

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD
HEALTH
ORGANIZATION



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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

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DISCUSSION PAPER ON THE HARMONIZATION OF TERMS USED BY CODEX AND THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES

Governments and international organizations wishing to submit comments on the following subject matter are invited to do so **no later than 16 February 2004** as follows: Netherlands Codex Contact Point, Ministry of Agriculture, Nature and Food Quality, P.O. Box 20401, 2500 E.K., The Hague, The Netherlands (Telefax: +31.70.378.6141; E-mail: info@codexalimentarius.nl, with a copy to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, Viale delle Terme di Caracalla, 00100 Rome, Italy (Telefax: +39.06.5705.4593; E-mail: Codex@fao.org).

I. SCOPE AND PURPOSE

1. The 35th Session of the CCFAC¹ noted the importance of ensuring consistency between the CCFAC and JECFA in regard to food additive functional classes, definitions, sub-classes (technological functions) and corresponding INS numbers. Therefore, the Committee requested that the Codex Secretariat prepare a Discussion Paper on the Harmonization of Terms used by Codex and JECFA for Sub-classes and Technological Functions for circulation, comment and further consideration at its 36th meeting.

II. BACKGROUND

Codex/CCFAC terminology

2. The Codex Alimentarius procedural manual defines food additives and processing aids as follows:

***Food additive** means any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result, (directly or indirectly) in it or its by-products becoming a component of or otherwise affecting the characteristics of such foods. The term does not include “contaminants” or substances added to food for maintaining or improving nutritional qualities.*

***Processing aid** means any substance or material, not including apparatus or utensils, and not consumed as a food ingredient by itself, intentionally used in the processing of raw materials, foods or its ingredients, to fulfil a certain technological purpose during treatment or processing and which may result in the non-intentional but unavoidable presence of residues or derivatives in the final product.*

¹ ALINORM 03/12A para 101.

3. Functional classes for food additives are defined in Section 2 of the Guideline Class Names and the International Numbering System for Food Additives (CAC/GL 36 – 2001) (Appendix I). Sub-classes or technological functions are also identified. In addition, the Inventory of Processing Aids (CAC/MISC 3) includes within its layout functional classes recognised for processing aids (including a category of other, unspecified functions) (Appendix II).

4. The INS is intended as an identification system for food additives approved for use in one or more member countries and for use in food labelling. The basis for the INS is the General Standard for the Labelling of Prepackaged Foods, where it provides for a numbering system to be used in association with Class Names (class titles). The use of the INS to identify technological functions for the GSFA means that these technological functions and Class Names/Titles used the General Labelling Standard must be consistent and, therefore, any changes in the list of technological functions made by CCFAC would also have to be taken up as new Class Names by CCFL as an amendment to the General Labelling Standard. Inclusion of an additive in the INS list does not imply recognition of safety by Codex. Rather it is a means of identifying food additives on a world-wide basis. The list extends well beyond those additives currently cleared by JECFA. The technological functions associated with an additive in the INS are indicative rather than exhaustive and may differ from those identified by JECFA.

JECFA terminology

5. JECFA does not publish its own definitions for food additives, processing aids or contaminants.

6. The Summary of Evaluations Performed by the Joint FAO/WHO Expert Committee on Food Additives (JECFA 1956-2001) contains a list substances evaluated, grouped by functional class (Appendix III). This list is the only comprehensive list of the functional classes recognised by JECFA.

III. INTERACTIONS BETWEEN CCFAC AND JECFA

Requests from CCFAC to JECFA for evaluation of an additive.

7. Initial requests from CCFAC to JECFA for the evaluation of an additive should identify functional classes and/or technological functions performed by the additive. In addition, the data submitted to JECFA by governments and industry in support of application may further specify technological functions that are relevant either to the additive or which limit the application of the data.

The identification of technological function(s) by JECFA

8. JECFA identifies technological functions associated with the additives it evaluates in the toxicological monographs it prepares and in the specifications it develops, based upon:

- The CCFAC request and supporting data,
- Specific knowledge of experts present at JECFA meetings,
- The actual composition or specification of the material for which the safety, analytical and intake data presented is applicable.

9. As a result, the technological functions identified by JECFA may appear to be different to those listed in the document Class Names and the International Numbering System for Food Additives (CAC/GL 36 – 2001) in the Codex Alimentarius Volume One and recognized by CCFAC for application in Codex standards. Alternatively the function assigned by JECFA may represent a specific use of the additive that falls within a Codex sub-category but is undefined by Codex..

10. Furthermore, based on limited data presented to it, JECFA may only mention a subset of the possible technological functions in its evaluation and specification for an additive.

The use of JECFA evaluations and specifications by CCFAC

11. CCFAC uses the ADIs developed by JECFA as a prerequisite for inclusion of a food additive in the GSFA or in Codex commodity standards. The inclusion of processing aids in the Inventory of Processing Aids (CAC/MISC 3) or in Codex commodity standards is based upon use in member countries and is not conditional on the allocation of a JECFA ADI.

12. Dietary exposure estimates reported by JECFA are used by CCFAC to ensure the safety of entries for individual additives in the GSFA, in the context of the whole diet.

13. Specifications developed by JECFA are used to establish the chemical identity and analytical identity purity of additives included in the GSFA and in Codex commodity standards, through the use of a common index in the form of its INS number.

14. The potential inconsistencies between Codex terminology and JECFA terminology for additives are particularly relevant where applications are made to CCFAC to include additives in the GSFA for a technological function that is not mentioned in the JECFA evaluations and specifications or for which CCFAC does not fully understand the connection between this function and the function(s) identified by JECFA. For example, JECFA might conclude that, on the basis of the technological functions identified, exposure estimates indicate use will be within acceptable limits (and even allocate an ADI “not specified”). It may be unclear to CCFAC whether, consideration of other functions would lead to a different exposure estimate outcome (or possibly even the allocation of a numerical ADI instead). This could have significant implications for CCFAC when considering the inclusion of the additive in the GSFA. Alternatively, JECFA has designated technological functions for substances it has evaluated that do not occur in the Codex lists of food additive or processing aid functions, e.g. adjuvant, excipient, anti-bleaching agent, or defoaming agent. The use of such terms may cause difficulties for CCFAC in interpreting JECFA’s conclusions when considering a request for the inclusion of the same substance, described using functional class names from the Codex texts, e.g., bulking agent, a colour retention agent, or an anti-foaming agent.

15. A number of food additives have already been included in the GSFA with JECFA designated technological functions that do not appear in the Codex list. This may presents difficulties for Codex in implementing the GSFA if these functions are not verified in the appropriate Codex texts. Possible options to address this situation include:

- a. Recognition of the JECFA functions as sub-classes within the existing Codex functional classes.
- b. Modification of the entries in the GSFA to remove the JECFA functional classes and/or limit these entries to those functional effects recognized by the Codex INS.
- c. Addition of new functional classes to the Codex Table of Functional Classes, Definitions and Technological Functions for Food Additives.

IV. RECOMMENDATIONS FOR NEW FOOD ADDITIVES

16. It is important that additives are identified and designated by CCFAC and JECFA according to a common system of terminology. In this regard, Codex has developed an extensive classification system for food additives in the form of the INS, which includes descriptions of functional classes and sub-classes (or technological functions) and has application within Codex standards for both additive use and labeling. In addition, the inventory of processing aids is organized according to functional classes. CCFAC should include in its requests to JECFA for evaluation of an additive that JECFA identify the functional classes and/or sub-classes that are relevant to the evaluation and specification using terms taken from the appropriate Codex texts.

17. It is recognised that from time to time the experts present at JECFA may consider that the technological function of an additive is not properly described by the sub-classes for additives in the INS texts or in the inventory of processing aids. In this event, JECFA should be encouraged to advise CCFAC of its decision and recommend an amendment to the relevant Codex texts to add the new technological function. In the case of a food additive, JECFA should be requested to describe the sub-category or technological function within the scope of the existing functional classes in Section 2 of the INS. JECFA should provide advice to CCFAC on the use of the additive and identify the functional class(es) and most closely related sub-class(es) from the INS texts with which the new sub-class or technological function should be associated. CCFAC may then consider whether to accept the advice of JECFA and amend the INS Table of Functional Classes, definitions and technological functions or accommodate the technological function within existing sub-classes.

V. RECOMMENDATIONS FOR EXISTING FOOD ADDITIVES

18. It is proposed that for existing food additives CCFAC review the list of technological functions for food additive entries, draft entries and proposed draft entries in the GSFA that are not recognized in Section 2 of the Guideline Class Names and the International Numbering System for Food Additives (CAC/GL 36 – 2001) (Appendix IV) to:

- a. Determine the status of the descriptors:
 - i. carrier solvent,
 - ii. packing gas,
 - iii. bleaching agent,
 - iv. filter aid and
 - v. crystallization inhibitor either as processing aids or as new sub-classes within the existing Codex INS classification system.
- b. Determine the status of the descriptor carbonating agent as a processing aid or as a new sub-classes within the existing Codex INS classification system or as a food ingredient.
- c. In the draft GSFA, delete the functional description synergist (applied to orthophosphoric acid) in favour of the existing alternative functional description antioxidant synergist provided in the INS.
- d. Delete “generic” descriptors, such as adjuvant, which do not describe a technological function from the GSFA entries.
- e. Delete terms describing processing aid functions (e.g. enzyme) from the GSFA entries.
- f. In implementing these proposals CCFAC should attempt to, wherever possible, find solutions that obviate the need for changes to the General Labelling Standard while recognising that on occasions new Class Names/Titles may be necessary to facilitate fair trading in pre-packaged foods.

APPENDIX I

TABLE OF FUNCTIONAL CLASSES, DEFINITIONS AND TECHNOLOGICAL FUNCTIONS FOR FOOD ADDITIVES

<u>Functional classes</u> (for labelling purposes)	<u>Definition</u>	<u>Sub-classes</u> (technological functions)
1. Acid	Increases the acidity and/or imparts a sour taste to a food.	acidifer
2. Acidity regulator	Alters or controls the acidity or alkalinity of a food.	acid, alkali, base, buffer, buffering agent, pH adjusting agent
3. Anticaking agent	Reduces the tendency of particles of food to adhere to one another.	anticaking agent, anti-stick agent, drying agent, dusting powder, release agent
4. Antifoaming agent	Prevents or reduces foaming.	antifoaming agent
5. Antioxidant	Prolongs the shelf-life of foods by protecting against deterioration caused by oxidation, such as fat rancidity and colour changes.	antioxidant, antioxidant synergist, sequestrant
6. Bulking agents	A substance, other than air or water, which contributes to the bulk of a food without contributing significantly to its available energy value.	bulking agent, filler
7. Colour	Adds or restores colour in a food.	colour
8. Colour retention agent	Stabilizes, retains or intensifies the colour of a food.	colour fixative, colour stabilizer
9. Emulsifier	Forms or maintains a uniform mixture of two or more immiscible phases such surface as oil and water in a food.	emulsifier, plasticizer, dispersing agent, surface active agent, surfactant, wetting agent
10. Emulsifying salt	Rearranges cheese proteins in the manufacture of processed cheese, in order to prevent fat separation.	melding salt, sequestrant
11. Firming agent	Makes or keeps tissues of fruit or vegetables firm and crisp, or interacts with gelling agents to produce or strengthen a gel.	firming agent
12. Flavour enhancer	Enhances the existing taste and/or odour of a food.	flavour enhancer, flavour modifier, tenderizer
13. Flour treatment agent	A substance added to flour to improve its baking quality or colour.	bleaching agent, dough improver, flour improver
14. Foaming agent	Makes it possible to form or maintain a uniform dispersion of a gaseous phase in a liquid or solid food.	whipping agent, aerating agent
15. Gelling agent	Gives a food texture through formation of a gel.	gelling agent

<u>Functional classes</u> (for labelling purposes)	<u>Definition</u>	<u>Sub-classes</u> (technicological functions)
16. Glazing agent	A substance which, when applied to the external surface of a food, imparts a shiny appearance or provides a protective coating.	coating, sealing agent, polish
17. Humectant	Prevents food from drying out by counteracting the effect of a wetting agent atmosphere having a low degree of humidity.	moisture/water retention agent, wetting agent
18. Preservative	Prolongs the shelf-life of a food by protecting against deterioration caused by microorganisms.	antimicrobial preservative, antimycotic agent, bacteriophage control agent, chemosterilant/ wine maturing agent, disinfection agent
19. Propellant	A gas, other than air, which expels a food from a container.	propellant
20. Raising agent	A substance or combination of substances which liberate gas and thereby increase the volume of a dough.	leavening agent, raising agent
21. Stabilizer	Makes it possible to maintain a uniform dispersion of two or more immiscible substances in a food.	binder, firming agent moisture/water retention agent, foam stabilizer
22. Sweetener	A non-sugar substance which imparts a sweet taste to a food.	sweetener, artificial sweetener, nutritive sweetener
23. Thickener	Increases the viscosity of a food.	thickening agent, texturizer, bodying agent

**TECHNOLOGICAL FUNCTIONS FOR PROCESSING AIDS RECOGNIZED BY CODEX IN
CAC/MISC 3 THE INVENTORY OF PROCESSING AIDS**

Antifoam agents

Catalysts

Clarifying agents/filtration aids

Contact freezing and cooling agents

Desiccating agent/anticaking agents

Detergents (wetting agents)

Enzyme immobilization agents and supports

Enzyme preparations (including immobilized enzymes)

Flocculating agents

Ion exchange resins, membranes and molecular sieves

(Including Counter ions for resins: Membranes)

Lubricants, release and anti-stick agents, moulding aids

Micro-organism control agents

Propellant and packaging gases

Solvents, extraction and processing

Washing and peeling agents

Other processing aids

APPENDIX III

TECHNOLOGICAL FUNCTIONS FOR FOOD ADDITIVES AND PROCESSING AIDS IDENTIFIED IN THE SUMMARY OF EVALUATIONS PERFORMED BY THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (JECFA 1956-2001)

Acidity regulators	includes: <ul style="list-style-type: none">- Acidity regulator- Alkali- Buffer- Buffering agent- Neutralizing agent
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Acids	includes: <ul style="list-style-type: none">- Acid- Acidifier- Acidulant
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Adjuvants	includes: <ul style="list-style-type: none">- Adjuvant- Density adjustment agent for flavouring oils in beverages- Diluent for food colours and other food additives- Encapsulating agent for food additives, flavouring agents, and vitamins- Excipient- Formulation aid- Tableting adjunct- Tableting aid/agent
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Adsorbents	includes: <ul style="list-style-type: none">- Adsorbent- Decolourizing agent
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Anticaking agents	includes: <ul style="list-style-type: none">- Anticaking agent- Drying agent- Dusting agent
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Antifoaming agents	includes: <ul style="list-style-type: none">- Antifoaming agent- Defoaming agent
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Antioxidants	
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Bulking agents	includes: <ul style="list-style-type: none">- Bulking agent- Component of chewing gum base- Filler
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Carriers, Carrier solvents	includes: <ul style="list-style-type: none">- Carrier- Carrier for flavouring agents- Carrier solvent

Clouding agents	includes: <ul style="list-style-type: none">- Clouding agent- Cloud producing agent
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Colour retention agents	includes: <ul style="list-style-type: none">- Antibleaching agent- Colour adjunct- Colour fixative- Colour retention agent- Colour stabilizer
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Colours	includes: <ul style="list-style-type: none">- Colour- Decorative pigment- Food colour- Surface colorant
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Contaminants	
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Emulsifiers	includes: <ul style="list-style-type: none">- Antispattering agent- Dispersing agent- Emulsifier- Emulsifying agent- Plasticizer- Suspending agent- Suspension agent
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Enzyme preparations	includes: <ul style="list-style-type: none">- Animal enzyme preparation- Microbial enzyme preparation- Plant-derived enzyme preparation
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Extraction solvents	
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Filtering aids	includes: <ul style="list-style-type: none">- Clarifying agent- Filter aid- Precipitation agent
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Firming agents	
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Flavour enhancers	includes: <ul style="list-style-type: none">- Flavour enhancer- Salt substitute- Seasoning agent
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Flavouring agents	
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Flour treatment agents	includes: <ul style="list-style-type: none">- Bleaching agent- Dough conditioner- Dough strengthening agent- Flour bleaching agent- Flour treatment agent- Oxidizing agent
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Foaming agents	
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Freezing agents	includes: <ul style="list-style-type: none">- Cryogenic freezant- Freezing agent- Liquid freezant
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Gelling agents	
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Glazing agents	includes: <ul style="list-style-type: none">- Film coating- Glazing agent- Protective coating- Surface finishing/treating agent
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Humectants	includes: <ul style="list-style-type: none">- Humectant- Moisture retaining agent- Wetting agent
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Naturally occurring toxicants	
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Nutrient supplements	includes: <ul style="list-style-type: none">- Dietary supplement- Nutrient- Nutrient adjunct- Nutrient agent
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Preservatives	includes: <ul style="list-style-type: none">- Antibrowning agent- Antimicrobial preservative- Antimould and antirope agent- Fumigant- Fungistatic agent- Preservative- Sterilizing agent
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Propellants	includes: <ul style="list-style-type: none">- Packing/packaging gas- Propellant
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Raising agents	includes: <ul style="list-style-type: none">- Leavening agent- Raising agent
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Reduced-energy fat and oil replacement	
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Release agents	includes: <ul style="list-style-type: none">- Lubricant- Release agent
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Sequestrants	
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Stabilizers	includes: <ul style="list-style-type: none">- Colloidal stabilizer- Emulsion stabilizer- Stabilizer- Stabilizing agent
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Sweetening agents	includes: <ul style="list-style-type: none">- Sweeteners- Sweetening agents
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Synergists	includes: <ul style="list-style-type: none">- Antimicrobial synergist- Synergist- Synergist and solubilizer for antioxidants and flavouring agents
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Thickening agents	includes: <ul style="list-style-type: none">- Binder- Bodying agent- Texturing agent- Texturizer- Texturizing agent- Thickener- Thickening agent
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Veterinary drugs	
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Yeast foods	includes: <ul style="list-style-type: none">- Yeast food- Yeast nutrient
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Miscellaneous	includes: <ul style="list-style-type: none">- Carbonating agent- Crystallization inhibitor- Immobilizing agent- Processing aid- Treatment of malt in brewing
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Appendix IV

TECHNOLOGICAL FUNCTIONS IN GSFA AND DRAFT GSFA ENTRIES THAT ARE NOT RECOGNIZED IN SECTION 2 OF THE GUIDELINE CLASS NAMES AND THE INTERNATIONAL NUMBERING SYSTEM FOR FOOD ADDITIVES (CAC/GL 36 – 2001)

INS	Additive name	Functions listed in the GSFA /draft GSFA but not recognised in INS section 2 classifications	Technological functions recognised for the additive in the INS list (section 3) ¹	Proposed CCFAC action(s)	GSFA status year of adoption or draft step
1100	Alpha amylase (asp oryzae var.)	Enzyme Adjuvant	Flour treatment agent	Delete Enzyme & Adjuvant from GSFA entry	1999
1100	Alpha amylase (B. subtilis)	Enzyme	Flour treatment agent	Delete Enzyme from GSFA entry	3
1100	Alpha amylase (carbohydrase) (B.licheniformis)	Enzyme	Flour treatment agent	Delete Enzyme from GSFA entry	3
559	Aluminium silicate	Adjuvant	Anti-caking agent	Delete Adjuvant from GSFA entry	6
927a	Azodicarbonamide	Adjuvant	Flour treatment agent	Delete Adjuvant from GSFA entry	1999
928	Benzoyl peroxide	Bleaching agent (not for flour)	Flour treatment agent, preservative	Query use of this additive - (ref codex standard for whey powder)	6
321	BHT	Adjuvant	Antioxidant	Delete Adjuvant from GSFA entry	6
902	Candelilla Wax	Carrier solvent	Glazing agent	Query carrier solvent function, delete Adjuvant from GSFA entry	2003
290	Carbon dioxide	Packing gas Carbonating agent	(carbonating agent, packing gas ²)	Query functions: processing aid functions delete from GSFA, additive functions add under existing functional classes, if carbonation determined to be food ingredient delete function from GSFA	6
903	Carnauba Wax	Carrier solvent Adjuvant	Glazing agent	Query carrier solvent function, delete Adjuvant from GSFA entry	2003

INS	Additive name	Functions listed in the GSFA /draft GSFA but not recognised in INS section 2 classifications	Technological functions recognised for the additive in the INS list (section 3)¹	Proposed CCFAC action(s)	GSFA status year of adoption or draft step
1503	Castor Oil	Carrier solvent	Release agent	Query carrier solvent function	6
480	Diocetyl sodium sulfosuccinate	Adjuvant	Emulsifier, wetting agent	Delete Adjuvant from GSFA entry	6
445	Glycerol esters of wood rosin	Adjuvant	Emulsifier, stabilizer	Delete Adjuvant from GSFA entry	1999
905a	Mineral oil	Adjuvant	Glazing agent, release agent, sealing agent	Delete Adjuvant from GSFA entry	6
338	Orthophosphoric acid	Synergist	Acidity regulatory, antioxidant synergist	Replace synergist with antioxidant synergist in GSFA entry	6
387	Oxystearin	Crystallisation inhibitor	Antioxidant, sequestrant	Query function - if processing aid remove from GSFA entry, if additive define in INS functions under an existing functional class	1999
1521	Polyethylene glycol	Carrier solvent Adjuvant	Antifoaming agent	Query carrier solvent function, delete Adjuvant from GSFA entry	2001
475	Polyglycerol Esters of Fatty Acids	Crystallisation inhibitor Adjuvant	Emulsifier	Query function - if processing aid remove from GSFA entry, if additive define in INS under existing functional class, delete Adjuvant from GSFA entry	6
1201	Polyvinylpyrrolidone	Adjuvant	Bodying agent, stabilizer, (clarifying agent ²), dispersing agent	Delete Adjuvant from GSFA. Also consider deleting clarifying agent from INS list as processing aid function.	1999
1520	Propylene glycol	Carrier solvent Adjuvant	Humectant, wetting agent, dispersing agent	Query carrier solvent, delete Adjuvant from GSFA entry	6
405	Propylene glycol alginate	Adjuvant	thickener, emulsifier	Delete Adjuvant from GSFA entry	6

INS	Additive name	Functions listed in the GSFA /draft GSFA but not recognised in INS section 2 classifications	Technological functions recognised for the additive in the INS list (section 3)¹	Proposed CCFAC action(s)	GSFA status year of adoption or draft step
1101	Protease (Asp oryzae var.)	Enzyme	Flour treatment agent, stabilizer, tenderizer, flavour enhancer	Delete Enzyme from GSFA entry	1999
551	Silicon dioxide (amorphous)	Filter aid	Anticaking agent	Delete Filter Aid (processing aid) from GSFA entry	6
444	Sucrose acetate isobutyrate	Adjuvant	Emulsifier, stabilizer	Delete Adjuvant from GSFA entry	1999
473	Sucrose esters of fatty acids	Adjuvant	Emulsifier	Delete Adjuvant from GSFA entry	6
1505	Triethyl citrate	Carrier solvent	Foam stabilizer	Query carrier solvent function	1999

¹ The GSFA/draft GSFA also contains a number of variations in the recognised technological functions from those listed in the INS for the same additive. Resolution of these differences is beyond the scope of the present paper.

² Indicates additive function is listed in INS list Section 3 but not recognised in the table of functional classes in Section 2