



informing the food industry

Unexpected Allergens in Food





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Version 1

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The Australia New Zealand Food Standards Code Standard 1.2.3 (4) requires the mandatory declaration of the presence in a food of certain substances (Table 1) when these are present as an ingredient; an ingredient of a compound ingredient; a food additive or component of a food additive; a processing aid or component of a processing aid.

Table 1: Foods required for mandatory declaration

↻ Cereals containing gluten and their products, namely, wheat, rye, barley, oats and spelt and their hybridised strains other than where these substances are present in beer and spirits standardised in Standards 2.7.2 and 2.7.5 respectively
↻ Crustacea and their products
↻ Egg and egg products
↻ Fish and fish products
↻ Milk and milk products
↻ Tree nuts and sesame seeds and their products
↻ Peanuts and soybeans, and their products
↻ Added Sulphites in concentrations of 10mg/kg or more

Food allergens can be present in many food ingredients and are not always obvious from their name. The attached list (Table 2) is a guide to assist industry to identify basic food ingredients and food additives that may contain or be derived from one or more of the allergens required, by the Food Standards Code, to be identified on food labels when present.

Foods and ingredients may be sourced from suppliers with limited understanding or different interpretations of the Australian/New Zealand allergen requirements. It is important to check all information from suppliers carefully and obtain clarification where allergen information is unclear or incomplete. This list may assist industry when verifying information from suppliers.

This is not a comprehensive list and should only be used as a guide as many additives and ingredients can be produced from various sources, not always the allergen identified in the list. A wide variety of sources have been used in the preparation of this list. Manufacturers who wish to suggest the addition of a substance or food are invited to contact the Allergen Bureau: info@allergenbureau.net.

Consumers with food allergies should always read labels fully each and every time. If in doubt you may choose to contact the manufacturer or distributor of the food for further advice.

Thank you to the companies who kindly shared their allergen-investigation expertise.

Table 2: Food Ingredients and their possible allergens

Product/Ingredient Name (*Refer to Appendix One)	Details
Acidity regulator – Lactate (326, 327, 328, 329)	What is it derived from (e.g. milk (lactic acid), pork, whey etc)?
Acidity regulator – Lactic Acid (270)	What is it derived from (e.g. milk , tomatoes, molasses, potato, maize starch, wheat starch)?
Albumin / Albumen	What is it derived from (e.g. egg , milk etc)?
Amylase (alpha & beta)	What is it derived from (e.g. pig, wheat , barley , soy etc)?
Antioxidants	What are they derived from (e.g. soy , egg)?
Baking Powder	Does this contain any carriers or bases (e.g. wheat flour, rice flour etc)?
Banana Chips	What oil was used in the preparation of this product? Peanut oil has been reported to have been used. Refer to section on Fat/Oil.
Beta-carotene	Does it contain tocopherols and what are they derived from (e.g. soy). Is it microencapsulated? If so, is the capsule derived from fish ?
Beta-galactosidase	Does it contain milk ?
Beverage Whitener	Does it contain wheat , maize, casein etc?
Bran	Does it contain wheat , oats , rye , barley , spelt ?
Breadcrumbs	Do they contain sesame seeds?
Brine	Check for allergens (e.g. casein – milk protein).
Caramel	What is it derived from (e.g. wheat , maize, sugar beet, cane sugar etc)?
Carotenoids- canthaxanthin	Check for allergens (e.g. fish , crustacea).
Cereal / Gluten	Which cereal: wheat , oat , rye , barley etc
Cheese	Does it contain rennet (refer to section on Rennet), vinegar (refer to section on Vinegar), Gelatine (refer to section on Gelatine), Lysosymes (refer to section on Lysosymes), Starch (e.g. Edam & Gouda cheese)?
Cheese (grated)	Does it contain a free flowing agent? If yes, what is it and what is it derived from (e.g. wheat starch, wheat flour, maize etc)? Refer to section on Cheese.
Cheese Powder	Does it contain a free flowing agent? If yes, what is it and what is it derived from (e.g. wheat starch, wheat flour, maize etc)? Refer to section on Cheese.
Clarifying Agents (used in Wine, Wine Vinegar, Fruit and Vegetable juices, animal/vegetable stock/broth.)	Clarifying agents include casein (milk protein), egg white, isinglass (fish collagen), gelatine (refer to section on Gelatine) or chitosan (crustacean protein).
Cocoa Powder	Does it contain soy lecithin or wheat flour?
Coconut Milk / Coconut Milk Powder	Does it contain casein (milk protein)?
Colour (101) – Riboflavin	What is it derived from (e.g. yeast – refer to section on Yeast)?
Colour (153) – Carbon Black or Brilliant Black	Does it contain glucose? Is the glucose from Wheat ?

Product/Ingredient Name (*Refer to Appendix One)	Details
Colour (160a) – Beta Carotene	Is it microencapsulated? If so, what is the encapsulating medium (e.g. Fish Gelatine)?
Colour (161) – Xanthophylls	What is it derived from (e.g. animal, egg, egg yolk, crustacea, fish)?
Colour(s)	Is there a carrier? If yes, what is the carrier derived from? (e.g. maltodextrin [refer to section on Maltodextrin, starch [refer to section on Starch], yeast [refer to section on Yeast], soy, gluten -containing substances). Check for the addition of sulphites .
Corn	Does this refer to maize or wheat ? (Some countries use the terms “corn” and “ wheat ” interchangeably.)
Cornflour	Is this derived from wheat or maize flour?
Cultures*	Check for milk .
Curry Paste	What are the component ingredients? Do they contain allergens?
Dates	Check if they are rolled in oat (powder).
Dehydrated/Dried products	Do they contain oils (used as a processing aid). Refer to section on Fat/Oil. Check for sulphites .
Dextrin / Dextrose / Maltodextrin	Is this derived from oats or wheat ?
Emulsifier	What is it derived from (e.g. soy, egg, wheat)?
Emulsifier – Calcium stearate / stearic acid (570)	What is it derived from (e.g. peanuts)?
Emulsifier – Sodium lactylates / calcium stearyl lactylate (481)	What is it derived from (e.g. peanuts, milk)?
Enzymes*	Do they contain carriers? Is the carrier from a wheat source?
Ethanol	What is it derived from (wheat)?
Fat/Oil	What is the fat/oil derived from e.g. beef, soy, peanut, sesame, canola, olive, sunflower etc? Does it contain antioxidants (refer to section on Antioxidants)?
Fatty Acids (mono and di-glycerides)	What are they derived from (e.g. soy)?
Flavour Enhancers (620, 621, 622, 623, 624, 625, 627, 631, 635)*	What are they derived from? (e.g. meat, sardines (fish), wheat, soy, maize). If microbial synthesis, what is the source of the nitrogen and carbohydrate (e.g. wheat, soy, maize etc)?
Flavours	Do they contain any bases, carriers, free flowing agents (e.g. maltodextrin [refer to section on Maltodextrin], casein , oleoresins [refer to section on Oleoresins], emulsifiers [refer to section on Emulsifiers], oils [refer to section on Fat/Oil]). If yes, what are they derived from (e.g. wheat, maize, soy, egg, peanut)? Do they contain hydrolysed protein? (refer to sections on Hydrolysed Proteins) Do they contain fatty acids eg mono-, di- or tri-glycerides (refer to section on Fatty Acids)? Have they been encapsulated with fish gelatine?

Product/Ingredient Name (*Refer to Appendix One)	Details
Fruit	Check waxes applied to fruits for allergens.
Gelatine	What is the gelatine derived from (e.g. fish (isinglass), beef, pork, chicken etc)? Check for the addition of sulphites .
Gellan Gum*	What is the Carbohydrate source used to grow the gum? e.g. wheat , maize, molasses, cane sugar. What is the protein source used to grow the gum (e.g. soy, egg)?
Glucose / Glucose Syrup	What is it derived from (e.g. wheat , maize, rice, potato, oats etc)?
Glycerine	Check for peanuts .
Herb Extract(s)/ Spice Extract(s)	Does it contain any Bases, Carriers, Free flowing agents (e.g. maltodextrin, flour, oleoresins, emulsifiers). If yes, what are they derived from e.g. wheat , maize, soy, egg etc?
Herb(s)	Does it contain any Bases, Carriers, Free flowing agents (e.g. maltodextrin, flour, oleoresins, emulsifiers). If yes, what are they derived from (e.g. wheat , maize, soy, egg)?
Hydrolysed Animal Protein	What is it derived from or does it contain casein, whey, egg, fish ?
Hydrolysed Vegetable Protein	What is it derived from (e.g. soy, wheat , maize, peanut, sesame etc)?
Icing Sugar	Is it 100% pure Icing Sugar? If not, what else is added (e.g. wheat)?
Isoflavones	Are they derived from soy ?
Lecithin	What is it derived from (e.g. soy, egg etc)?
Lysosomes	Check for egg protein.
Malt / Malt extract	Is this derived from gluten -containing cereals?
Maltodextrin	Check for wheat and added sulphites .
Mayonnaise	What are the component ingredients? Do they contain allergens (e.g. egg)?
Meat (manufactured – fish, meat, poultry)	Does it contain binders? If yes, do the binders contain milk and/or egg ? Does this product contain fillers? If yes, do the fillers contain soy or gluten -containing cereals.
Milk powder	Does it contain soy lecithin?
Minerals	Are they microencapsulated with fish gelatine?
Mustard	Does it contain wheat ?
Non-dairy creamers	Milk derivatives have been reported in some non-dairy creamers.
Oil (vegetable)	What is the source of the oil (e.g. soy, peanut, sesame , canola, olive etc.)? Does it contain antioxidants? If so, what are they derived from (e.g. soy, egg)? Check for the addition of soy lecithin.
Oleoresins	Do they contain antioxidants / tocopherols or emulsifier? If yes, what are they derived from (e.g. soy, egg, sesame)?
Omega 3, 6	Is they derived from fish , linseed etc? Check for the addition of soy lecithin.

Product/Ingredient Name (*Refer to Appendix One)	Details
Polyols	What are they derived from (wheat , maize etc)?
Rennet	What is it derived from (e.g. bovine or synthetic)? If synthetic, what is the source eg maize, wheat , soy , molasses, sugar beet?
Soy Sauce	Does it contain wheat (in addition to soy)?
Spices	Does they contain any bases, carriers, free flowing agents (e.g. maltodextrin, flour, oleoresins, emulsifiers). If yes, what are they derived from e.g. wheat , maize, soy , egg ?
Stabilisers	What are they derived from (e.g. soy , egg)?
Starch (modified – chemically or physically)	What is the starch derived from (Maize, Tapioca, Potato, wheat)? Check for added sulphites .
Sterols (plant)	What is it derived from (soy)?
Suet	Check for gluten -containing cereals.
Sugar	What is it derived from (e.g. cane sugar, sugar beet, wheat)?
Sulphites – sulphur dioxide, bisulphite, metabisulphite (220, 221, 222, 223, 224, 228)	What is the level of addition (ppm or mg/100g)?
Sultanas	Check for soy oil. Check for wheat starch used as a dusting to prevent sticking.
Sweeteners (Artificial) – Polyols eg Sorbitol (420)	What is it derived from eg glucose (what is the glucose derived from e.g. wheat , maize, cane sugar)?
Textured Vegetable Protein	Does it contain wheat , soy ?
Thickener	What is the thickener derived from (maize, tapioca, potato, wheat) and what is the carrier material?
Tocopherols	What are the tocopherols derived from (wheat , soy)?
Vinegar	What is the vinegar derived from (Eg wheat , barley , maize, malt)? Are clarifying/fining agents used in processing the vinegar/wine (e.g. casein (milk protein), egg white, isinglass (fish protein), gelatine (beef, fish , chicken, pork) or chitosan (crustacean protein))? If Wine Vinegar, what is the residual sulphite content? If Balsamic, does it contain caramel (refer to section on Caramel)?
Vitamin E	Check for soy .
Vitamins / Vitamin Premix	Are they microcapsulated with fish gelatine? Check for lactose (milk) carriers.
Whitener	Does it contain wheat , casein ?
Worcestershire Sauce	Check for the addition of anchovies (fish).
Xanthan Gum*	What is the carbohydrate source used to grow the gum (e.g. wheat , maize, molasses, cane sugar)? What is the protein source used to grow the gum (e.g. soy , egg)?
Yeast and Yeast Extract*	What is the substrate the yeast is grown on (e.g. wheat , malt, barley , soy etc)? Are there any carriers – refer to section on Flavours.

Appendix One

Labelling requirements for products derived from allergenic substrates

Some foods and food ingredients are produced using bacteria, yeasts and other micro-organisms in a fermentation process. Fermentation is widely used in the manufacture of foods ranging from tofu to tea, from sauerkraut to salami. The micro-organisms consume (or feed on) a substrate. In some cases, the substrate may be an allergen such as wheat or soy. It can be difficult in such cases to decide whether the fermented food is a 'product' of the allergen substrate or not, which makes proper labelling of the food difficult.

The Allergen Bureau proposes that the question be addressed in the following way -

- (1) Is the fermented substrate the food? If yes, it should be labelled as the product of the substrate. Tofu, for example, is fermented soy, and should be declared as a soy product.
- (2) If not, is there sufficient processing or food technology to ensure separation between the food and the substrate? If no, the food would attract allergen labelling. If yes, then the food is not required to show allergen labelling.

The first of these is straight forward and requires no further comment. The second is more complicated. The starting point is that a food is different from substances fed to the food-producing organism. That grass is fed to a cow does not make beef a "grass product", and that an allergenic substrate fed to a micro-organism does not make a food harvested from that micro-organism a "product" of the allergen. However, in the case of fermentation the micro-organism often remains in a "bath" of the substrate, and so there remains a close connection between the two.

However, in the vast majority of cases the fermented mash does undergo further processing to separate the food from the substrate.

Conversely, if there is no effective separation step in the processing of the ferment, there is the likelihood that the food will contain at least some of the original allergenic substrate, and so such a food should be labelling as the "product" of the allergen.

If in doubt, protein analysis can indicate or confirm the presence or absence of the substrate's protein in the food and so guide the labelling outcome. However, the legal test is not based on allergen analysis, but on whether the food or ingredient is a "product" of a specified allergen (or is, in fact, a product of the micro-organism). Even with analysis showing the absence of the substrate's protein, you would still need to demonstrate an effective separation step that breaks the link between the substrate and the food or ingredient to avoid allergen labelling.



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