codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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ALINORM 78/11

CODEX ALIMENTARIUS COMMISSION
12th Session, 1978

REPORT OF THE THIRD SESSION OF THE CODEX COMMITTEE ON EDIBLE ICES
Stockholm, 11-15 October 1976

INTRODUCTION

1. The Codex Committee on Edible Ices held its Third Session in Stockholm, Sweden from 11 to 15 October 1976 by the courtesy of the Government of Sweden. Dr. Gösta Björkman, Sweden, was in the chair.

2. Dr. Arne Engström, Director General of the Swedish National Food Administration welcomed the participants on behalf of the Swedish authorities.

3. The session was attended by representatives from the following 18 countries:

Australia
Austria
Belgium
Brazil
Canada
Chile
Denmark
Finland
France
Fed. Rep. of Germany-
Ireland
Liberia
Netherlands
Norway
Sweden
Switzerland
United Kingdom
United States of America

Observers were present from the following international organizations:

- Association of Official Analytical Chemists (AOAC)
- Association Mondiale des Industries de Traitement des Algues Marines
- European Economic Community (EEC)
- European Food Emulsifier Manufacturers' Association E.V. (EFEMA)
- Institut Européen des Industries de la Gomme de Caroube
- International Organization of the Flavour Industry (IOFI)
- International Pectin Producers Association (IPPA)
- Organization of Manufacturers of Cellulose Products for Foodstuffs in the EEC (OFCA)
- Union Internationale de la Pâtisserie, Confiserie et Glacerie (UIPCG)

The List of Participants, including officers from FAO and WHO, is contained in Appendix I to this report.

ELECTION OF RAPPORTEUR

4. Mr. R.J. Attwell (United Kingdom) was appointed rapporteur of the session.

ADOPTION OF PROVISIONAL AGENDA

5. The Committee unanimously adopted the Provisional Agenda.

MATTERS ARISING PROM THE ELEVENTH SESSION OF THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES (ALINORM 76/44, paras 362-366)

6. The deliberations of the Commission concerning the Second Session of the Committee were reviewed briefly. It was noted that some concern had been expressed with regard to the extent of the additive list. The Committee agreed to consider this issue when discussing the relevant section. It also agreed to deal with matters arising from sessions of general committees as and when appropriate.

Methods of Analysis and Sampling

7. The Committee was informed that following a meeting of representatives of IDF/ISO and AOAC in conjunction with the 18th Session of the Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products (September 1976) an ad hoc working group consisting of representatives of Australia, Canada, Denmark, France, Federal Republic of Germany, Netherlands, Sweden and AOAC had met during a meeting of IDF Commission E in Quebec City (October 1976) to consider matters of analysis for edible ices.

8. The working group had agreed to circulate before 1 January 1977 draft versions of the following chemical methods of analysis:

(i) Selection of sample
(ii) Preparation of sample
(iii) Determination of weight/unit volume
(iv) Determination of total solids
(v) Determination of fat
(vi) Determination of foreign fat in milk fat
(vii) Determination of total protein
(viii) Determination of phosphatase (see paras 46 and 66)

The group also agreed to circulate proposals for the following microbiological methods:

(i) Mesophilic aerobic bacteria
(ii) Coliform bacteria
(iii) Coagulase positive Staphylococci

9. The Committee noted that the 2nd Joint FAO/WHO Consultation on Microbiological Specifications for Foods would consider not only the microbiological specifications for edible ices but also the general questions of whether such specifications would serve a practical purpose, and would be appropriate in mandatory standards.

10. The Committee decided to request the IDF/ISO/AOAC working group to prepare these chemical methods for inclusion in the standard as well as microbiological methods if such provisions are included in the final standard.

CONSIDERATION OF PROPOSED DRAFT STANDARD FOR EDIBLE ICES

11. The Committee had before it the above mentioned standard (ALINORM 76/11, Appendix II) for discussion at Step 7 of the Procedure in the light of government comments as contained in document CX/EI 76/3 and Conference Room Document 2

and documents dealing specifically with food additives and hygienic and microbiological requirements.

Section 1 - SCOPE

12. During the discussion of the standard the Committee agreed that the standard applied not only to products intended for retail sale but also to products destined for caterers and for further industrial processing. The Committee noted that there were some inconsistencies in the French version of the Scope Section and agreed that the texts should be harmonized.

Section 2 - DESCRIPTION

13. The Committee agreed to replace the term "food preparations" by "products", the French translation of which would be "denrées alimentaires".

14. It was noted that in all cases edible ices and ice mixes would contain sugars or fruit in addition to fat and protein and the Committee agreed to provide for this in the definition by specifying that the product was sweetened. Consequential changes were made in sub-section 3.1. The delegation of the Federal Republic of Germany reserved its position with regard to the use of the term "sweetened".

15. It was agreed to delete the requirements for pasteurisation of the products in the definitions (2.1.1 and 2.1.2) as it was covered in the hygiene section (5.6).

Section 3 - ESSENTIAL COMPOSITION

16. The Committee considered a proposal to change the title of the section to "Essential Composition and Quality Factors". It was noted that no quality factors were presently covered by the standard; no amendment was made.

Edible Ices (3.1)

17. To emphasize that edible ices and ice mixes could not be manufactured from fat and protein only but would include at least one other ingredient it was agreed that "one or more" permitted ingredients (3.4.4-3.4.5) should be used. It was decided to delete the reference to additives in the first four groups.

Ice Mixes (3.2)

18. The Committee noted that the compositional requirements for Ice Mix Base (3.2.4) and Dried Ice Mix Base (3.2.5) applied to mixes for the preparation of ices rather than to ice mixes proper. As the present wording did not accurately define the products but allowed for a too liberal interpretation of "specified necessary ingredients", it was agreed to delete these sub-sections.

Composition - Groups of Edible Ices (3.3)

19. The delegation of Switzerland proposed a slight revision of the table to include a group of ices omitted when the table was developed at the second session. It was pointed out that some countries produced water ices and juice ices to which marginal quantities of milk and/or milk constituents and/or fats and/or proteins (3.4.1 - 3.4.3) had been added and that such products were not covered in the table. After a prolonged discussion during which various options for inclusion of these products in the present product groups were considered, the Committee agreed to the creation of a new product group (5) and to delete sub-groups (old) A.4 and (old) B.3.

20. The Committee agreed that the table was a compromise and that those countries which did not have legislation compatible with the various product (sub) 'groups would

have to specify deviations when accepting the standard. Because some delegations considered that the present alphabetical classification might lead to unjustified interpretation as to quality it was agreed to replace the letters by numerals.

Protein

21. The Committee agreed that the minimum requirements for milk protein in the standard applied to the protein equivalent to that found in whole milk. This qualification was included in the section where appropriate.

Egg Yolk

22. Several delegations pointed out that the regulations of their countries required that if egg was mentioned in the name of the product there should be a minimum of *7%* egg yolk, equivalent to an egg yolk solids content of 3.2-3.5%. The Committee agreed, however, that when egg was mentioned in the name a minimum of egg yolk solids of 1.4% was required.

Fruit Flavoured Products

23. The Committee noted that the quantity of fruit which should be added to the product if fruit was mentioned in the name varied with the flavour characteristics and the acidity of the fruits used. It was pointed out that in some countries fruits had been grouped according to the concentrations necessary to characterise the product.

24. The Committee discussed whether this type of differentiation could be adopted in the standard. It noted, however, that the quantity used in the manufacture of flavoured edible ices varied according to customs and consumer preferences in individual countries and that a generally acceptable classification was not feasible.

25. After a prolonged discussion it was agreed that the amount of fruit to be included should be governed by good manufacturing practice and the requirement set out in sub-section 7.1.2 that the amount should be sufficient to characterise the product. The delegations of Belgium, Denmark, France, Federal Republic of Germany, Netherlands and Switzerland expressed strong reservations to the deletion of quantitative fruit ingredient requirements in cases where the name of the product referred to a fruit. These delegations also held the view that to safeguard the interest of the consumer total solids, fat and protein could be lowered only if a minimum fruit content were to be specified.

26. Other delegations pointed out that in practice the composition of the unflavoured base mix for the various product groups was standardized. The final level of fat and protein was thus controlled by the quantity of flavouring component added, and would not fall below the lower limit. Furthermore the relevant labelling provision (7.1.2) provided a safeguard to the consumer.

Weight by Volume

27. Following a request by the Committee at its last session (ALINORM 76/11 paras 24-25) a considerable number of governments had expressed their views on the requirement for a weight by volume ratio for edible ices.

28. It was pointed out that for any particular product values could vary considerably and that the fat content of the product was an important factor. Several delegations were of the opinion that consumer reaction to excessively low density products would provide sufficient guarantee that good manufacturing practices were followed and that no limits need be set.

29. Some delegations on the other hand thought that the consumer could best be protected if the product was sold on the basis of total solids per volume. One delegation was of the opinion that edible ices sold by weight afforded the best consumer protection.

30. A majority of delegations, however, favoured a figure for weight by volume. The Committee was equally divided on the exact figure to be specified. Whereas some favoured 450 g/l others preferred 500 g/l. It was finally agreed to accept a compromise figure of 475 g/l for all product groups. The delegation of Belgium, supported by the delegations of Australia and Canada, wished it to be noted that in its view a weight per volume ratio of less than 500 g/l devalued the standard.

Compositional Requirements

31. Several delegations suggested additional sub-groups to accommodate products manufactured in their countries and which were not covered by the present classification. The delegations of Australia, Canada and the USA proposed in group 1 (old A) provision for a product containing 36% total solids and 10% milk fat with a weight/ volume ratio greater than 500 g/l. The United Kingdom proposed a new sub-group 1.2 with a minimum milk fat level of 5%. These proposals were not accepted by the Committee.

32. The Committee noted that in product sub-groups 3.1 (old C.I) and 4.1 (old D.I) there was a minimum requirement not only for fat including milk fat but also for a lower limit for milk fat alone. The Committee considered it unnecessary to include a requirement for milk fat and agreed to its deletion. The delegation of Ireland, supported by the delegation of Australia, stated that it wished to retain a minimum limit of *5%* in group 3.1 (old C.I) and 4.1 (old D.I) and expressed strong reservations to the Committee's decision. The delegation of Brazil stated its preference for a minimum milk fat limit of *3%* for these products.

33. The Committee agreed that the highest minimum fat percentage in groups 1-4 (old A-D) should be 8%. It further agreed that in groups 3 (old C) and 4 (old D) the product with the lowest total solids level should contain less than 2.5% protein instead of the previous minimum of 1%. Consequential amendments were made to the flavoured products.

34. The delegation of the Netherlands stated that including figures "less than *x%"* in a listing of minimum percentages was meaningless and thus should not appear in the table. The Committee decided to make no change.

Permitted Ingredients (3.4)

35. The delegation of the Federal Republic of Germany expressed some concern that milk constituents as a permitted ingredient was too general a term.

36. It was proposed to list examples of milk constituents. The Committee agreed, however, that this might restrict technological development and decided that the use of milk derived constituents was permitted (3.4.1). The delegation of the Federal Republic of Germany reserved its position.

37. Some delegations proposed that only hen's eggs should be permitted. The Committee, however, considered it unnecessary to do so. It was agreed that, in addition to pasteurized egg products, those having undergone equivalent heat treatment would also be permitted.

Section 5 - HYGIENE

38. The Committee had before it

(i) Government Comments on Microbiological Standards for Edible Ices on a Proposal by the Netherlands Delegation (CX/EI 76/4 and Add.1, and Conference Room Document 2);

(ii) a compilation of the Microbiological Standards contained in the Government

(iii) Comments prepared by the Swedish Secretariat (CX/EI 76/4 Add.2 - Part I); and

(iv) a proposal by the Swedish Secretariat for a redraft of sub-section 5.5 - Microbiological Standards (CX/EI 76/4 Add. 2 - Part 2).

39. Several proposals were made to redraft sub-section 5.3 dealing with direct or indirect contamination of microbiological origin and other sources of contamination. It was pointed out that the present standard was the first in which an attempt was being made to include microbiological specifications.

40. The present general provision contained standard wording which might be revised by the Committee on Food Hygiene when microbiological specifications had been agreed for inclusion in the standard. The committee further noted that the General Principles of Food Hygiene were being revised and might also influence the general hygienic requirements. No change was made to the provision.

Microbiological Standards (5.5)

41. The Committee considered the microbiological specifications contained in the Secretariat's paper based on a proposal by the Government of Canada using the ICMSF three class sampling plan. It noted that for routine purposes the cost-benefit ratio of these methods might not be favourable but that they were for use as "international referee provisions intended for use in case of disputes" (Procedural Manual of Codex Alimentarius Commission 4th Edition, p. 69).

42. It was pointed out that the First Joint FAO/WHO Expert Consultation on Microbiological Specifications for Foods had considered specifications for egg products and had recommended methods for

(i) total mesophilic aerobic counts;
(ii) coliforms; and
(iii) salmonella

but had not at that time recommended a method for coagulase positive Staphylococci nor considered the application of methods and levels to other products.

43. Several delegations were of the opinion that the tabulation of government comments prepared by the Swedish Secretariat and their proposal for referee methods should be forwarded to the Joint Expert Consultation for consideration when making a recommendation to the 14th Session of the Codex Committee on Food Hygiene.

44. The Committee agreed with this proposition and decided that the tabulation should be appended to the report (Appendix III) and that the proposed referee methods be attached as an annex (Annex A) to the Standard.

45. Following examination by the Codex Committee on Food Hygiene the specifications would be forwarded with that Committee's recommendations to the Codex Alimentarius Commission.

46. Some delegations were of the opinion that specifications for E, coli should be included in the microbiological specifications. The Committee accepted the view that the

phosphatase test as a biochemical analysis and removed it to the section on Methods of Analysis.

47. The Committee noted that a large number of governments had made observations and were generally favourable to the inclusion of microbiological specifications. At the last session of the Committee the delegation of the Netherlands proposed bacteriological standards (ALINORM 76/11, para 59).

48. One delegation pointed out that microbiological requirements for water ices should be more stringent than for the other product groups. It was also pointed out by other delegations that there should be more stringent requirements for ice mixes destined to be sold for further processing than for the finished products. The Committee decided to bring these observations to the attention of the Expert Consultation and the Codex Committee on Food Hygiene.

49. The Committee agreed also to request the Expert Consultation to consider whether a method for coagulase positive Staphylococci could not be elaborated.

Pasteurization Requirements (5.6)

50. The Committee agreed to include a reference to the phosphatase test as a control on effective pasteurization. It was further agreed that pasteurization should not be required for "water ices" (new 6, old E) or products with a pH of 4.6 or less. In the case of mixes the colours, flavours and flavouring substances including permitted ingredients listed in 3.4.7 and 3.4.8 could be excluded from the heat treatment process.

51. The Committee was also reminded of the discussion (ALINORM 76/11, para 63) on the need for further pasteurization when ice mixes were reconstituted with potable water, pasteurized milk, flavouring matter, etc. The Committee agreed to isolate this particular matter in a separate provision (5.6.2).

Section 4 - FOOD ADDITIVES

52. The Committee had before it:

(i) Government Comments on Food Additives in the Standard (CX/EI 76/5 and Conference Room Documents 2 and 3);

(ii) a redraft of the Food Additives Section prepared by the Swedish Secretariat (CX/EI 76/5 - Add.1);

(iii) a proposal by an Ad-Hoc Working Group on the Technological Justification for the Use of Additives (Conference Room Document 4).

53. The Committee considered a report of an Ad-Hoc Working Group set up earlier during the session to provide technological justification for the use of the different classes of food additives listed in the Standard. The Working Group consisted of representatives of Belgium, Sweden, Switzerland, United Kingdom, USA and WHO.

54. The Chairman of the Working Group, Dr. R.W. Weik (USA) presented the findings of the group. He emphasized that the list would invariably contain additives the use of which would not be permitted in all countries. On the other hand the list might not include all permitted additives in a particular country.

55. Referring to the comprehensive list of additives used in the manufacture of edible ices and ice mixes, the Chairman of the Working Group reminded the Committee that these foods were unique among commodities for which Codex standards were

elaborated in that they were completely fabricated products and covered a wide range, differing considerably in basic composition, flavour and texture.

56. The Committee expressed its appreciation and accepted the report of the Working Group (Appendix IV) which required completion by the addition of the relevant additives particular to the classes for which technological justification had been provided. After some discussion on how to select the additives to be submitted to the Codex Committee on Food Additives, it was agreed to list all substances presently contained in the Standard together with such additives as were proposed by governments and which were included in the list of Additives Evaluated for their Safety in Use in Food (First Series - Lists A(l) and A(2) - CAC/FAL 1-1973 and Supp. l) as well as those given similar status subsequently by JECFA.

57. It was agreed that Green S and Chocolate Brown HT, although not covered by Lists A(l) and A(2) would be particularly drawn to the attention of the Committee on Food Additives with the indication that toxicological evaluation of these two colours was currently being carried out in the United Kingdom. It was further agreed that other substances proposed by governments not covered by Lists A(l) and A(2) would also be brought to the attention of the Committee on Food Additives for review and for possible submission for evaluation to JECFA. A list of these additives is to be found in Appendix V.

58. The Committee considered the maximum levels in the final product for the additives listed in the Standard and made some amendments although there were delegations which disagreed with these levels.

59. It was noted that a differentiation of additives on a product group basis was not feasible. It was further noted that the choice of additives and their level of use was given by this Committee for technological reasons and did not take into account toxicological considerations. The delegation of Belgium considered that the insertion of food additives should in all cases be governed by toxicological considerations.

Section 7 - LABELLING Name of the Product (7.1)

60. The Committee agreed that it would be inappropriate to require that in addition to the product description a reference to the product group should be included and amended the provision accordingly. The Committee further agreed to subdivide the provision so as to separate edible ice products and ice mixes. The delegation of Australia was assured that references to polyunsaturated fats used in the manufacture of edible ices could be made.

List of Ingredients (7.2)

61. After some discussion the Committee agreed that as a matter of principle the list of ingredients should be declared on all packs without regard to their size. The delegations of the Federal Republic and Switzerland stated their reservations to this decision. The Committee consequently deleted the footnote to this provision which exempted consumer packs of 75 g/150 ml from compulsory declaration of ingredients, but retained the same footnote for the declaration of net contents. The delegations of Canada and the USA wished the declaration of net contents to appear on all sizes of packages.

62. It was agreed to substitute the reference to sub-section 3.2(b) by 3.2.(a)(ii) of the Recommended International General Standard for the Labelling of Prepackaged Foods (7.2.1).

Directions for Ice Mixes (new 7.6)

63. The Committee agreed to provide for instructions on the label on the preparation of edible ices from ice mixes.

Date Marking

64. The Committee noted that the Codex Committee on Food Labelling was in the process of elaborating Guidelines for the Date Marking of Prepackaged Foods. A number of delegations expressed themselves in favour of declaration of a date of minimum durability. Other delegations indicated their preference for date of manufacture or packing.

65. The Committee decided to refer the final decision to the Codex Committee on Food Labelling when they considered the general question of date marking of quick frozen foods. The delegation of the United Kingdom considered that the only form of date marking required was the star marking system.

Section 8 -METHODS OF ANALYSIS AND SAMPLING

66. As previously discussed the Committee agreed to add determination of phosphates to the list of methods required.

ANNEX A (new Annex B)

67. The Committee agreed to retain the ingredient grouping for labelling purposes and made some textual amendments (see also paras 7-10).

STATUS OF THE STANDARD

68. The Committee agreed to advance the Standard to Step 8 of the Procedure. The revised standard is contained in Appendix II to this Report.

DATE AND PLACE OF NEXT MEETING

69. The Committee agreed that its work was completed and adjourned sine die.

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APPENDIX I

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Figuran en primer lugar los Jefes de las delegaciones; los Suplentes, Asesores y Consultores aparecen por orden alfabético.

ALINORM 78/11
APPENDIX II

DRAFT STANDARD FOR EDIBLE ICES AND ICE MIXES
(Advanced to Step 8)

1. SCOPE

This standard applies to edible ices ready for consumption and to ice nixes in liquid or powder form. It also applies to the edible ice part of foods containing edible ices.

2. DESCRIPTION 2.1 Product Definitions

2.1.1 Edible ices mean the sweetened products obtained either from an emulsion of fat and protein with the addition of other ingredients and substances, or from a mixture of Water, sugars and other ingredients and substances, which have been treated by freezing and are intended for storage, sale and human consumption in the frozen or partially frozen state.

2.1.2 Ice mixes mean the products in liquid or powder form intended for the preparation of edible ices.

3. ESSENTIAL COMPOSITION

3.1 Edible Ices

3.1.1 Group 1 comprises sweetened products manufactured solely from milk fat and milk protein (whole milk equivalent) with one or more ingredients permitted under 3.4.4-3.4.8.

3.1.2 Group 2 comprises sweetened products manufactured from milk fat and any protein not solely milk protein, with one or more ingredients permitted under 3.4.4-3.4.8.

3.1.3 Group 3 comprises sweetened products manufactured from any fat not solely milk fat and from solely milk protein with one or more ingredients permitted under 3.4.4-3.4.8

3.1.4 Group 4 comprises sweetened products manufactured from any fat not solely milk fat and any protein not solely milk protein, with one or more ingredients permitted under 3.4.4-3.4.8.

3.1.5 Group 5 comprises sweetened products manufactured from ingredients permitted under 3.4.4-3.4.8 and additives permitted under 4 with marginal addition of ingredients permitted under 3.4.1-3.4.3.

3.1.6 Group 6 comprises sweetened products manufactured from ingredients permitted under 3.4.4-3.4.8 and additives permitted under 4 except that they contain no fat or protein other than natural components of the ingredients or additives.

3.2 Ice Mixes

3.2.1 Ice mix means the liquid product containing all necessary ingredients in proper amounts so that when frozen the resulting food conforms to one of the definitions under subsections 3.1.1 to 3-1.5.

3.2.2 Concentrated ice, mix means the liquid, concentrated product which after the addition of the prescribed amount of water results in a product which conforms to the definition under subsection 3.2.1.

3.2.3 Dried ice mix means the dry product (moisture content: ≤4%) which after the addition of a prescribed amount of water gives a product conforming to the definition under subsection 3.2.1.

3.3 Composition - Groups of Edible Ices Coating of non-ice character excluded *(%* m/m - minimum unless otherwise indicated)

	Product Group [1]	1			2		3			4			5			6	
	Sub-group	1	2	3	1	2	1	2	3	1	2	3	1	2	3	1	2
	Fat, protein and other requirements / Composition	milk fat milk protein			milk fat milk protein and/or other protein		milk fat and/or other fat milk protein			milk fat and/or other fat Milk protein and/or other protein			marginal milk fat and/or other fat marginal milk protein and/or other protein			no fat no protein other than natural components of the permitted ingredients or additives	
Unflavoured	Total solids	30	28	26	30	26	30	30	20	30	30	20				15	10
Unflavoured	Milk fat	8	2.5	<2.5	8	<2.5											
Unflavoured	Fat including, if present, milk fat						8	5	<5	8	5	<5					
Unflavoured	Milk protein (whole milk equivalent)	2.5	2.5	2.5			2.5	2.5	<2.5								
Unflavoured	Protein including, if present milk protein				2.5	2.5				2.5	2.5	<2.5					
	If egg is declared: Egg yolk solids	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4					
Flavoured	If fruit or any other bulky flavouring substance is mentioned in the name of the product the amount should be in accordance with GMP and with 7.1.3. The following requirements then apply to the final product:																
Flavoured	Total solids	28	26	24	28	24	28	28	20	28	28	20	10	10	10		
Flavoured	Milk fat	7	2.2	<2.2	7	<2.2							<2.5				

	Fat including, if present, milk fat						7	4	<4	7	4	<4		<2.5				
	Milk protein (whole milk equivalent)	2.2	2.2	<2.2			2.2	2.2	<2.2				<2.5					
	Protein including, if present milk protein				2.2	2.2				2.2	2.2	<2.2			<2.5			
	Weight by volume (g/l)	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475

[1] all groups may contain other ingredients permitted under 3.4.4 – 3.4.8 and additives.

3.4 Permitted Ingredients

3.4.1 Milk, milk derived constituents and milk products - fresh, concentrated, dried, fermented, reconstituted or recombined.

3.4.2 Edible fats and oils other than those derived from milk.

3.4.3 Edible protein other than that derived from milk.

3.4.4 Sugars for the purpose of this standard mean those sugars for which standards have been elaborated by the Codex Alimentarius Commission and fructose.

3.4.5 Water - the water shall be of potable quality. Standards for portability shall be not less than those contained in the latest edition of the WHO International Standards for Drinking Water.

3.4.6 Eggs and pasteurized egg products or *egg* products having undergone equivalent heat treatment.

3.4.7 Fruit and fruit products.

3.4.8 Food and food ingredients intended to impart flavour, taste or texture, e.g. coffee, ginger, cocoa, honey, nuts, liqueurs, salt (sodium chloride).

4. FOOD ADDITIVES

The following provisions in respect of food additives are subject to endorsement by the Codex Committee on Food Additives.

4.1	Colours	Colour Index No.	Maximum level in final product	List of Additives 1st series+Supp.1	
4.1.1	Black				
4.1.1.1	Brilliant black BN	28440		A2	4.15
4.1.2	Blue				
4.1.2.1	Brilliant blue POP	42090		A1	5.4
4.1.2.2	Indigotine	73015		A2	4.8
4.1.3	Green				
4.1.3.1	Chlorophyll	75810		A1	5.7
4.1.3.2	Chlorophyll copper complex	75810		A1	5.8
4.1.3.3	Chlorophyllin copper complex	75810		A2	4.4
4.1.3.4	Fast green FCF	42053		A1	5.9
4.1.4	Red				
4.1.4.1	Amaranth	16185		A2	4.2
4.1.4.2	Azorubina (Carmoisine)	14720		A2	4.14
4.1.4.3	Beet Red		100 mg/kg, singly or in 300 mg/kg combination	A2	4.17
4.1.4.4	Erythrosine	45430		A2	4.5
4.1.4.5	Iron oxides	77489		A2	4.16
4.1.4.6	Ponceau 4R	16255		A2	4.10
4.1.5	Yellow, Orange				
4.1.5.1	Annatto extracts	75120		A2	4.1
	Carotenes and carotenoids:				
4.1.5.2	-α-carotene				
4.1.5.3	-β-carotene			A1	5.3
4.1.5.4	-α-carotene -				
4.1.5.5	-β-apo-8' -carotenal			A1	5.1
4.1.5.6	-ethylester of β-apo-8-carotenoic acid			A1	5.2
4.1.5.7	Canthaxanthine			A1	5.5
4.1.5.8	Curoumin			A2	4.13
4.1.5.9	Riboflavin (Lactoflavin)			A1	5.10
4.1.5.10	Quinoline yellow	47005		A2	4.11
4.1.5.11	Sunset yellow FCF	15985		A1	5.11
4.1.5.12	Tartrazine	19140		A1	5.12
4.1.6	White				
4.1.6.1	Titanium dioxide	77891	GMP	A1	5.13
4.1.7	Brown				
4.1.7.1	Caramel (not made by the ammonia process)		GMP	A1	5.6
4.1.7.2	Caramel (made by the ammonia process)		3 g/kg	A2	4.3

4.2 Emulsifiers, Stabilizers and Thickening Agents

		Maxi mum level in final product	List of Additives 1st series	
4.2.1	Agar		A1	6.1
4.2.2	Alginic acid and its sodium, potassium and calcium salts		A1	6.7
4.2.3	Alginate propylene glycol		A1	6.6
4.2.4	Alginate ammonium		A1	6.2
4.2.5	Ammonium salts of phosphatic acid		A2	5.1
4.2.6	Cellulose, hydroxypropylmethyl		A1	6.10
4.2.7	Cellulose, methyl		A1	6.11
4.2.8	Cellulose, methylethyl		A1	6.12
4.2.9	Cellulose, microcrystalline		A1	6.13
4.2.10	Carboxymethylcellulose and its sodium and potassium salts		A1	6.14
4.2.11	Dioctyl sodium sulphosuccinate		A2	5.5
4.2.12	Gelatine		A1	6.18
4.2.13	Glycerol mono- and di-esters of fatty acids deriving from edible fats			
4.2.14	Mono- and di-glycerides			
	(a) acetic acid esters of		A1	6.21
	(b) citric acid esters of		A1	6.23
	(c) lactic acid esters of		A1	6.25
	(d) L-tartaric acid esters of			
	(e) monoacetyl-tartaric acid esters of			
	(f) diacetyl-tartaric acid esters of		A1	6.24
4.2.15	Gum arabic	10 g/kg singly or in combination (for 4.2.1 to 4.2.36)	A1	6.43.1
4.2.16	Gum carob (locust bean)			
4.2.17	Carrageenan		A1	6.43.2
4.2.18	Gum guar		A1	6.43.4
4.2.19	Gum xanthan		A1	6.43.5
4.2.20	Furcellaran		A1	6.43.3
4.2.21	Lecithins		A1	6.19
4.2.22	Pectin (amidated)		A2	5.4
4.2.23	Pectin (not amidated)		A1	6.27
4.2.24	Polyglycerol esters of fatty acids		A1	6.28
4.2.25	Polyglycerol esters of polycondensed fatty acids of castor oil			
4.2.26	Polyoxyethylene 20) sorbitan monostearate		A1	6.32
4.2.27	Polyoxyethylene 20) sorbitan monolaurate		A1	6.30
4.2.28	Polyoxyethylene 20) sorbitan mono-oleate		A1	6.31
4.2.29	Polyoxyethylene 20) sorbitan monopalmitate		A1	6.33
4.2.30	Polyoxyethylene 20) sorbitan tristearate		A1	6.34
4.2.31	Propylene glycol monostearate		A1	6.37
4.2.32	Stearoyl lactylate calcium and sodium		A1	6.38

4.2.33	Sorbitan monopalmitate	(see above)	A1	6.40
4.2.34	Sorbitan monostearate		A1	6.41
4.2.35	Sorbitan tristearate		A1	6.42
4.2.36	Sucrose esters of fatty acids and sucroglycerides		A2	5.3
4.2.37	Starch	GMP		
4.2.38	Modified starches:			
	(a) acid treated starches	30 g/kg, singly or	A1	6.26.1
	(b) alkali treated starches	combination	A1	6.26.2
	(c) bleached starches		A1	6.26.3
	(d) dextrines, white and yellow		A1	6.16
	(e) distarch adipate, acetylated		A1	6.26.4
	(f) distarch glycerol		A1	6.26.5
	(g) distarch glycerol, acetylated		A1	6.26.6
	(h) distarch glycerol, hydroxypropyl		A1	6.26.7
	(i) distarch phosphate		A1	6.26.8
	(j) distarch phosphate, hydroxypropyl		A1	6.26.15
	(k) distarch phosphate, phoaphated		A1	6.26.9
	(l) distarch phosphate, acetylated		A1	6.26.10
	(m) enzyme-treated starches		A1	6.26.11
	(n) raonostarch phosphate		A1	6.26.12
	(o) oxidized starch		A2	5.2.1
	(p) starch acetate		A1	6.26.13
	(q) starch hydroxypropyl		A1	6.26.14

4.3 Flavours

The terms used below are defined in the “List of Additives Evaluated for Their Safety-in-Use in Food:, CAC/FAL 1-1973.

		Maximum level in final product
4.3.1	Natural flavours and flavouring substances	GMP
4.3.2	Nature identical flavouring substances	GMP
4.3.3	Artificial flavouring substances appearing in the Codex List A(1) and A(2), CAC/FAL 1-1973 and Supp. 1	GMP

4.4	Acids, Bases and Salts	Maximum level in final product	List of Additives 1st series+Supp.1	
4.4.1	Acetic acid		A1	1.1
4.4.2	Adipic acid		A1	1.2
4.4.3	L-ascorbie acid		A1	3.1
4.4.4	Calcium carbonate		A1	1.7
4.4.5	Citric acid and its sodium, potassium and calcium salts		A1	1.12, 13, 14, 15
4.4.6	Fumaric acid	GMP	A1	1.16
4.4.7	Glucono delta lactone		A1	1.17
4.4.8	dl lactic acid and its sodium, potassium and calcium salts		A1	1.19
4.4.9	L-lactic acid			
4.4.10	dl malic acid		A1	1.23
4.4.11	L-malic acid			
4.4.12	Sodium, potassium and calcium orthophosphates		A1	1.29, 30
4.4.13	Sodium and potassium polyphosphates (diphosphates, triphosphates and polyphosphates containing not more than 8% of cyclic compounds)	2 g/kg singly or in combination, expressed - as P_20_5	A1	1.33, 35

5. HYGIENE

The following provisions apply, subject to endorsement, by the Codex Committee on Food Hygiene.

5.1 It is recommended that the products covered by the provisions of this standard be prepared in accordance with the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1—1969).

5.2 To the extent possible in good manufacturing practice the product shall be free from objectionable matter.

5.3 Which tested by appropriate methods of sampling and examination the product:

(a) shall not contain any pathogenic micro-organisms;

(b) shall not contain any substances originating from micro-organisms in amounts

(c) which may represent a hazard to health; and

(d) shall not contain any other poisonous or deleterious substances in amounts which ¡nay represent a hazard to health.

5.4 All ingredients used in the preparation of the product shall conform with all the hygiene provisions of all applicable Codex codes of practice.

5.5 Microbiological Standards

See Annex A and Appendix III (for consideration by the 2nd Joint FAO/WHO Expert Consultation on Microbiological Specifications for Foods and Codex Committee on Food Hygiene (14th).

5.6 Pasteurization Requirements

5.6.1 Mille ingredients used in edible ices shall have undergone pasteurization or equivalent heat treatment as indicated by the absence of phosphatase. Regarding mixes, with the exception of product group 6, the whole mix except for colours and/or flavours and flavouring substances including ingredients in 3.4.7 and 3.4.8 shall have undergone pasteurization or equivalent heat treatment as indicated by the absence of phosphatase.

3.6.2 Further pasteurization will not be required for edible ices manufactured from concentrated or dry ingredients by the addition of only potable water, pasteurized milk and flavouring matter which has *been* frozen within one hour after the addition of such substances.

6. PACKAGING

6.1 The product shall be packed in containers which will safeguard the hygienic and other qualities of the food.

6.2 The containers including packaging material shall be made only of 'substances which are safe and suitable for their intended use. Where the Codex Alimentarius Commission has established a standard for any such substance used as packaging material, that standard shall apply.

7. LABELLING

In addition to sections 1, 2, 4 and 6 of the Recommended International General Standard for the Labelling of Prepackaged Foods (CAC/RS 1-1969), the following specific provisions apply, subject to endorsement by the Codex Committee on Food Labelling. Reference to milk components shall be in accordance with the Code of Principles concerning Milk and Milk Products (CAC/M 1-1973).

7.1 Name of the Product

7.1.1 The name of the edible ice product * shall be a description customarily used in the country in which the product is sold, provided that any such description shall not mislead the consumer.

7.1.2 The name of the ice mix product* shall be ice mix (3.2.1), concentrated ice mix (3.2.2) or dry ice mix (3.2.3) supplemented by the name of the product cumstomarily used in the country in which the product is sold, provided that any such description shall not mislead the consumer»

* When the standard is sent out for acceptance governments will be requested to notify the specific names exclusively provided for the various sub-groups in their national legislation.

7.1.3 .Where a declaration of a particular ingredient is made in the name of the food, the ingredient shall be present in an amount sufficient to characterize the product. Where the ingredient is chocolate, the characteristic flavour shall be derived from non-fat cocoa solids.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with subsections 3.2(a)(ii) and (c) of the Recommended International General Standard for the Labelling of Prepackaged Foods (CAC/RS l-1969) (except as provided for in Annex 3).

7.2.2 If the milk ingredient or its constituents are not derived from cows' milk, their origin shall be indicated on the label. If eggs other than hens' eggs are used, their origin shall be indicated on the label.

7.2.3 If other protein than that contained in MSNF is added, the type shall be declared, e.g. soy protein.

7.2.4 For p. coated product, the coating shall be described in terms of the ingredients used; the description "chocolate" shall not be used unless the product conforms to the Recommended International Standard for Chocolate (CAC/RS 87-1976).

7.3 Net Contents [1]

[1] Not compulsory for consumer packs with a net weight less than 75 g/150 ml, in which case the labelling should be on each bulk container.

The net contents shall be declared by volume and/or weight in either the metric ("Système international" units) or avoirdupois or both systems of measurement as required by the country in which the food is sold.

7 4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the food shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the food shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the food undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purpose of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot. For consumer packs with a net weight less than 75 grammes/150 ml this information need appear only on the bulk container.

7.7 Directions for Use of Ice Mixes

Packages of concentrated and dried ice mix shall bear clear directions for the amount of water to be added to obtain the ice mix.

7.8 Additional Requirements

Information for keeping the product shall be given on retail packs with a net weight above 75 grammes/150 ml.

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling described hereunder are international referee methods which are to be endorsed by the Codex Committee on Methods of Analysis and Sampling (see also paras 7-10 of the Report).

8.1 Selection of sample

8.2 Preparation of sample

8.3 Determination of weight/unit volume

8.4 Determination of total solids

8.5 Determination of fat

8.6 Determination of foreign fat in milk fat

8.7 Determination of total protein

8.8 Determination of phosphatase

Proposal for a redraft of Section 5.5 Microbiological Standards

The following specifications using the International Commission of Microbiological Specifications for Foods (ICNSF) format for the micro biological standards, has also been adopted by the Joint FAO/WHO Expert Consultation on Microbiological Specifications for Foods, Geneva, 7-H April 1975 (EC/Microbiol/75/Report 1, Annex V, Egg and Egg Products).

5. 5.1 Microbiological Standards for Edible Ices

- Total mesophilic aerobic count:	Examine 5 samples (n) and allow 2 samples (c) to exceed 50,000 per g (m) but none to exceed 100,000 per g (M) (n=5, c=2, m=30,000, M= 100,000;
- Coliforms:	Examine 5 samples and allow 2 samples to exceed 10 per g but none to exceed 100 per g (n=5, c=2, m=10, M=100)
- Salmonella:	Examine 10 *x* 25 g samples and allow no sample to exceed 0 Salmonella (n=10, c=0, m=0)

5.5.2 Microbiological Standards for Ice mixes

- Total mesophilic aerobic count:	Examine 5 samples (n) and allow 2 samples (c) to exceed 25,000 per g (m) but none to exceed 50,000 (M) (n-5, c=2, m=25,000, M=50,000)
- Coliforms:	Examine 5 samples and allow 2 samples to exceed 1 per g but none to exceed 10 per g (n=5, c=2, m=1, M=10)
- Salmonella:	Examine 10 x 25 g samples and allow no sample to exceed 0 Salmonella (n=10, c=0, m=0)
- Coagulase positive staphylococci:	Examine 5 samples and allow 1 sample to exceed 1 per g but none to exceed 10 per g (n=5, c=1, rn=1, M=10)

Methods of analysis and sampling

1. F.S. Thatcher and U.S. Clark, Micro-organisms in Food; Their significance and Methods of enumeration", Toronto, 1968..

2. ICMSF, "Microorganisms in foods, Part 2", Toronto, 1974.

ANNEX B

INGREDIENT GROUPINGS FOR LABELLING PURPOSES

Skim milk, concentrated skim milk, and nonfat dry milk may be declared as "skim milk.

Milk, concentrated milk and dried milk nay be declared as "milk".

Sweetcream buttermilk, concentrated sweetcream buttermilk, and dried sweetcream buttermilk may be declared as "buttermilk".

Cheese Whey, concentrated cheese whey, and dried choose whey may be declared as "whey".

Cream, dried cream, and plastic cream (sometimes known as concentrated mill: fat) may be declared as "cream".

Butteroil and anhydrous butterfat may be declared as "butterfat".

Dried whole eggs, frozen whole eggs, and liquid whole eggs may be declared as "eggs".

Dried egg whites, frozen egg unites and liquid egg whites may be declared as "egg whites".

Dried egg yolks, frozen egg yolks and liquid egg yolks may be declared as "egg yollks".

Sugar (sucrose) shall be declared as "sugar", and invert sugar may be declared as

Sweeteners derived from corn may be declared as "glucose syrup".

MICROBIOLOGICAL STANDARDS FOR EDIBLE ICES AND ICE MIXES REPORTED BY GOVERNMENTS

1. Microbiological standards for Edible Ices

	Total Count	Coliforms	Salmonella	Staph. aureus	E.Coli (44°C)
Austria	250 000/g	100 col/g	neg in 50 g	neg in 1 g	1/g
Brazil	200 000/g	100 col/g			
Czechoslovakia	150 000/g fruit ices	150 col/g	neg in 20 g	neg in 20 g	no determination
Denmark	100 000/g 2 000/g water ices	100 col/g	absent	absent	must not be fecally polluted
Egypt	100 000/g				negative
Finland	100 000/g		neg in 20 g		
France				*neg* in 0.1 ml	absent in 1 ml
F.R. of Germany	100 000/g	100 col/g	neg in 25 g	neg in 0.1 ml	negative in 1 ml
Italy	100 000/g	100 col/g	neg in 23 g	neg in 0.1 g	
Netherlands	≤100 000/g	≤100 col/g	neg in 20 g		
Poland		100 col/g	neg in 25 g	absent in 0.1 g	absent in 0.1 g
Sweden	100 000/g	1 000 col/g	neg in 20 g	neg in 1 g	≤10 colonies/g
Switzerland.	100 000/g	100 col/g	neg in 20 g	1 000/g	negative in 1 g

2. Microbiological Standards for Ice Fixes

	Total Count	Coliforms	Salmonella	Staph. aureus	Phosphatase
Austria	30 000 col/g	10 col/g	absent	neg in 1 g	
Brazil	50 000 col/g	10 col/g			
Canada	50 000 col/g 5 samples 2 samples >50 000 but ≤100 000	10 col/g 5 samples 2 samples >10 but ≤100	neg 25 g 10 samples	10 col/g 5 samples, 1 sample >10 but ≤100	negative in 5 samples
Denmark	25 000 col/g	50 col/g	absent	Absent	
Egypt	50 000 col/g				
Finland	50 000 col/g	10 col/g	absent in 25 g	absent in 1 g	negative
Ireland	<50 000 col/g	100 col/10g	absent in 50 g (2 x 25 g)	<10 col/10 g	negative
Italy	50 000 col/g	10 col/g	absent in 25 g		negative
Netherlands	50 000 col/g	10 col/g	absent in 25 g	absent in 1 g	negative
Norway	50 000/g	0/0.1 ml	absent		
Peru	50 000 col/g	10 col/g	absent in 25 g	absent in 1 g	negative
Poland	50 000 col/g	10 col/g	absent in 25 g	absent in 1 g	
U.S.A.	50 000 col/g	10 col/g	absent in 25 g	absent in 1 g	negative

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APPENDIX IV

FOOD ADDITIVES TECHNOLOGICAL JUSTIFICATION

I. COLOURS

A. General Technological Function

Substances necessary to impart, preserve, or enhance the colour or shading of edible ices.

B. Specific Technological Functions

1. Uniform appearance
2. Eye appeal
3. Colour intensity varies in natural flavourings and flavouring substances.
4. Characteristic colours are occasionally inadequate in natural flavourings and flavouring substances.
5. Nature identical and artificial flavourings cannot of themselves be relied upon to impart a characteristic colour.

C. Technological Justification for Number of Colours Listed in Edible Ices Standard

The wide range of products and flavours covered by Edible Ices Standard require comprehensive list of colours. Availability and cost require alternate sources of colours.

D. List of Colours from Section 4.1 of Edible Ices Standard

II. EMULSIFIERS

A. General Technological Function

Substances used to modify surface tension in the component phase of an emulsion to establish a uniform dispersion or emulsion.

B. Specific Technological Function

1. Emulsify the fat and aqueous phase
2. Reduce the whipping time
3. Promote the extrusion of stiff ice cream from the freezer
4. Improve the air retaining capacity of the mix and control of "over-run"
5. Provide a dry appearance to the surface of the product
6. Retard dripping on melting
7. Control churning of fats during freezing
8. Improve the behaviour of the mix during freezing

C Technological Justification for Number of Emulsifiers Listed in Edible Ices Standard

The wide range of products and variations in composition require a comprehensive list of emulsifiers. Also, the number of optional ingredients utilized, the processing methods, and the desired amount of air incorporation demand such a list. Variation in the way a

specific emulsifier can function to fulfill a technological need. Availability and cost require alternate sources.

D. List of Emulsifiers from Section 4.2.1-4.2.3 of Edible Ices Standard

III. STABILIZERS AND THICKENING AGENTS

A. General Technological Function

Substances used to produce viscous solutions or dispersions.

B. Specific Technological Functions

1. Impart body
2. Improve consistency and body smoothness
3. Control the size of ice crystals during freezing
4. Retard the formation of large ice crystals during storage
5. Maintain the physical stability of all ingredients in the mix (prevent separation)
6. Improve the air retaining capacity of the mix and control of "over-run"
7. Improve melt-down characteristics
8. Avoid shrinkage and formation of lactose crystals during storage
9. Retard dripping on melting

C. Technological Justification for Number of Stabilizers and Thickening Agents Listed In Edible Ices Standard

The wide range of products and variations in composition require a comprehensive list of stabilizers and thickening agents. Also, the number of optional ingredients utilized, the processing methods and the desired amount of air incorporation demand such a list. Variation in the way specific stabilizers and thickening agents can function to fulfill a technological need. Availability and cost require alternate sources.

D. List of Stabilizers and Thickening Agents from Section 4.2.4-4.2.19 of Edible Ices Standard

IV. FLAVOURS AND FLAVOURING SUBSTANCES

A. General Technological Function

Substances added to impart or help impart a taste or aroma.

B. Specific Technological Function

Need for flavouring substances is self-evident.

C Technological Justification for Number of Flavours and Flavouring Substances Listed in. Edible Ices Standard

1. To provide a wide selection of flavours to meet the desires of the consumer
2. Natural flavouring substances vary in flavour intensity
3. Certain natural flavouring substances do not impart sufficient characteristic flavour therefore nature identical and/or artificial flavouring substances must be utilized

4. Certain flavours may only be obtained by the use of nature identical or artificial flavouring substances

5. Availability and cost require alternate sources

D. List of Flavours and Flavouring Substances from Section 4.3 of Edible Ices Standard

V. pH ADJUSTERS

A. General Technological Function

Substances added to change or maintain active acidity or basicity.

B. Specific Technological Functions

1. Balance the pH of the mix

2. Imparting and enhancing flavour attributes of the product

3. Improve the compatibility of the different ingredients

4. Provide tartness to the product

C. Technological Justification for Number of pH Adjusters Listed in Edible Ices Standard

The wide range of products and variations in composition require a comprehensive list of pH adjusters. Availability and cost require alternate sources.

D. List of pH Adjusters from Section 4.4 of Edible Ices Standard

VI. MISCELLANEOUS

Glycerol - substances to lower freezing point

Sorbitol - substances to lower freezing point

LIST OF VARIOUS FOOD ADDITIVES PROPOSED BY DELEGATIONS NOT COVERED BY LISTS A(1) AND A(2) (CAC/FAL 1-1973 + Supp.1)

Colours

Acid yellow R
Alkanna
Aluminium
Angola weed
Anthocyanins
Brasilin
Brown FK
Brilliant black BN
Capsanthin
Carbon black
Chocolate brown HT
Cobalt blue
Cochineal
Echtrot E
Escaríate GN
Fast red E
Fast yellow AE
Gold
Green S (ADI withdrawn)
Grünerde
Hematoxylon comperchiarum
Indanthrene blue RS (ADI withdrawn)
Indigo
Kreuzbeeren (Persienbeeren) extract
Lycopene
Morin
Ocker, natural and synthetic yellow and red
Orange G
Orange GGN
Orseille
Paprika
Patent blue V (ADI vithdrawn)
Red 2G
Saffron
Silver
Sandal wood
Scharlach GN
Terra di Siena
Ultramarin
Umber
Xantophylls
Yellow 2G

Emulaifiers, Stabilizers and Thickening Agents

Furcellaran
Oxidatively polymerised soya bean oil
Polyglycerol esters of polycondensed fatty acids of castor oil
Propane-1-2-diol esters of fatty acids
Sorbitan monolaurate
Sorbitan mono-oleate