

**Review of the
Australian Food Standards Code**

Proposal P150

**A Proposal for a joint
Australia - New Zealand
Standard on Food Additives**

March 1997

The Authority should receive written submissions
no later than **30 June 1997**

Submissions should be sent to
The Standards Liaison Officer
at one of the following addresses:

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PO Box 7186
Canberra Mail Centre ACT 2610
Australia

or

Australia New Zealand Food Authority
P O Box 10559
Wellington, 6036
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Submissions will be placed on the Authority's public
register (unless a claim of commercial confidentiality
is made and accepted by the Authority) and
will therefore be open to public scrutiny.

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The Authority appreciates the knowledge and expertise contributed by the above people, and acknowledges that the views contained in this paper do not necessarily represent the views of the individuals or their organisations.

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EXECUTIVE SUMMARY

- Σ In March 1996 the (Australian) National Food Authority published a paper entitled “The Regulation of Food Additives” which sought to address the principles to be considered in the regulation of food additives. This paper was developed with consultation in Australia and New Zealand.
- Σ This policy paper has been used as the basis for the development of a proposed draft Australia New Zealand general standard on food additives.
- Σ Because of the complexities involved, it is considered productive to release the draft as a proposal under the *ANZFA Act 1991* and to seek public input on individual additives.
- Σ To facilitate the development of the proposed draft standard the additives have been arranged into 5 groupings based upon previous safety evaluations undertaken by ANZFA and by other relevant agencies including the National Health and Medical Research Council (NHMRC), The Joint FAO/WHO Expert Committee on Food Additives (JECFA), The Scientific Committee on Food of the European Commission (SCF), Health and Welfare, Canada and the US Food and Drug Administration (FDA).
- Σ A food identification system has been developed for use in the proposed draft Australia New Zealand general standard for food additives based upon the food classification system developed by the Confederation of Food and Drink Industries of the European Community (CIAA). This system has also been adopted, with variations, by the Codex Committee on Food Additives and Contaminants for use in the Codex General Standard on Food Additives.
- Σ At full assessment, ANZFA will review the existing toxicological evaluations of the additives in the draft proposed standard and will undertake comprehensive estimations of exposure to ensure that the public safety is maintained.

INTRODUCTION

In March 1996 the (Australian) National Food Authority published a paper entitled “The Regulation of Food Additives” which sought to address the principles to be considered in the regulation of food additives. This paper was prepared as part of the Review of the Food Standards Code. Subsequently, ANZFA has advertised and circulated the paper in New Zealand in order to seek further comment. The comments received from New Zealand indicate that it is appropriate that the paper be revised in due course to recognise the implementation of the joint Australia New Zealand food standards arrangements but it is, in the meantime, a suitable policy document on which to base the development of a joint Australia New Zealand general standard on food additives. The policy paper “The Regulation of Food Additives” has therefore been used as the basis for the development of a proposed draft Australia New Zealand General Standard on Food Additives.

The intent of food additive standards

In respect of the intent of food additive standards, the policy paper "The Regulation of Food Additives" concluded that:

“The principal intent of food additive standards is to ensure that intake of food additives from the food supply does not present a risk to public health and safety. The standard should, therefore, establish maximum permitted levels for food additives in relevant foods where a potential risk to public health and safety may be identified.

The levels of additives which may be added should be established on the basis of a risk analysis. This takes into account appropriate measures of safety (such as the acceptable daily intake of the additive), levels of addition required to achieve relevant technological functions and estimated daily intakes from all relevant foods.

A second intent of food additive standards is to ensure that consumers are not exposed unnecessarily to high levels of food additives. The establishment of limits may also be appropriate where there is seen to be a risk of consumer fraud and deception from the use of a food additive in particular foods or categories of foods.

The standard should facilitate both the consumers' desire to exercise choice and innovation in food technology by applying the minimum restriction on use consistent with GMP.”

Technological justification

The policy paper addressed technological justification as follows:

“The use of a food additive must be linked to a technological function. It is generally assumed by the community that regulatory agencies, on the basis of information from the food industry and the community, determine those functions which are technologically justified. In practice however, food additive standards allow the use of many additives, often by functional class, in broad food categories rather than on a case-by-case basis which effectively leaves the decision to industry.

A criticism of such standards, which permit the use of food additives other than those which operate on a recipe-by-recipe basis, is that they will potentially allow additives in individual food products in which their use cannot be technologically justified. Furthermore, current Australian standards do not elaborate criteria upon which technological justification can be assessed, by food manufacturers or consumers, for individual applications.

Although, many standards, notably Standard S1 - Miscellaneous Foods, permit a wide range of additives without limit, there is no indication that abuse of these permissions is occurring.

In deciding which technological functions are appropriate in a particular food it is necessary to consider the chemical and/or physical characteristics of that food. This process can be undertaken in isolation from consideration of individual named food additives. Once it has been decided that a function (e.g.

the need for an emulsifier or an antioxidant) would be justified on technical grounds, a list of additives which may potentially perform this function may be drawn up. Safety considerations and the potential for consumer fraud and deception may limit the additives which are permitted as well the levels which may be used. However, thereafter, choices about which additive to select from the list will depend upon manufacturing processes and techniques and is, therefore, properly beyond the scope of a food additive standard.

Good Manufacturing Practice

The policy on food additives also discussed the concept of Good Manufacturing Practice (GMP):

“The use of a food additive should not be a substitute for GMP and food additives should always be used in accordance with GMP. Permission to use a particular additive in a food or class of food should be qualified by a general requirement that any individual use must be consistent with GMP. This concept is not currently addressed in the Code.

The introduction of a reference to GMP in a food standard raises a new complexity for enforcement authorities, particularly in establishing the appropriate level of an additive necessary to achieve a desired function in a specific food. The manufacturer should be responsible for justifying the use of unusually high levels of an additive. The elaboration of clear guidelines for GMP in association with a revised standard acts to discourage the unnecessary use of additives.

The *Codex Alimentarius Commission Procedural Manual* sets out the following relevant criteria for use in assessing compliance with GMP:

- (a) the quantity of additive added to food shall be limited to the lowest possible level necessary to accomplish its desired effect;
- (b) the quantity of the additive that becomes a component of food as a result of its use in the manufacture, processing or packaging of a food and which is not intended to accomplish any physical, or other technical effect in the finished food itself, is reduced to the extent reasonably possible; and
- (c) the additive is prepared and handled in the same way as a food ingredient.”

In applying the policy on the regulation of food additives, was recognised that the result, the proposed draft standard, may appear far reaching to many in the community. Furthermore, it is not a perfect document, will likely contain inconsistencies, omissions and errors and undergo significant modification during the Full Assessment process. Nonetheless, the format proposed is broadly similar to that used by the European Union and proposed for use by Canada and by the Codex Alimentarius Commission. Therefore, it is considered productive to release the draft

and to seek public input on individual additives, rather than spend further time on refinement at such an early stage in the development process.

FOOD ADDITIVES INCLUDED IN THE PROPOSED DRAFT STANDARD

All food additives permitted currently in Australia and New Zealand have been considered in the preparation of the proposed draft standard. Those additives which on initial screening were found to be suitable for continuing food use have been proposed for inclusion in the draft standard.

Many of these additives, particularly those with general, rather than highly specific functions, are already permitted and used widely in food in both countries. In many cases no maximum levels of use are set. The proposed draft standard applies greater consistency in the way many of these additives are permitted and introduces the concept of Good Manufacturing Practice (GMP) as the effective limit on excessive use of these additives. Colours have been addressed separately within the draft standard to reflect community concerns about the use of these specific additives. Flavourings have not been addressed in detail at this stage and the draft merely permits flavourings by reference to Standard A6. It is proposed that the contents of Standard A6 will be addressed in detail in a later review.

A full list of additives addressed in the proposed draft standard, their numbers in the international numbering system for food additives (INS) and their most common technological functions is included at Attachment 2. To facilitate the development of the proposed draft standard the additives have been arranged into 5 groupings:

Group 1. Miscellaneous additives, currently permitted extensively in Australia and/or New Zealand, for which a numerical acceptable daily intake (ADI) is currently considered not necessary on account of a lack of observed toxicity or which have a numerical ADI that is unlikely to be approached from all technically justified uses. These additives are listed in Schedule 2 to the standard. In general, the technological functions achieved through the use of these additives are organoleptic and within broad limits the justification and appropriate level of use will be subject to individual preferences. Group 1 additives are, therefore, permitted in accordance with GMP in foods except fresh and unprocessed foods or where the general presence of food additives would not be reasonably expected.

Group 2 Colours for which an ADI has been deemed unnecessary on account of their lack of observed toxicity or which have a numerical ADI that is unlikely to be approached from all technically justified uses. The justification for use of colour additives in processed foods is largely a matter of individual preference and essentially similar to that set out for Group 1 additives. These additives are listed in Schedule 3 to the proposed draft standard and are permitted in accordance with GMP in specified processed foods.

Group 3 Colours which have numerical ADIs which are sufficiently high to enable their inclusion at a technologically useful level in all processed foods when tested on a dietary budget model. These additives are listed in Schedule 4

to the proposed draft standards and are permitted subject to defined limits in specified processed foods.

Group 4 Food additives which have specific uses for which they can be generally considered as safe. This includes some individual additives from Groups 1 or 2 in specific foods such as unprocessed foods (eg waxed fruit and vegetables) which are not permitted to contain additives in general. These additives are listed in Schedule 1 to the standard under specific categories of food and limited both by defined limits and/or GMP.

Group 5 Additives with numerical ADIs, which preliminary estimates of potential intake indicate could be exceeded by unrestricted use, and individual colourings additives from Group 3 in specific foods where Group 3 additives are not generally permitted. These additives are permitted, subject to defined limits, under the individual categories of food in which they are permitted Schedule 1 to the standard.

In grouping the additives, consideration has been given to the results of safety evaluations undertaken by ANZFA as well as by other relevant agencies including the National Health and Medical Research Council (NHMRC), The Joint FAO/WHO Expert Committee on Food Additives (JECFA), The Scientific Committee on Food of the European Commission (SCF), Health and Welfare, Canada and the US Food and Drug Administration (FDA).

The uses and limits proposed for additives have been based in the first instance upon the uses and levels permitted in the Food Standards Code and in the New Zealand Food Regulations. Consideration has also been given to the regulations and permitted uses in the European Union, Canada and the USA and in the draft Codex General Standard on Food Additives. Limits have been standardised as mg/kg wherever practicable.

Intense sweeteners

As the newest class of food additives intense sweeteners have been the subject of highly specific regulation in food standards in the past while patterns of use were established. Recently, number of regulatory bodies (the European Union and the USFDA) have proposed to apply more generic regulation to intense sweeteners in line with the way other food additives are regulated.

Intense sweeteners may be used in food for a number of technological purposes, to:

- replace the sweetness normally derived from sugars,
- add sweetness over and above that which can normally be derived from sugar, and
- act as flavour modifiers at levels below that at which sweetness is perceived.

The first of these uses has a very large number of potential applications. However, if the amount of sugar being replaced and the relative sweetness of the intense sweetener under appropriate conditions are known, it is relatively straight forward to make estimates of consumption. During previous considerations of spoon-for-spoon table top sweeteners, ANZFA determined that if the total amount of sugar added to

the diet, during processing and at the time of consumption, was replaced by either sucralose or aspartame the amount of sweetener consumed would be a fraction of its ADI. It is, therefore, considered to be consistent with the policy on the regulation of food additives that where their use can be limited to the replacement of sugar these two additives may be included in Group 1, and regulated through listing in Schedule 2. Similar calculations with two other intense sweeteners, acesulphame K and alitame suggest that replacement of total added sugar in the diet would hypothetically lead to consumption at or about the ADI. Therefore, until further intake estimates can be made these sweeteners have been included in the proposed draft standard on a case by case basis, in the context of Group 5.

Intake from the second and third purposes is less easy to predict as the appropriate levels of use may be very subjective and is not linked to a conventional characteristic of the food. Therefore, use of all intense sweeteners for these functions have been addressed on a case by case basis, in the context of Group 5, in the proposed draft standard.

THE AUSTRALIA NEW ZEALAND FOOD IDENTIFICATION SYSTEM (ANZFIS)

The food identification system used in the proposed draft Australia New Zealand general standard for food additives has been developed from the food classification system developed by the Confederation of Food and Drink Industries of the European Community (CIAA). This system has also been adopted, with variations, by the Codex Committee on Food Additives and Contaminants for use in the Codex General Standard on Food Additives. The system is set out in full in Attachment 3.

The food identification system is designed to allow the specific identification of individual foods or classes of foods to which additives may be added or from which additives are to be expressly excluded. It is intended that this will increase clarity in the use of food additives and enable greater confidence in estimating exposure to individual additives. The food classification system may be useful for determining the way in which commodity and product standards are grouped in the revised Code. This will be considered in the context of the policy paper on the structure of the Code, prepared for the review of the *Food Standards Code*.

In ANZFIS foods are ranked in a hierarchy based upon the primary commodity from which they are derived and the processing they have undergone subsequently.

eg

4 Fruits and Vegetables (including fungi, nuts and seeds)

4.1 Fresh fruits and vegetables

4.1.1 Untreated fruits and vegetables

4.1.2 Surface treated fruits and vegetables

4.1.3 Peeled &/or cut fruits and vegetables

4.2 Frozen fruits and vegetables

4.3 Processed fruits and vegetables

4.3.1 Dried fruits and vegetables

4.3.2 Fruits and vegetables in vinegar, oil, brine or alcohol

4.3.3 Fruits and vegetables in hermetically sealed containers (canned, bottled etc)

- 4.3.4 Fruit and vegetable spreads including jams and related products
- 4.3.5 Candied fruits and vegetables
- 4.3.6 Fruit and vegetable preparations including pulp
- 4.3.7 Fermented fruit and vegetable products
- 4.3.8 Other fruit and vegetable based products

Where permission for the use of an additive is given in a class of foods in the proposed draft standard, by virtue of the carry-over principle, that permission extends to all classes which follow in the hierarchy, unless otherwise specified. For example permission to add colours to:

- 4.3 Processed fruits and vegetables

would by implication permit the addition of the same colours to

- 4.3.7 Fermented fruit and vegetable products.

In contrast, an express prohibition on the use of an additive or group of additives in a food does not mean that the additive(s) is excluded from foods further

processed from that food and hence below it in the hierarchy. Thus, the exclusion of Gp 1 additives from:

- 4.1 Fresh fruits and vegetable

would preclude the addition of Gp 1 additives from

- 4.1.2 Surface treated fruits and vegetables

but would not preclude the addition of Gp 1 additive to

- 4.3 Processed fruits and vegetables

FULL ASSESSMENT AND SUBMISSIONS

At full assessment, ANZFA will review in detail the existing toxicological evaluations of all additives in the draft proposed standard, identify appropriate forms or specifications for additives and undertake comprehensive estimations of exposure from all proposed uses of each additive to ensure that the public safety is maintained. The revised draft standard at full assessment will also identify the existing additive permissions in specific compositional standards of the Code which should be removed once the proposed additive standard is in force.

In circulating the proposed draft Australia New Zealand general standard for food additives for comment, ANZFA is primarily seeking submissions which provide information about individual food additives contained in the proposed draft standard, such as:

- new data on the safety of any food additive which is suitable for scientific evaluation and has emerged since the additive was last evaluated by regulatory authorities in Australia or overseas,
- current or proposed uses of food additives which are not reflected in the draft, and
- data to demonstrate that current or proposed uses of food additives are inappropriate.

ANZFA has previously undertaken extensive public consultation on the use of food additives during the preparation of the policy paper “The Regulation of Food Additives”. It is not expected that this policy document or the general approach to food additive regulation set out within it be the subject of further detailed consultation in the present context. Furthermore, it is recognised that the labelling of foods, including labelling for the presence of food additives, is the subject of another project within the review and the Authority is not seeking comment on this matter at the present time.

WORLD TRADE ORGANIZATION (WTO) NOTIFICATION

This matter may be notified to the WTO to enable other members to make comment if significant effects are anticipated on trade in relevant food products. Matters relating to public health and safety may be notified as a Sanitary or Phytosanitary (SPS) notification, and other matters as a Technical Barriers to Trade (TBT) notification.

AUSTRALIA NEW ZEALAND FOOD AUTHORITY (ANZFA)

Australia and New Zealand agreed to a joint food standards system in December 1995 and the ANZFA came into being in July 1996 to develop and implement uniform food standards for Australia and New Zealand. Joint food standards will result from the current review of the Australian *Food Standards Code*. Under the transitional arrangements, **food for sale in Australia** (with some specific exceptions) must comply with the Australian *Food Standards Code* unless imported from New Zealand, in which case they may comply with the NZ Food Regulations. Details on the specific exemptions are available from the Authority. **Food for sale in New Zealand** must comply with either the Australian *Food Standards Code* or the New Zealand *Food Regulations*. These transitional arrangements do not apply to maximum residue limits for agricultural and veterinary chemicals, or for maximum permitted concentrations of cadmium; individual country standards continue to apply for these standards.

Any person or organisation may apply to ANZFA to have the Australian *Food Standards Code* amended. ANZFA can also propose changes to the Code if it considers necessary.

These transitional arrangements will continue until a joint *Australia-New Zealand Food Standards Code* is adopted.

REGULATORY IMPACT STATEMENT

The Authority is required to make a formal assessment of the impact of any draft standard (or amendment) on all sectors of the community, including consumers, the food industry and governments. The assessment may include (but not be limited to) the identification and evaluation of the impacts be they financial, economic or social (including health).

To assist in this process, public submissions should clearly identify relevant impact(s) and provide support documentation where possible. The resulting draft regulatory impact statement will be made available for public comment during the second round of public consultation.

INVITATION FOR PUBLIC SUBMISSIONS

Written submissions containing technical or other relevant information which will assist the Authority in undertaking a full assessment of the proposal and its regulatory impact are invited from interested individuals and organisations. Where possible, technical information should be presented in sufficient detail to allow independent scientific assessment.

The processes of the Authority are open to public scrutiny, and any submissions received will ordinarily be placed on the public register of the Authority and made available for public inspection. If you wish any confidential information contained in a submission to remain confidential to the Authority, you should clearly identify the sensitive information and provide justification for treating it in confidence. The *Australia New Zealand Food Authority Act 1991* requires the Authority to treat in confidence trade secrets relating to food and any other information relating to food, the commercial value of which would be or could reasonably be expected to be, destroyed or diminished by disclosure.

Following its full assessment of the proposal the Authority may prepare a draft standard or draft variation to a standard (and supporting draft regulatory impact statement) , or decide to abandon the proposal. If a draft standard or draft variation is prepared, it is then circulated to interested parties, including those from whom submissions were received, with a further invitation to make written submissions on the draft. Any such submissions will then be taken into consideration during the inquiry which the Authority will hold to consider the draft standard or draft variation to a standard.

Submissions should be received by the Authority by **30 June 1997**. All correspondence and submissions on this matter should quote the full title, Proposal No. P150, and be addressed to the Standards Liaison Officer at one of the following addresses::

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Draft Australia New Zealand Standard on Food Additives

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Schedule 5 Technological functions which may be performed by food additives

PURPOSE

This standard regulates the addition of food additives in the production and processing of food. Addition of a food additive to food is prohibited unless expressly permitted in this standard. Additives can only be added to food in order to achieve an identified technological function according to Good Manufacturing Practice.

Explanatory note:

This standard does not specifically define food additives, however this standard has been drafted on the basis that a food additive is:

“any substance not normally consumed as a food in itself and not normally used as a characterising component of food which is intentionally added to a food to achieve one or more of the technological functions specified in Schedule 5 and which results, or may be reasonably expected to result, in it or its by-products becoming a component of such foods.”

Definitions

1. In this standard -

'technological function' means a function set out in Schedule 5;

'maximum permitted limit' means the maximum amount of additive which may be added to the food as set out in relation to that food in Schedule 1;

General prohibition on the use of additives

2. Unless expressly permitted in this Standard, food additives must not be added to food.

Permitted use of additives

3. The additives listed in Schedules 1,2,3 and 4 may be added to a food or class of food to perform technological functions provided that:

- (a) the use complies with any restrictions on use listed in Schedule 1; and
- (b) the proportion of the additive does not exceed the maximum level necessary to achieve one or more technological functions under conditions of Good Manufacturing Practice (GMP);

Explanatory note The Codex Alimentarius Commission Procedural Manual sets out the following relevant criteria for use in assessing compliance with Good Manufacturing Practice:

- (a) *the quantity of additive added to food shall be limited to the lowest possible level necessary to accomplish its desired effect;*
- (b) *the quantity of the additive that becomes a component of food as a result of its use in the manufacture, processing or packaging of a food and which is not intended to accomplish any physical, or other technical effect in the finished food itself, is reduced to the extent reasonably possible; and*
- (c) *the additive is prepared and handled in the same way as a food ingredient.*

Requirements for use of intense sweeteners

4. Save where expressly stated otherwise in schedule 1 and notwithstanding any specific limit specified in a schedule, intense sweeteners may only be added to food to the extent necessary to replace the sweetness normally provided by sugars in the manufacture of that food:

- (a) to enable the manufacture of that food to comply with the criteria for a claim of “no added sugar” or similar term as defined in Standard A1 (10); or
- (b) to comply with the reduced energy and joule claims requirements in the *Code of Practice on Nutrient Claims on Food Labels and in Advertisements*.

Explanatory Note:

Clause 4 means that in general the use of intense sweeteners is limited to:

- foods meeting the definition of ‘reduced joule’ or ‘low joule’, or*
- food made without the ‘normal’ addition of sugar(s) eg artificially sweetened canned fruit without added sugar.*
- specific foods in which the use of the sweetener is in addition to sugar rather than as an alternative eg chewing gum, brewed soft drink, are listed in schedule 1 of the proposed draft standard on a case-by-case basis.*

Maximum permitted levels of additives

5. Where a maximum level for an additive in a food is prescribed, unless otherwise stated, the level refers to the maximum amount which may be present in the food as sold or, where there are directions for preparation, when prepared for consumption according to label directions.

Additives performing the same function

6. Where two or more additives are added to a food for the purpose of achieving a common technological function, the maximum amount of each additive permitted must be reduced in proportion to the fraction that the additive represents of all additives in that food performing that technological function.

Carry-over of additives

7. A food which has been prepared from a food containing a permitted additive or which has a food containing a permitted additive as an ingredient may contain a proportionately reduced amount of that additive.

Food for use in manufacturing

8. A food identified as being intended for use in the manufacture of another food may contain in appropriate quantity any or all of the additives permitted in the designated final food.

Schedule 5 Technological functions which may be performed by food additives

Functional class <i>sub-classes</i>	Definition
Acidity regulator <i>acid, alkali, base, buffer, buffering agent, pH adjusting agent</i>	alters or controls the acidity or alkalinity of a food
Anti-caking agent <i>anti-caking agent, anti-stick agent, drying agent, dusting powder</i>	reduces the tendency of individual food particles to adhere or improves flow characteristics
Antioxidant <i>antioxidant, antioxidant synergist</i>	retards or prevents the oxidative deterioration of a food
Bulking agent <i>bulking agent, filler</i>	contributes to the volume of a food without contributing significantly to its available energy
Colouring	adds or restores colour to foods
Colour fixative <i>colour fixative, colour stabiliser</i>	stabilises, retains or intensifies an existing colour of a food
Emulsifier <i>emulsifier, Emulsifying salt, plasticiser, dispersing agent, surface active agent, surfactant, wetting agent</i>	facilitates the formation or maintenance of an emulsion between two or more immiscible phases
Firming agent	e in relevant food products. Matters relating to public health and safety may be notified as
Flavour enhancer <i>flavour enhancer, flavour modifier, tenderiser</i>	enhances the existing taste and/or odour of a food
Flavouring (excluding herbs and spices and intense sweeteners)	adds or restores odour and/or taste properties to foods
Foaming agent <i>whipping agent, aerating agent</i>	facilitates the formation of a homogeneous dispersion of a gaseous phase in a liquid or solid food
Gelling agent	modifies food texture through gel formation
Glazing agent <i>coating, sealing agent, polish</i>	imparts a coating to the external surface of a food
Humectant <i>moisture/water retention agent, wetting agent</i>	retards moisture loss from food or promotes the dissolution of a solid in an aqueous medium
Intense sweetener	replaces the sweetness normally provided by sugars in foods without contributing significantly to their available energy

Preservative <i>anti-microbial preservative, anti-mycotic agent, bacteriophage control agent, chemosterilant, disinfection agent</i>	retards or prevents the deterioration of a food by micro organisms
Propellant	gas, other than air, which expels a food from a container
Raising agent	liberates gas and thereby increase the volume of a food
Sequestrant	forms chemical complexes with metallic ions
Stabiliser <i>binder, firming agent, water binding agent, foam stabiliser</i>	maintains the homogeneous dispersion of two or more immiscible substances in a food
Thickener <i>thickening agent, texturiser, bodying agent</i>	increases the viscosity of a food