA (1975), Ph Int, FCC, Ph Eur (dihydrate), DAB	-	√	-	-	-	√
<b>2. Source of iron (Fe)</b>								
2.1 Ferrous carbonate, stabilised with saccharose		DAB	-	√	-	√	√	√
2.2 Ferrous fumarate		Ph Int, FCC, USP, Ph Eur, BP	√	√	√	√	√	√
2.3 Ferrous gluconate	√ (2001)	JECFA (1999), FCC, USP, Ph Eur, DAB, BP	√	√	√	√	√	√
2.4 Ferrous lactate	√ (1991)	JECFA (1989), FCC, NF	√	√	√	√	√	√
2.5 Ferrous sulphate	√ (2001)	JECFA (1999), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
2.6 Ferric ammonium citrate	√ (1987)	JECFA (1984), FCC, DAC	√	√	√	√	√	√
2.7 Ferric citrate		FCC	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
2.8 Ferric diphosphate (pyrophosphate)		FCC	√	√	√	√	√	√
2.9 Hydrogen reduced iron		FCC, DAB	-	√	-	√	√	√
2.10 Electrolytic iron		FCC	-	√	-	√	√	√
2.11 Carbonyl iron		FCC	-	√	-	√	√	√
2.12 Ferric saccharate		Ph Helv, DAB, ÖAB	-	√	-	√	√	√
2.13 Sodium ferric diphosphate		FCC	-	√	-	√	√	√
2.14 Ferrous citrate		FCC	√	√	√	√	√	√
2.15 Ferrous succinate		MP, MI	√	√	√	√	√	√
2.16 Ferrous bisglycinate		JECFA (2003)	√	√	√	√	√	√
2.17 Ferric orthophosphate		FCC	-	-	-	√	-	-
<b>3. Source of magnesium (Mg)</b>								
3.1 Magnesium hydroxide carbonate		JECFA (1979), USP, BP, DAB	√	√	√	√	√	√
3.2 Magnesium chloride	√ (1979)	JECFA (1979), FCC, USP, Ph Eur (-4,5-hydrate), BP, DAB	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
3.3 Magnesium gluconate	√ (2001)	JECFA (1998), FCC, DAC	√	√	√	√	√	√
3.4 Magnesium glycerophosphate		Ph Eur, BPC	-	√	-	√	√	√
3.5 Magnesium hydroxide	√ (1979)	JECFA (1975), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
3.6 Magnesium lactate	√ (1987)	JECFA (1983) (Mg-DL-Lactate, Mg-L-Lactate)	-	√	-	√	√	√
3.7 Magnesium oxide		JECFA (1973), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
3.8 Magnesium hydrogen phosphate (Magnesium phosphate, dibasic)	√ (1985)	JECFA (1982), FCC, DAB	√	√	√	√	√	√
3.9 Trimagnesium phosphate (Magnesium phosphate, tribasic)	√ (1981)	JECFA (1982), FCC	√	√	√	√	√	√
3.10 Magnesium sulphate		Ph Eur (heptahydrate), FCC, USP, JP, BP, DAB, DAC	√	√	√	√	√	√
3.11 Magnesium acetate		Ph Eur, DAC	-	√	-	-	-	√
3.12 Magnesium salts of citric acid		USP, DAC	√	√	√	√	√	√
3.13 Magnesium carbonate		JECFA (1973), FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>4. Source of sodium (Na)</b>								
4.1 Sodium carbonate	√ (1979)	JECFA (1975), FCC, USP, NF, Ph Eur, BP, DAB	√	√	√	-	-	√
4.2 Sodium hydrogen carbonate (Sodium bicarbonate)	√ (1979)	JECFA (1975), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	-	-	√
4.3 Sodium chloride		Ph Int, FCC, USP, Ph Eur, JP, BP, DAB	√	√	√	-	-	√
4.4 Trisodium citrate (Sodium citrate)		JECFA (1975), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	-	-	√
4.5 Sodium gluconate	√ (1999)	JECFA (1998), FCC, USP, DAC	√	√	√	-	-	√
4.6 Sodium L-lactate	√ (1978)	JECFA (1974), FCC, USP, Ph Eur, BP, DAB	√	√	√	-	-	√
4.7 Sodium dihydrogen phosphate (Sodium phosphate, monobasic)	√ (1995)	JECFA (1963), FCC, USP, Ph Eur (dihydrate)	√	√	√	-	-	√
4.8 Disodium hydrogen phosphate (Sodium phosphate, dibasic)		JECFA (1975), Ph Int, FCC, USP, BP	√	√	√	-	-	√
4.9 Trisodium phosphate (Sodium phosphate, tribasic)		JECFA (1975), FCC, DAC	√	√	√	-	-	√
4.10 Sodium hydroxide	√ (1979)	JECFA (1975), Ph Int, FCC, USP, NF, Ph Eur, JP, BP, DAB	√	√	√	-	-	√



Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
4.11 Sodium sulphate		JECFA (2000), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	-	-	√
<b>5. Source of potassium (K)</b>								
5.1 Potassium carbonate	√ (1979)	JECFA (1975), FCC, USP, Ph Eur, DAC	√	√	√	-	-	√
5.2 Potassium hydrogen carbonate (Potassium bicarbonate)	√ (1979)	JECFA (1975), FCC, USP, Ph Eur, BP, DAB	√	√	√	-	-	√
5.3 Potassium chloride	√ (1983)	JECFA (1979), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
5.4 Tripotassium citrate (Potassium citrate)		JECFA (1975), Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
5.5 Potassium gluconate	√ (1999)	JECFA (1998), FCC, USP, DAC	√	√	√	√	√	√
5.6 Potassium glycerophosphate		FCC	-	√	-	√	√	√
5.7 Potassium L-lactate	√ (1978)	JECFA (1974), FCC, DAB	√	√	√	√	√	√
5.8 Potassium dihydrogen phosphate (Potassium phosphate, monobasic)	√ (1979)	JECFA (1982), FCC, NF, Ph Eur, BP, DAB	√	√	√	-	-	√
5.9 Dipotassium hydrogen phosphate (Potassium phosphate, dibasic)	√ (1979)	JECFA (1982), FCC, BP	√	√	√	-	-	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
5.10 Potassium phosphate, tribasic	√ (1979)	JECFA (1982)	√	√	√	-	-	√
5.11 Potassium hydroxide	√ (1979)	JECFA (1975), FCC, NF, Ph Eur, JP, BP, DAC	√	√	√	-	-	√
<b>6. Source of copper (Cu)</b>								
6.1 Cupric gluconate (Copper gluconate)		FCC, USP	√	√	√	√	√	√
6.2 Cupric sulphate (Copper sulphate)	√ (1981)	JECFA (1973), FCC, USP, Ph Eur, DAB	√	√	√	√	√	√
6.3 Cupric carbonate		MI	√	√	√	√	√	√
6.4 Cupric citrate		FCC, USP	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>7. Source of iodine (I)</b>								
7.1 Potassium iodide		Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
7.2 Sodium iodide		Ph Eur, USP, BP, DAB	√	√	√	√	√	√
7.3 Potassium iodate	√ (1991)	JECFA (1988), FCC	√	√	√	√	√	√
7.4 Sodium iodate		FCC	-	√	-	√	√	√
<b>8. Source of zinc (Zn)</b>								
8.1 Zinc acetate		USP, Ph Eur (dihydrate)	√	√	√	√	√	√
8.2 Zinc chloride		USP, Ph Eur, JP, BP, DAB	√	√	√	√	√	√
8.3 Zinc gluconate		FCC, USP, DAC	√	√	√	√	√	√
8.4 Zinc lactate		FCC	√	√	√	√	√	√
8.5 Zinc oxide		Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
8.6 Zinc sulphate		FCC, USP, Ph Eur, BP	√	√	√	√	√	√
8.7 Zinc carbonate		USP, BP (hydroxide carbonate)	-	√	-	-	-	√
8.8 Zinc citrate (zinc citrate dihydrate or zinc citrate trihydrate)		USP	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>9. Source of manganese (Mn)</b>								
9.1 Manganese(II) chloride		FCC	√	√	√	√	√	√
9.2 Manganese(II) citrate		FCC	√	√	√	√	√	√
9.3 Manganese(II) glycerophosphate		FCC	-	√	-	√	√	√
9.4 Manganese(II) sulphate		FCC, USP, Ph Eur (monohydrate)	√	√	√	√	√	√
9.5 Manganese(II) gluconate		FCC	√	√	√	√	√	√
9.6 Manganese(II) carbonate		MI	√	√	√	√	√	√
<b>10. Source of selenium (Se)</b>								
10.1 Sodium selenate		MI	√	√	√	√	-	√
10.2 Sodium selenite		Ph Eur, USP, MP, MI	√	√	√	√	-	√
10.3 Sodium hydrogen selenite		DVFA	-	√	-	-	-	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>11. Chromium (Cr III)</b>								
11.1 Chromium (III) sulphate		USP, MI	-	√	-	-	-	√
11.2 Chromium (III) chloride		USP, MI	-	√	-	-	-	√
<b>12. Molybdenum (Mo VI)</b>								
12.1 Sodium molybdate		Ph Eur (dihydrate), BP, DAB	-	√	-	-	-	√
12.2 Ammonium molybdate		FCC, USP	-	√	-	-	-	√
<b>13. Fluoride (F)</b>								
13.1 Sodium fluoride		FCC, USP, Ph Eur, BP, DAB	-	√	-	-	-	√
13.2 Potassium fluoride		FCC, DAB	-	√	-	-	-	√
13.3 Calcium fluoride		DAB	-	√	-	-	-	√

**B: ADVISORY LIST OF VITAMIN COMPOUNDS FOR USE IN FOODS FOR SPECIAL DIETARY USES INTENDED FOR INFANTS AND YOUNG CHILDREN**

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>1. Vitamin A</b>								
1.1 all trans retinol		FCC (vitamin A), USP, Ph Eur (vitamin A)	√	√	√	√	√	√
1.2 Retinyl acetate		FCC (vitamin A), USP, Ph Eur (vitamin A), Jap Food Stan	√	√	√	√	√	√
1.3 Retinyl palmitate		FCC (vitamin A), USP, Ph Eur (vitamin A), Jap Food Stan	√	√	√	√	√	√
<b>2. Provitamin A</b>								
2.1 Beta-Carotene	√ (1991)	JECFA (1987), FCC, USP, Ph Eur, Jap Food Stan	√	√	√	√	√	√
<b>3. Vitamin D</b>								
3.1 Vitamin D <sub>2</sub> = Ergocalciferol		Ph Int, FCC, USP, Ph Eur, Jap Food Stan, DAB	√	√	√	√	√	√
3.2 Vitamin D <sub>3</sub> = Cholecalciferol		Ph Int, FCC, USP, Jap Food Stan, BP, DAB	√	√	√	√	√	√

<sup>1</sup> CAC = Codex Alimentarius Commission

<sup>2</sup> IF Sect. A = Section A of the Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants

<sup>3</sup> IF Sect. B = Section B of the Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants

<sup>4</sup> FUF = Follow-up formula

<sup>5</sup> PCBF = Processed cereal-based foods for infants and young children

<sup>6</sup> CBF = Canned baby food

<sup>7</sup> FSMP = Food for special medical purposes other than infant formula

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>4. Vitamin E</b>								
4.1 D-alpha-Tocopherol	√ (2001)	JECFA (2000), FCC, USP, NF, Ph Eur	√	√	√	√	√	√
4.2 DL-alpha-Tocopherol	√ (1989)	JECFA (1986), FCC, USP, NF, Ph Eur, Jap Food Stan	√	√	√	√	√	√
4.3 D-alpha-Tocopheryl acetate		FCC, USP, NF, Ph Eur	√	√	√	√	√	√
4.4 DL-alpha-Tocopheryl acetate		FCC, USP, NF, Ph Eur, BP	√	√	√	√	√	√
4.5 D-alpha-Tocopheryl acid succinate		FCC, USP, Ph Eur	-	√	-	-	-	√
4.6 DL-alpha-Tocopheryl acid succinate		NF, MP, MI, USP, Ph Eur	-	√	-	-	-	√
4.7 DL-alpha-Tocopheryl polyethylene glycol 1000 succinate		FCC, USP	-	√	-	-	-	√
<b>5. Vitamin C</b>								
5.1 L-Ascorbic acid	√ (1981)	JECFA (1973), Ph Int, FCC, USP, Ph Eur, JP, Jap Food Stan, BP, DAB	√	√	√	√	√	√
5.2 Calcium-L-ascorbate	√ (1983)	JECFA (1981), FCC, USP, Ph Eur	√	√	√	√	√	√
5.3 6-Palmitoyl-L-ascorbic acid (Ascorbyl palmitate)		JECFA (1973), FCC, USP, NF, Ph Eur, Jap Food Stan, BP, DAB	√	√	√	√	√	√
5.4 Sodium-L-ascorbate		JECFA (1973), FCC, USP, Ph Eur, Ph Franc, Jap Food Stan, DAC	√	√	√	√	√	√
5.5 Potassium-L-ascorbate		FCC	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>6. Vitamin B<sub>1</sub></b>								
6.1 Thiaminchloride hydrochloride		Ph Int, FCC, USP, Ph Eur, Jap Food Stan, DAB	√	√	√	√	√	√
6.2 Thiamin mononitrate		Ph Int, FCC, USP, Ph Eur, Jap Food Stan, DAB	√	√	√	√	√	√
<b>7. Vitamin B<sub>2</sub></b>								
7.1 Riboflavin	√ (1991)	JECFA (1987), Ph Int, FCC, USP, Ph Eur, JP, Jap Food Stan, BP, DAB	√	√	√	√	√	√
7.2 Riboflavin-5'-phosphate sodium	√ (1991)	JECFA (1987), USP, Ph Eur, JP, Jap Food Stan, BP, DAB	√	√	√	√	√	√
<b>8. Niacin</b>								
8.1 Nicotinic acid amide (Nicotinamide)		Ph Int, FCC, USP, Ph Eur, Jap Food Stan, BP, DAB	√	√	√	√	√	√
8.2 Nicotinic acid		Ph Int, FCC, USP, Ph Eur, Jap Food Stan, BP, DAB	√	√	√	√	√	√
<b>9. Vitamin B<sub>6</sub></b>								
9.1 Pyridoxine hydrochloride		Ph Int, FCC, USP, Ph Eur, Jap Food Stan, DAB	√	√	√	√	√	√
9.2 Pyridoxal 5-phosphate		MI, FCC, USP	√	√	√	√	√	√
<b>10. Folic acid</b>								
10.1 N-Pteroyl-L-glutamic acid		Ph Int, FCC, USP, Ph Eur, Jap Food Stan	√	√	√	√	√	√
10.2 Calcium-L-methyl-folate		JECFA (2005), USP	√	√	√	√	√	√



Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>11. Pantothenic acid</b>								
11.1 Calcium-D-pantothenate		FCC, USP, Ph Eur, Jap Food Stan, DAB	√	√	√	√	√	√
11.2 Sodium-D-pantothenate		Jap Food Stan, DAB	√	√	√	√	√	√
11.3 D-Panthenol/		FCC, USP, Ph Eur	√	√	√	√	√	√
11.4 DL-Panthenol		FCC, USP, Ph Eur	√	√	√	√	√	√
<b>12. Vitamin B<sub>12</sub></b>								
12.1 Cyanocobalamin		Ph Int, FCC, USP, Ph Eur, BP, DAB	√	√	√	√	√	√
12.2 Hydroxo-cobalamin		Ph Int, USP, NF, Ph Eur (hydro-chloride)	√	√	√	√	√	√
<b>13. Vitamin K<sub>1</sub></b>								
13.1 Phytomenadione (2-Methyl-3-phytyl-1,4-naphthoquinone/Phylloquinone/Phytonadione)		Ph Int, FCC (vitamin K), USP, Ph Eur, BP	√	√	√	√	√	√
<b>14. Biotin</b>								
14.1 D-Biotin		FCC, USP, Ph Eur	√	√	√	√	√	√

**C: ADVISORY LIST OF AMINO ACIDS AND OTHER NUTRIENTS FOR USE IN FOODS FOR SPECIAL DIETARY USES INTENDED FOR INFANTS AND YOUNG CHILDREN**

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>1. Amino acids<sup>8</sup></b>								
1.1 L-Arginine		FCC, USP, Ph Eur, BP, DAB	only for improving the nutritional quality of the protein (when the protein is nutritionally inadequate for its intended use)	√	only for improving the nutritional quality of the protein (when the protein is nutritionally inadequate for its intended use)			√
1.2 L-Arginine hydrochloride		FCC, USP, Ph Eur, BP, DAB		√			√	
1.3 L-Cystine		FCC, USP, Ph Eur		√			√	
1.4 L-Cystine dihydrochloride		MI		√			√	
1.5 L-Cysteine		DAB		√			√	
1.6 L-Cysteine hydrochloride		FCC, Ph Eur		√			√	
1.7 L- Histidine		FCC, USP, Ph Eur, DAB		√			√	
1.8 L- Histidine hydrochloride		FCC, Ph Eur, DAB		√			√	
1.9 L-Isoleucine		FCC, USP, Ph Eur, DAB		√			√	
1.10 L-Isoleucine hydrochloride		FCC, USP		√			√	
1.11 L-Leucine		FCC, USP, Ph Eur, DAB		√			√	
1.12 L-Leucine hydrochloride		MI, FCC, USP		√			√	

<sup>1</sup> CAC = Codex Alimentarius Commission

<sup>2</sup> IF Sect. A = Section A of the Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants

<sup>3</sup> IF Sect. B = Section B of the Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants

<sup>4</sup> FUF = Follow-up formula

<sup>5</sup> PCBF = Processed cereal-based foods for infants and young children

<sup>6</sup> CBF = Canned baby food

<sup>7</sup> FSMP = Food for special medical purposes other than infant formula

<sup>8</sup> As far as applicable, also the free, hydrated and anhydrous forms of amino acids, and the hydrochloride, sodium, and potassium salts of amino acids may be used for FSMP.

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children						
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children	
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>					
1.13 L-Lysine		USP	only for improving the nutritional quality of the protein (when the protein is nutritionally inadequate for its intended use)	√	only for improving the nutritional quality of the protein (when the protein is nutritionally inadequate for its intended use)				√
1.14 L-Lysine monohydrochloride		FCC, USP, Ph Eur, DAB		√					√
1.15 L-Methionine		Ph Int, FCC, USP, Ph Eur, DAB		√					√
1.16 L-Phenylalanine		FCC, USP, Ph Eur		√					√
1.17 L-Threonine		FCC, USP, Ph Eur, DAB		√					√
1.18 L-Tryptophan		FCC, USP, Ph Eur, DAB		√					√
1.19 L-Tyrosine		FCC, USP, Ph Eur, DAB		√					√
1.20 L-Valine		FCC, USP, Ph Eur, DAB		√					√
1.21 L-Alanine		FCC, USP, Ph Eur, DAB	-	√	-	-	-	√	
1.22 L-Arginine-L-aspartate		Ph Eur	-	√	-	-	-	√	
1.23 L-Aspartic acid		FCC, USP, Ph Eur	-	√	-	-	-	√	
1.24 L-Citrulline		USP, DAC	-	√	-	-	-	√	
1.25 L- Glutamic acid		JECFA (1987), FCC, USP, Ph Eur	-	√	-	-	-	√	
1.26 L-Glutamine		FCC, USP, DAB	-	√	-	-	-	√	
1.27 Glycine		FCC, USP, Ph Eur	-	√	-	-	-	√	
1.28 L-Ornithine		MI, FCC	-	√	-	-	-	√	

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
1.29 L-Ornithine monohydrochloride		DAB	-	√	-	-	-	√
1.30 L-Proline		FCC, USP, Ph Eur, DAB	-	√	-	-	-	√
1.31 L-Serine		USP, Ph Eur, DAB	-	√	-	-	-	√
1.32 N-Acetyl-L-cysteine		USP, Ph Eur, DAB	-	√	-	-	-	√
1.33 N-Acetyl-L-methionine		FCC	-	-	-	-	-	√ not for infants
1.34 L-Lysine acetate		FCC, USP, MP; Ph Eur	-	√	-	-	-	√
1.35 L-Lysine L-Aspartate		Jap Food Stan	-	√	-	-	-	√
1.36 L-Lysine L-glutamate dihydrate		Jap Food Stan	-	√	-	-	-	√
1.37 Magnesium L-aspartate		Ph Eur	-	√	-	-	-	√
1.38 Calcium L-glutamate	√ 1991	JECFA, FCC, Jap Food Stan	-	√	-	-	-	√
1.39 Potassium L-glutamate		JECFA, FCC, Jap Food Stan	-	√	-	-	-	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>2. Carnitine</b>								
2.1 L-Carnitine		FCC, USP, Ph Eur	√	√	√	√	√	√
2.2 L-Carnitine hydrochloride		FCC	√	√	√	√	√	√
2.3 L-Carnitine tartrate		FCC, Ph Eur	√	√	√	-	-	√
<b>3. Taurine</b>								
3.1 Taurine		USP, JP	√	√	√	-	-	√
<b>4. Choline</b>								
4.1 Choline		FCC, USP	√	√	√	√	√	√
4.2 Choline chloride		FCC, DAC, DAB	√	√	√	√	√	√
4.3 Choline citrate		NF	√	√	√	√	√	√
4.4 Choline hydrogen tartrate		DAB	√	√	√	√	√	√
4.5 Choline bitartrate		FCC, NF, DAB	√	√	√	√	√	√
<b>5. Inositols</b>								
5.1 Myo-Inositol (=meso-Inositol)		FCC, DAC	√	√	√	√	√	√

Nutrient source	Purity requirements by		Use in Codex food standards applicable to infants and young children					
	CAC <sup>1</sup>	International and/or national bodies	IF		FUF <sup>4</sup>	PCBF <sup>5</sup>	CBF <sup>6</sup>	FSMP <sup>7</sup> for infants and young children
			Sec. A <sup>2</sup>	Sec. B <sup>3</sup>				
<b>6. Nucleotides</b>								
6.1 Adenosine 5-mono-phosphate (AMP)		FSANZ	√	√	√	-	-	√
6.2 Cytidine 5-mono-phosphate (CMP)		FSANZ, Jap Food Stan	√	√	√	-	-	√
6.3 Guanosine 5-mono-phosphate (GMP)		JECFA (1985)	√	√	√	-	-	√
6.4 Inosine 5-monophosphate (IMP)		JECFA (1974)	√	√	√	-	-	√
6.5 Disodium Uridine 5-monophosphate salt		FSANZ, Jap Food Stan	√	√	√	-	-	√
6.6 Disodium Guanosine 5-monophosphate salt		FCC, JECFA, FSANZ, Jap Food Stan	√	√	√	-	-	√
6.7 Disodium Inosine 5-monophosphate salt		FCC, JECFA, FSANZ, Jap Food Stan	√	√	√	-	-	√

**D: ADVISORY LIST OF FOOD ADDITIVES FOR SPECIAL NUTRIENT FORMS**

For reasons of stability and safe handling, some vitamins and other nutrients have to be converted into suitable preparations, e.g. gum arabic coated products, dry rubbed preparations. For this purpose, the food additives included in the respective specific Codex standard may be used. In addition, the following food additives may be used as nutrient carriers:

<b>INS N.</b>	<b>Additive/Carrier</b>	<b>Maximum level in ready-to-use food for infants and young children (mg/kg)</b>
414	Gum arabic (gum acacia)	10
551	Silicon dioxide	10
421	Mannitol (for vitamin <sub>B12</sub> dry rubbing, 0,1% only)	10
1450	Starch sodium octenyl succinate	100
301	Sodium L-ascorbate (in coating of nutrient preparations containing <u>polyunsaturated fatty acids</u> )	75

**Abbreviations:**

BP	=	British Pharmacopoeia
BPC	=	British Pharmaceutical Codex
DAB	=	Deutsches Arzneibuch
DAC	=	Deutscher Arzneimittel-Codex
DVFA	=	Danish Veterinary and Food Administration
FCC	=	Food Chemicals Codex
FSANZ	=	Food Standards Australia New Zealand
FU	=	Farmacopoea Ufficiale della Repubblica Italiana
JP	=	The Pharmacopoeia of Japan
Jap Food Stan	=	Japanese Food Standard
MI	=	Merck Index
MP	=	Martindale Pharmacopoeia
ÖAB	=	Österreichisches Arzneibuch
Ph Eur	=	Pharmacopoeia Europaea
Ph Franç	=	Pharmacopée Française
Ph Helv	=	Pharmacopoeia Helvetica
Ph Int	=	International Pharmacopoeia
USP	=	The United States Pharmacopoeia