

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD
HEALTH
ORGANIZATION



JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

Agenda Item 3 (c)

CX/MMP 02/5
January 2002

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON MILK AND MILK PRODUCTS

Fifth Session

Wellington, New Zealand, 8-12 April 2002

PROPOSED DRAFT REVISED STANDARD FOR WHEY POWDERS

Including Comments at Step 6 Submitted in Response to CL 2000/15-GEN and IDF Report

(Prepared by International Dairy Federation)

Governments and interested international organisations are invited to comment on the attached proposed draft standard for whey powders. Comments should be sent to:

Ms Laurie Knight
Codex Committee on Milk and Milk Products
MAF Policy, Ministry of Agriculture and Forestry
PO Box 2526
Wellington, New Zealand
Fax: +64 4 4744265
E-mail: knightl@maf.govt.nz

with a copy to the Secretary, Codex Alimentarius Commission, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy, **not later than 1 March 2002.**

INTRODUCTION

Following the 4th Session of the CCMMP (February/ March 2000) the Codex Secretariat requested the IDF to redraft the Draft Standard for Whey Powders taking into consideration the discussions during, written comments submitted to, and oral comments made at the Session, and comments submitted at Step 6 after the adoption by the Executive Committee, with a view to the consideration of a revised text at the next Session (par. 97 of Alinorm 01/11).

This report considers the comments made at the various steps as described above and provides recommendations for consideration at the 5th Session of the CCMMP. The recommendations have been implemented in footnotes to the Draft Standard as was published in Annex VIII to ALINORM 01/11, and the redraft is annexed to this report.

The following principles have been applied:

1. The review has been done in light of written comments submitted to the 4th Session¹, oral comments made at and conclusion of the 4th Session², and written comments submitted at Step 6³
2. Each written comment submitted has been examined individually.
3. The general approach used has been that a Government comment is accepted unless proper technological, scientific, editorial or similar arguments make it advisable not to follow it or to amend it or the CCMMP or another Codex body has not already decided on the matter.
4. Where Governments have expressed different views, possible solutions are provided with the aim of facilitating a decision. They take into account technical justification and/or existing commercial trading practices.
5. Texts put in square brackets by the 4th CCMMP have been retained. However, these texts have been considered in light of the comments made (cf. indent 1 above) and recommendations for confirmation, deletion or amendments thereto are provided. In the redrafted standard (Annex to this report) these recommendations are presented as notes to the currently bracketed text.

Abbreviations used in this document:

GSUDT: Draft General Standard for the Use of Dairy Terms (CODEX STAN 206-1999).

GSLPF: General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991).

¹ CX/MMP 00/13, Adds 1,2 and 3 and CRD 8 tabled at the 4th Session of the CCMMP.

² ALINORM 01/11, paras 87-97

³ Comments to CL 2000/15-GEN by Argentina, France, Thailand and United States

REVIEW OF COMMENTS

GENERAL ASPECTS

Comments submitted:

Denmark supported the editorially revised draft and recommended the use of the accelerated adoption procedure.

Discussion:

Notice of this comment is provided for informational purposes only, no further action is required.

1. SCOPE

Comments submitted:

IDF proposed to consider whether the standard should apply to “for direct consumption”.

Discussion:

A restriction to only one application is not desirable or logical since whey powders “for direct consumption” are available at retail sale for household or domestic use. As such, it is necessary to include such products within the standard.

Recommendation No. 1:

Maintain “for direct consumption”

2. DESCRIPTION

Comments submitted:

Argentina suggested that the description of the product should be expanded, and liquid whey from the filtering process through the membranes (ultra filtration, reverse osmosis, etc.) should be added, as these products are gaining in importance every time given the technological advancement of the plants, and requested to add to the product description:

Butter whey is the liquid product obtained by separation from the batter of the cream used in the manufacture of butter.

France proposed two modifications in the description for acid whey:

“.....**liquid** milk product...” and

“.....with acids **and/or lactic cultures.....**”; the latter can also be “.....**by acidification**”.

and to add a description for “sweet whey (powder)” or “mild whey powder”.

Spain and **Uruguay** marked the expression “del requeson” in the Spanish version of the definition of whey in “de la cuajada”.

Spain proposed also the adaptation of the description for acid whey:

“Acid whey is the liquid dairy product obtained when making cheese, casein or similar products from the separation of the curd, after the coagulation of milk and/or milk-based products. The coagulation is obtained mainly with acids”.

IDF recommended that the description of **Acid Whey** is editorially aligned with the description of **Whey**, that is, amended into the following (insertions underlined):

“**Acid Whey** is the fluid milk product obtained during the manufacture of cheese, casein or similar products by separation from the curd after coagulation of milk and/or products obtained from milk. Coagulation is obtained, principally, with acids.”

Debate at the 4th CCMP:

The Committee agreed to insert the terms “fluid” and “during the manufacture of cheese, casein or similar products” in the definition of acid whey. The Committee further agreed to indicate that coagulation of acid whey was principally obtained “by acidification” instead of “with acids”.

Discussion:

- Re: expansion of the description:
Since the application of filtering process through membranes is already covered by the description “products obtained from milk” an expansion of the description has no additional value.
- Re: butter whey:
The main characteristic of whey is that it is a fluid which remains after the separation from the curd following the coagulation of milk or a milk product. If the batter of cream is similar to a curd, then butter whey is already covered by the definition of whey and an additional definition is not necessary. On the other hand, if the batter is not a curd, the butter whey is not covered by those definitions and does not meet the characteristic requirements for whey.
- Re: Sweet whey (powder):
See remarks under 7 LABELLING
- Re: Correction of the Spanish text:
to be made for purposes of clarity

Recommendation No. 2:

Maintain the descriptions in Alinorm 01/11 APPENDIX VIII (i.e., conform to the decision of 4th CCMMP) and correct the Spanish text.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**Comments submitted regarding 3.3 composition:**

IDF suggested further consideration toward whether the standard should address composition.

Several comments were made regarding the compositional requirements, (viz. **Argentina** (AR), **France** (FR), **Germany** (GE), **Greece** (GR), **IDF**, **Japan** (JA), **Spain** (SP), **Uruguay** (UR) and **USA** (US) at 4th CCMMP and **Argentina**, **France**, **Thailand** (TH) and **USA** in answering the CL 2000/15-GEN), and can be summarized as following:

Whey powder requirements:

	proposal CX/MMP 00/13:	comments of:						
		AR	FR	GR	JA	TH	UR	US
Minimum lactose	61.0		61					
Minimum milk protein	11.0	10	10	5**	9	11		11
Maximum milkfat	2.0	2*	2		7	2	5.5***	2
Maximum water	5.0		5					
Maximum ash	9.5		9.5					
pH (in 10% solution)	>5.1		> 5.1, <6					

* proposed as a minimum: error?

** in order to include whey from goats milk cheese

*** To accommodate for whey that has not been skimmed. Certain cheese types can result in fat levels even higher.

Acid whey powder requirements:

	proposal CX/MMP 00/13	comments of:					
		FR	GE	GR	JA	TH	US
Minimum lactose	61.0	61					
Minimum milk protein	10.0	10*	6**		7	7	7
Maximum milk fat	2.0	2					
Maximum water	4.5	5					
Maximum ash	15.0	15		18		12	15
pH (in 10% solution)	<=5.1	<=5.1					

* but lower values occur

** Proposed to accommodate acid whey powder resulting from the manufacture of quark. Germany desires for this product to be marketed as acid whey powder.

Sweet whey powder requirements:

	proposal* CX/MMP 00/13	comments of		
		FR**	IDF	SP
Minimum lactose	-	61		
Minimum milk protein	-	11		
Maximum milk fat	-	2		
Maximum water	-	5		
Maximum ash	-	9		
pH (in 10% solution)	-	=>6	=>6***	=>6.2

* no proposal was made

** This product is not new, because “mild whey” was already defined in the old Codex Standard on Whey Powders.

*** or a titratable acidity of max 0.16% (as lactic acid)

The **U.S.** recommended deleting lactose from the last sentence of the last paragraph. The sentence be written as follows:

“However, compositional modifications beyond the minima or maxima specified above for milk protein, milk fat and water are not considered to be in compliance with the Section 4.3.3”.

Debate at 4th CCMMP:

Varied proposals were made regarding the minimum milk protein levels for whey powder and acid whey powder ranging from 9-11% and 6-10%, respectively. The Committee **decided** to place in square brackets for further consideration a minimum milk protein level of 11.0% for whey powder and a minimum level of 7.0% for acid whey powder. The Committee further **decided** to place in square brackets a new maximum milkfat level of 7% and the current level of 2.0% for whey powder, and a new maximum ash level of 18.0% and the current level of 15.0% for acid whey powder.

Discussion:

- Re: Comment from IDF:

In view of the usual format for Codex standards, the present information should be maintained since the chemical and physical parameters are useful for the separate distinction of the several standardized products.

- Re: Compositional requirements

Specific compositional requirements continue to be the focus of much discussion due to the wide variety of compositional values found in different markets. In an effort to encompass the most

typical composition for whey powders and acid whey powders (produced using the most typical technological processes) the following compositional requirements are proposed:

	<u>A</u> Whey powder	<u>B</u> Acid whey powder
Minimum lactose	61.0 % m/m	61.0 % m/m
Minimum milk protein	10.0 % m/m	7.0 % m/m
Maximum milk fat	2.0 % m/m	2.0 % m/m
Maximum water	5.0 % m/m	4.5 % m/m
Maximum ash	9.5 % m/m	15.0 % m/m
pH (in 10% solution)	>5.1	<=5.1

The requirements (figures) for lactose, milk protein and pH are necessary to characterize the product. The other requirements have additional value (for quality, shelf life, and reasons related to Good Manufacturing Practices (GMP)):

A minimum milk protein content of 10 % for whey powder (instead of 11 %) is reflects the present market situation. Due to technological developments, the protein retention in cheeses and specific casein products has been improved. Furthermore, a 10 % level corresponds more closely with the existing legal requirements in many locations than does 11 %;

A minimum milk protein content of 7 % for acid whey powder corresponds to the technological development in the production of quarg by which more protein is retained in the quarg and less in the acid whey;

A minimum lactose content of 61 % represents a currently utilized and acceptable lowest limit value found in many markets

- Re: Sweet whey powder: see: part 7 LABELLING
- Re: Minimum 6% protein in acid whey powder instead of min.7%:
Protein is one of the valuable characterizing constituents of whey powders and acid whey powders and the technological issue of protein retention in the coagulated product (cheese curd, etc.) is an on-going development. Whereas the CCMMP has already accepted 7% as minimum, this value should be maintained.
- Re: Maximum 18% ash in acid whey:
A max.15% ash in acid whey powder seems to be a natural and predominant value and should therefore be maintained.
- Re: The deletion of lactose in the last sentence of the last paragraph
This issue was not addressed by the 4th CCMMP. Maintaining a reference to “lactose” in this sentence prevents a widely-used designation “lactose reduced whey powder” from commercial usage. It is, therefore, preferable to delete the reference to “lactose” in the last sentence .of Section 3.3.

Recommendation No. 3:

- Maintain the “composition” requirements
- Adopt compositional requirements for whey powder and acid whey powder as under the above A and B
- Sweet whey powder: see part 7 LABELLING
- Delete the reference to “lactose” in the last sentence under 3.3.

4. FOOD ADDITIVES

Comments submitted regarding the allowance of additives:

Canada requested the following bleaching agents be permitted in these products as follows

928- Benzoyl peroxide and calcium phosphate tribasic, as a carrier of the benzoyl peroxide, for liquid whey destined for dried whey products, other than for infant formula 100 ppm.

--- Hydrogen peroxide-100 ppm.

France, Spain and IDF recommended that the following **acidity regulators** be included with a maximum level of 10 g/kg, singly or in combination, expressed as P₂O₅.

INS 339	Sodium phosphates
INS 340	Potassium phosphates
INS 450	Diphosphates
INS 451	Triphosphates
INS 452	Polyphosphates

These additives are technologically justified, since acid regulation of the whey adds to the heat stability during the drying process. These additives have been endorsed by the CCFAC for use in milk powders and cream powder (CODEX STAN 207-1999).

U.S. proposed the addition of the following acidity regulators:

INS 452I	Sodium Polyphosphate	GMP
INS 524	Sodium Hydroxide	GMP
INS 525	Potassium Hydroxide	GMP
INS 526	Calcium Hydroxide	GMP

and the addition of the following bleaching agent:

INS 928	Benzoyl Peroxide	GMP
---------	------------------	-----

The Codex Alimentarius Commission has adopted the proposed draft levels for use in whey powder at Step 5. The Codex Committee on Food Additives and Contaminants will consider this additive at Step 6.

U.S. supported the horizontal approach in the development of milk and milk product standards whenever possible. This includes being consistent with the International Numbering System list maintained by the Codex Committee on Food Additives and Contaminants (CCFAC) and the Codex Committee on Food Labelling (CCFL). The U.S. noted that there are inconsistencies between the intended functional effects for some additives under consideration in this standard and the functional effects listed in the International Numbering System.

Debate at 4th CCMMMP:

The Committee **decided** to include phosphates (INS 339, 340, 450, 451, 452) at a maximum level of 10 g/kg for the phosphate group under the Stabilizer section.

The Committee **agreed** to include sodium polyphosphates (INS 452I), sodium hydroxide (INS 524), potassium hydroxide (INS 525) and calcium hydroxide (INS 526) at a maximum level "limited by GMP" as acidity regulators. It was noted that numerical maximum levels needed to be established for sodium polyphosphate as a numerical ADI was allocated for the substance.

As the bleaching agent benzoyl peroxide (INS 928) had only been evaluated as a flour treatment agent by JECFA, the Committee **agreed** to include the compound in square brackets pending its evaluation by JECFA.

Discussion:

- Re: Acidity regulators INS 339, 340, 450, 451, 452

It is continually recognized that more than one technological function can be ascribed to an individual food additive; For example, phosphates can be considered as both acidity regulators and stabilizers. Consequently, the mentioned additives have been classified as acidity regulators in "Summary of Evaluations, performed by the joint FAO/WHO Expert Committee on Food Additives (JECFA); part II. ILSI press 1999.

- Re: Bleaching agents INS 928 and hydrogen peroxide:
Decision to include or exclude should be taken pending evaluation by JECFA (if requested).
- Re: INS 452 is proposed as an allowed stabilizer, INS 452i as an allowed acidity regulator;
Consideration should be given to one listing; the U.S. comment refers to the inconsistency.

Recommendation No. 4

- Classify the referenced phosphates as acidity regulators, and delete INS No 452i.
- Bleaching agents: retain between square brackets; to be evaluated by JECFA, as appropriate
- Comment of the U.S. re the application of INS: best addressed through consideration by CCFAC

Comments submitted regarding carry over of food additives used in cheese production:

Canada noted that maintaining the wording in the current standard may be the easiest way to address the issue of carry-over. This basically states that food additives carried over as a result of their permitted use in the manufacture of cheese, edible casein and similar products is permitted.

IDF considered it relevant that the content of nitrate carried over from cheese manufacture is minimized in whey powders intended for use in infant foods.

It is noted, however that the Proposed Draft Standard for Infant Formula (Appendix V to ALINORM 99/26) states that no food additives shall be present as a result of carry-over from raw materials and other ingredients with the exception of the thickening agents, emulsifiers, pH-adjusting agents and antioxidants listed in that Standard and carrier substances for vitamins.

It is also noted, however, that vegetables and drinking water constitute the main sources of nitrates intakes, while nitrates added as food additives are relatively small contributors.

Debate at 4th CCMMP:

None reported

Recommendation No. 5

No action is required by the CCMMP. There is no need to further consider limits for colours or nitrates in relation to the commodity standard for whey powders.

Should the CCMMP be of another view, it is noted that the text of CODEX STAN A15-1999, Appendix 1, indent 1 could be retained, however, related to the intended use of the whey powder, e.g. as follows:

“Additives carried over as a result of their permitted use in the manufacture of cheese, edible casein and similar products may be present in amounts appropriate to the intended use of the whey powder”.

5. CONTAMINANTS**Comments submitted:**

U.S. recommended that the Codex Committee on Food Additives and Contaminants examine the 1 mg/kg maximum lead level provided in this standard within the context of the 53rd JECFA risk assessment on lead.

Debate at 4th CCMMP:

In view of the recent JECFA re-evaluation of lead (53rd Meeting), the Committee **agreed** to request the CCFAC to examine the maximum level for lead in the context of the Codex General Standard for Contaminants and Toxins in Foods, as it was of the opinion that the maximum level of 1 mg/kg was too high, especially for infants and children.

In response to a request to establish maximum levels for arsenic, cadmium, copper, mercury, nitrites and zinc, it was suggested that proposals for the establishment of levels for these contaminants should be directed to the CCFAC in the context of the Codex General Standard for Contaminants and Toxins in Foods. However, it was noted that levels for copper and zinc were generally established as quality factors in Codex standards.

Discussion:

A requirement for heavy metals should be the subject of a more horizontal approach as specified by CCFAC. Unless consideration of lead as a specific contaminant of whey powders merits further evaluation, it is proposed to delete the requirement here.

Recommendation No 6

Delete the lead requirement here.

6. HYGIENE

Comments submitted:

Argentina suggested to word Paragraph 6.2 as follows:

“The products considered in this standard, from the production of basic materials to the point of consumption, should be subjected to a combination of control measures, that can include, for instance, pasteurisation, should be pasteurised before or during the production process of said products.

Debate at 4th CCMP:

None reported.

Discussion:

It is unclear as to whether the new text serves to improve Section 6 from the existing text. In addition, it is recommended that text contained in Section 6 be consistent with Section 6 language contained in all recently completed milk and milk products standards.

Recommendation No 7

Maintain the existing text

7. LABELLING

Comments submitted:

Spain proposed to add the following sentence in Section 7.1- Name of the Food

“The term “sweet” can accompany the name whey powder, provided that the pH of the powder exceeds 6.2” .

France also submitted a proposal for including a provision for “sweet” or “mild” whey powder in this standard (see also under 2 DESCRIPTION and 3 ESSENTIAL COMPOSITION AND QUALITY FACTORS above) with a minimum protein-requirement of 11%, a maximum ash requirement of 9 % and a minimum pH value of 6.

IDF recommended the insertion of the following information addressing the optional and conditional use of the qualifier “sweet” in the naming of whey powder. The term is commonly used in trade and refers to certain whey powders derived from enzymatically coagulated cheeses.

Additional Qualifier:

The term “sweet” may accompany the name of whey powder, provided that as appropriate to the local market, either the pH of the powder is equal to or higher than 6.0 (in 10% solution) or the titratable acidity of the powder does not exceed 0.16% (calculated as lactic acid).

Debate at 4th CCMP:

On the proposal to include the use of the term “sweet” for the denomination of whey powder with the pH above 6.2, it was pointed out that there was a need to define the term “sweet”. Therefore, the Committee **decided** not to make a reference to the term “sweet” at this time.

The delegation of Greece requested that the name of the product should accompany the manufacturing method, such as spray dried or roller dried.

Discussion:

- Re: The IDF comment pertaining to “sweet” reflects the current situation found in the marketplace and has broad acceptance of the industry and is practised in trade; In order to allow for the use of the term “sweet”, it is possible to specify that such a declaration could be included if a pH > 6 is met, whereas the minimum protein requirement of 11 % and a maximum ash content of 9 % should be additional parameters, characterizing the “sweetness”.
- Re: The qualifiers “spray dried” and “roller dried” have been deleted at 3rd CCMP; they are allowed, but should not be a part of this standard.

Recommendation No 8

- “Sweet whey powder” could be part of the standard by adding a provision in the labelling section or as a reference in the Appendix reflecting its use in commercial practice.
- No action should be taken regarding the labelling of the drying process.

APPENDIX**Comments submitted:**

UK commented that the information in the appendix is superfluous and should be deleted.

Spain proposed that in the Spanish version, the expression “elementos de ayuda al proceso” [auxiliary elements to the process] should be replaced by “coadyuvantes tecnológicos” [technological adjuvants] and the following are to be included in all the versions:

900a Dimethyl polysiloxane

1521 Polyethylene glycol

IDF recommended the insertion of the following **antifoaming agents**, as processing aids:

INS 900a Polydimethylsiloxane

INS 1521 Polyethylene Glycol

These are needed to avoid foaming during the handling of the whey. These substances are washed out of the products again and only present in residual amounts in the final whey powder. Therefore, there is no need to specify a numerical value, despite the fact that numerical ADIs have been allocated to these substances.

Debate at 4th CCMMP:

After some discussions, the Committee decided to retain the Appendix. The Committee noted that generally the maximum levels of copper and iron were regarded as quality factors.

During the discussion on food additives the Committee decided not to include the processing aids polydimethylsiloxane (INS 900a) and polyethylene glycol (INS 1521).

Discussion:

- Re: Necessity of the Appendix The appendix can be retained as directed by the 4th CCMMP
- Re: Antifoaming agents

The decision of the 4th CCMMP was to not include the referenced antifoaming agents in Section 4. It would be inconsistent, therefore, to include in the Appendix without additional consideration by the Committee

Recommendation No 9

- Retain appendix;
- Exclude the mentioned processing aids
- Correct the Spanish version.

PROPOSED DRAFT REVISED STANDARD FOR WHEY POWDERS

As revised by the IDF at Step 6

The ~~Annex~~ Appendix to this Standard contains provisions which are not intended to be applied within the meaning of the acceptance provisions of Section 4.A.(I)(b) of the General Principles of the Codex Alimentarius.

1. SCOPE

This Standard applies to Whey Powder and Acid Whey Powder, intended for direct consumption or further processing, in conformity with the description in Section 2 of this Standard.

2. DESCRIPTION

Whey powders are milk products obtained by drying whey or acid whey.

Whey is the fluid milk product obtained during the manufacture of cheese, casein or similar products by separation from the curd after coagulation of milk and/or of products obtained from milk. Coagulation is obtained through the action of, principally, rennet type enzymes.

Acid whey is the fluid milk product obtained during the manufacture of cheese, casein or similar products by separation from the curd after coagulation of milk and/or of products obtained from milk. Coagulation is obtained, principally, by acidification.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 RAW MATERIALS

Whey or acid whey.

3.2 PERMITTED INGREDIENTS

Seed lactose* in the manufacture of pre-crystallized (non-hygroscopic) whey powder.

* For specification, see relevant Codex Standard.

3.3 COMPOSITION

	Whey powder	Acid whey powder
Minimum lactose ^(a)	61.0 % m/m	61.0 % m/m
Minimum milk protein ^(b)	[11.0] % m/m *	[7.0] % m/m **
Maximum milkfat	[2.0/7.0] % m/m***	2.0 % m/m
Maximum water ^(c)	5.0 % m/m	4.5 % m/m
Maximum ash	9.5 % m/m	[15.0/18.0] % m/m ****
pH (in 10 % solution)	> 5.1	≤ 5.1

(a) Although the products may contain both anhydrous lactose and lactose monohydrate, the lactose content is expressed as anhydrous lactose. 100 parts of lactose monohydrate contain 95 parts of anhydrous lactose.

(b) Protein content is 6.38 multiplied by the total Kjeldahl nitrogen determined.

The water content does not include water of crystallization of the lactose.

* **Recommendation:** establish the minimum milk protein level as 10.0% m/m

** **Recommendation:** establish the minimum milk protein level as 7.0% m/m

*** **Recommendation:** establish the maximum milkfat content as 2.0% m/m

**** **Recommendation:** establish the maximum ash content as 15.0% m/m

In accordance with the provision of section 4.3.3 of the General Standard for the Use of Dairy Terms, whey powders may be modified in composition to meet the desired end-product composition, for instance, neutralization or demineralization. However, compositional modifications beyond the minima or maxima

specified above for ~~lactose~~, milk protein, milkfat and water are not considered to be in compliance with the Section 4.3.3.

4. FOOD ADDITIVES

Only those additives listed below may be used within the limits specified.

<i>INS No.</i>	<i>Name</i>	<i>Maximum level</i>
<i>Stabilizers</i>		
331	Sodium citrates	
332	Potassium citrates	Limited by GMP
500	Sodium carbonates	
501	Potassium carbonates	
339	Sodium phosphates	
340	Potassium phosphates	
450	Diphosphates	10 g/kg singly or in combination, expressed as P ₂ O ₅
451	Triphosphates	
452	Polyphosphates	
<i>Firming agents</i>		
508	Potassium chloride	Limited by GMP
509	Calcium chloride	
<i>Acidity regulators</i>		
339	Sodium phosphates	
340	Potassium phosphates	
450	Diphosphates	10 g/kg singly or in combination, expressed as P ₂ O ₅
451	Triphosphates	
452	Polyphosphates	
452	Sodium polyphosphate	
524	Sodium hydroxide	Limited by GMP
525	Potassium hydroxide	
526	Calcium hydroxide	
<i>Anti-caking agents</i>		
170(i)	Calcium carbonate	
341(iii)	Tricalcium orthophosphate	
343(iii)	Trimagnesium orthophosphate	
460	Cellulose	
504(i)	Magnesium carbonate	
530	Magnesium oxide	10 g/kg singly or in combination
551	Silicon dioxide, amorphous	
552	Calcium silicate	
553	Magnesium silicates	
554	Sodium aluminosilicate	
556	Calcium aluminium silicate	
559	Aluminium silicate	
1442	Hydroxypropyl distarch phosphate	
<i>Bleaching agents</i>		
[928	Benzoyl peroxide - calcium phosphate tribasic, powders for infant foods]* as a carrier for liquid whey destined for dried products other than infant foods]	[100 mg/kg, but not allowed in whey

** Note: Pending evaluation by JECFA*

5. CONTAMINANTS

5.1 HEAVY METALS

The products covered by this Standard shall comply with the maximum limits established by the Codex Alimentarius Commission.

~~In particular, the following maximum limits apply:—~~

Metal	Maximum level
Lead	1mg/kg

5.2 PESTICIDE RESIDUES

The products covered by this Standard shall comply with those maximum residues limits established by the Codex Alimentarius Commission.

6. HYGIENE

6.1 It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate Sections of the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev.3-1997, *Codex Alimentarius*, Vol.1B), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

6.2 From raw material production to the point of consumption, the products covered by this standard should be subject to a combination of control measures, which may include, for example, pasteurization, and these should be shown to achieve the appropriate level of public health protection.

6.3 The products should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997, *Codex Alimentarius*, Vol.1B).

7. LABELLING

In addition to the provisions of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1 - 1985, Rev.1-1991; *Codex Alimentarius*, Volume 1A) and the General Standard for the Use of Dairy Terms (CODEX STAN 206-1999), the following specific provisions apply:

7.1 NAME OF THE FOOD

The name of the food shall be:

Whey Powder	According to the definitions in section 2 and com-
Acid whey powder	positions as specified in Section 3.3.

[The term "sweet" can accompany the name whey powder, provided that the pH of the powder in 10% solution exceeds 6.0 or at a titratable acidity of max 0,16% (calculated as lactic acid), and with a minimum protein content of 11 % and a maximum ash content of 9 %].

7.2 LABELLING OF NON-RETAIL CONTAINERS

Information required in Section 7 of this Standard and Sections 4.1 to 4.8 of the General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1 - 1985, Rev.1-1991; *Codex Alimentarius*, Volume 1A) and, if necessary, storage instructions, shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such mark is clearly identifiable with the accompanying documents.

8. METHODS OF SAMPLING AND ANALYSIS

See *Codex Alimentarius*, Vol. 13.

Information on usual patterns of manufacturing whey powders

This text below is intended for voluntary application by commercial partners and not for application by governments.

1. OTHER QUALITY FACTORS

1.1 Physical appearance

Uniform colour corresponding to that of the whey from which the powder is derived. Free from lumps that does not break up under moderate pressure.

1.2 Flavour and odour

Free from off flavours and odours

2. PROCESSING AIDS

507 Hydrochloric acid

3. HEAVY METALS

The following limits apply:

Metal Maximum limit

Copper 5 mg/kg

Iron 20 mg/kg (50 mg/kg in roller dried powder)

[The term “sweet” can accompany the name whey powder, provided that the pH of the powder in 10% solution exceeds 6.0 or at a titratable acidity of max 0,16% (calculated as lactic acid), and with a minimum protein content of 11 % and a maximum ash content of 9 %]*.

*Note: Optional positioning (alternative to placement in Section 7)

4. ADDITIONAL METHODS OF ANALYSIS

Appropriate methods for the determination of the content of copper and iron are provided in *Codex Alimentarius*, Vol. 13.