Schedule 18 Processing aids

Note 1 This instrument is a standard under the *Food Standards Australia New Zealand Act 1991* (Cth). The standards together make up the *Australia New Zealand Food Standards Code*. See also section 1.1.1—3.

Substances used as processing aids are regulated by Standard 1.1.1 and Standard 1.3.3. This standard lists substances that may be used as processing aids for paragraph 1.1.2—13(3)(a) and contains permissions to use substances as processing aids for Standard 1.3.3.

Note 2 The provisions of the Code that apply in New Zealand are incorporated in, or adopted under, the *Food Act 2014* (NZ). See also section 1.1.1—3.

S18—1 Name

This Standard is *Australia New Zealand Food Standards Code* – Schedule 18 – Processing aids.

Note Commencement:
This Standard commences on 1 March 2016, being the date specified as the commencement date in notices in the *Gazette* and the New Zealand Gazette under section 92 of the *Food Standards Australia New Zealand Act 1991* (Cth). See also section 93 of that Act.

S18—2 Generally permitted processing aids—substances for section 1.3.3—4

(1) For paragraph 1.3.3—4(2)(b), the substances are:

Generally permitted processing aids

activated carbon	oxygen
ammonia	perlite
ammonium hydroxide	phospholipids
argon	phosphoric acid
bone phosphate	polyethylene glycols
carbon monoxide	polyglycerol esters of fatty acids
diatomaceous earth	polyglycerol esters of interesterified ricinoleic acid
ethoxylated fatty alcohols	polyoxyethylene 40 stearate
ethyl alcohol	potassium hydroxide
fatty acid polyalkylene glycol ester	propylene glycol alginate
furcellaran	silica or silicates
hydrogenated glucose syrups	sodium hydroxide
isopropyl alcohol	sodium lauryl sulphate
magnesium hydroxide	sulphuric acid
oleic acid	tannic acid
oleyl oleate	

(2) In this section:

silica or ***silicates*** includes:

(a) sodium calcium polyphosphate silicate; and
(b) sodium hexafluorosilicate; and
(c) sodium metasilicate; and
(d) sodium silicate; and
(e) silica; and
(f) modified silica;

that complies with a specification in section S3—2 or S3—3.

Note Silicates that are additives permitted at GMP (see section S16—2) may also be used as processing aids, in accordance with paragraph 1.3.3—4(2)(a).

S18—3 Permitted processing aids for certain purposes

For section 1.3.3—5, the substances, foods and maximum permitted levels are:

Permitted processing aids for certain purposes (section 1.3.3—5)

Substance	***Maximum permitted level (mg/kg)***
Technological purpose—Antifoam agent	
Butanol	10
Oxystearin	GMP
Polydimethylsiloxane	10
Polyethylene glycol dioleate	GMP
Polyethylene/ polypropylene glycol copolymers	GMP
Soap	GMP
Sorbitan monolaurate	1
Sorbitan monooleate	1
Technological purpose—Catalyst	
Chromium (excluding chromium VI)	0.1
Copper	0.1
Molybdenum	0.1
Nickel	1.0
Peracetic acid	0.7
Potassium ethoxide	1.0
Potassium (metal)	GMP
Sodium (metal)	GMP
Sodium ethoxide	1.0
Sodium methoxide	1.0
Technological purpose—decolourants, clarifying, filtration and adsorbent agents	
Acid clays of montmorillonite	GMP
Chloromethylated aminated styrene-divinylbenzene resin	GMP
Co-extruded polystyrene and polyvinyl polypyrrolidone	GMP
Copper sulphate	GMP
Dimethylamine-epichlorohydrin copolymer	150
Dimethyldialkylammonium chloride	GMP
Divinylbenzene copolymer	GMP
High density polyethylene co-extruded with kaolin	GMP
Iron oxide	GMP
Fish collagen, including isinglass	GMP
Magnesium oxide	GMP
Modified polyacrylamide resins	GMP
Nylon	GMP

Substance	***Maximum permitted level (mg/kg)***
Phytates (including phytic acid, magnesium phytate & calcium phytate)	GMP
Polyester resins, cross-linked	GMP
Polyethylene	GMP
Polypropylene	GMP
Polyvinyl polypyrrolidone	GMP
Potassium ferrocyanide	0.1
Technological purpose—desiccating preparation	
Aluminium sulphate	GMP
Ethyl esters of fatty acids	GMP
Short chain triglycerides	GMP
Technological purpose—ion exchange resin	
Completely hydrolysed copolymers of methyl acrylate and divinylbenzene	GMP
Completely hydrolysed terpolymers of methyl acrylate, divinylbenzene and acrylonitrile	GMP
Cross-linked phenol-formaldehyde activated with one or both of the following: triethylene tetramine and tetraethylenepentamine	GMP
Cross-linked polystyrene, chloromethylated, then aminated with trimethylamine, dimethylamine, diethylenetriamine, or dimethylethanolamine	GMP
Diethylenetriamine, triethylene-tetramine, or tetraethylenepentamine cross-linked with epichlorohydrin	GMP
Divinylbenzene copolymer	GMP
Epichlorohydrin cross-linked with ammonia	GMP
Epichlorohydrin cross-linked with ammonia and then quaternised with methyl chloride to contain not more than 18% strong base capacity by weight of total exchange capacity	GMP
Hydrolysed copolymer of methyl acrylate and divinylbenzene	GMP
Methacrylic acid-divinylbenzene copolymer	GMP
Methyl acrylate-divinylbenzene copolymer containing not less than 2% by weight of divinylbenzene, aminolysed with dimethylaminopropylamine	GMP
Methyl acrylate-divinylbenzene copolymer containing not less than 3.5% by weight of divinylbenzene, aminolysed with dimethylaminopropylamine	GMP
Methyl acrylate-divinylbenzene-diethylene glycol divinyl ether terpolymer containing not less than 3.5% by weight divinylbenzene and not more than 0.6% by weight of diethylene glycol divinyl ether, aminolysed with dimethaminopropylamine	GMP
Methyl acrylate-divinylbenzene-diethylene glycol divinyl ether terpolymer containing not less than 7% by weight divinylbenzene and not more than 2.3% by weight of diethylene glycol divinyl ether, aminolysed with dimethaminopropylamine and quaternised with methyl chloride	GMP
Reaction resin of formaldehyde, acetone, and tetraethylenepentamine	GMP
Regenerated cellulose, cross-linked and alkylated with epichlorohydrin and propylene oxide, then derivatised with carboxymethyl groups whereby the amount of epichlorohydrin plus propylene oxide is no more than 70% of the starting amount of cellulose	GMP
Regenerated cellulose, cross-linked and alkylated with epichlorohydrin, then derivatised with tertiary amine groups whereby the amount of epichlorohydrin is no more than 10% of the starting amount of cellulose	GMP

Substance	*Maximum permitted level (mg/kg)*
Regenerated cellulose, cross-linked and alkylated with epichlorohydrin and propylene oxide, then derivatised with quaternary amine groups whereby the amount of epichlorohydrin plus propylene oxide is no more than 250% of the starting amount of cellulose	GMP
Regenerated cellulose, cross-linked and alkylated with epichlorohydrin and propylene oxide, then sulphonated, whereby the amount of epichlorohydrin plus propylene oxide employed is no more than 250% of the starting amount of cellulose	GMP
Styrene-divinylbenzene cross-linked copolymer, chloromethylated then aminated with dimethylamine and oxidised with hydrogen peroxide whereby the resin contains not more than 15% of vinyl N,N-dimethylbenzylamine-N-oxide and not more than 6.5% of nitrogen	GMP
Sulphite-modified cross-linked phenol-formaldehyde, with modification resulting in sulphonic acid groups on side chains	GMP
Sulphonated anthracite coal	GMP
Sulphonated copolymer of styrene and divinylbenzene	GMP
Sulphonated terpolymers of styrene, divinylbenzene, and acrylonitrile or methyl acrylate	GMP
Sulphonated tetrapolymer of styrene, divinylbenzene, acrylonitrile, and methyl acrylate derived from a mixture of monomers containing not more than a total of 2% by weight of acrylonitrile and methyl acrylate	GMP
Technological purpose—lubricant, release and anti-stick agent	
Acetylated mono- and diglycerides	100
Mineral oil based greases	GMP
Thermally oxidised soya-bean oil	320
White mineral oil	GMP
Technological purpose—carrier, solvent, diluent	
Benzyl alcohol	500
Croscarmellose sodium	GMP
Ethyl acetate	GMP
Glycerol diacetate	GMP
Glyceryl monoacetate	GMP
Glycine	GMP
Isopropyl alcohol	1000
L-Leucine	GMP
Triethyl citrate	GMP

S18—4 Permitted enzymes

(1) For section 1.3.3—6, the enzymes and sources are set out in:

(a) subsection (3) (permitted enzymes of animal origin); and

(b) subsection (4) (permitted enzymes of plant origin); and

(c) subsection (5) (permitted enzymes of microbial origin).

(2) The sources listed in relation to enzymes of microbial origin may contain additional copies of genes from the same organism.

Note 1 EC, followed by a number, means the number the Enzyme Commission uses to classify the principal enzyme activity, which is known as the Enzyme Commission number.

Note 2 ATCC, followed by a number, means the number which the American Type Culture Collection uses to identify a prokaryote.

Note 3 Some enzyme sources identified in this section are protein engineered. If such an enzyme is used as a processing aid, the resulting food may have as an ingredient a food produced using gene technology, and the requirements relating to foods produced using gene technology will apply—see Standard 1.2.1 and Standard 1.5.2. The relevant enzymes are the following:

- Endo-1,4-beta-xylanase, protein engineered variant;
- Glycerophospholipid cholesterol acyltransferase, protein engineered variant;
- Lipase, triacylglycerol, protein engineered variant;
- Maltotetraohydrolase, protein engineered variant;

(3) The permitted enzymes of animal origin are:

Permitted enzymes (section 1.3.3—6)—Enzymes of animal origin

Enzyme	***Source***
Lipase, triacylglycerol (EC 3.1.1.3)	Bovine stomach; salivary glands or forestomach of calf, kid or lamb; porcine or bovine pancreas
Pepsin (EC 3.4.23.1)	Bovine or porcine stomach
Phospholipase A_2 (EC 3.1.1.4)	Porcine pancreas
Thrombin (EC 3.4.21.5)	Bovine or porcine blood
Trypsin (EC 3.4.21.4)	Porcine or bovine pancreas

(4) The permitted enzymes of plant origin are:

Permitted enzymes (section 1.3.3—6)—Enzymes of plant origin

Enzyme	***Source***
α-Amylase (EC 3.2.1.1)	Malted cereals
β-Amylase (EC 3.2.1.2)	Sweet potato (*Ipomoea batatas*) Malted cereals
Actinidin (EC 3.4.22.14)	Kiwifruit (*Actinidia deliciosa*)
Ficin (EC 3.4.22.3)	*Ficus* spp.
Fruit bromelain (EC 3.4.22.33)	Pineapple fruit (*Ananas comosus*)
Papain (EC 3.4.22.2)	*Carica papaya*
Stem bromelain (EC 3.4.22.32)	Pineapple stem (*Ananas comosus*)

(5) The permitted enzymes of microbial origin are:

Permitted enzymes (section 1.3.3—6)—Enzymes of microbial origin

Enzyme	***Source***
α-Acetolactate decarboxylase (EC 4.1.1.5)	*Bacillus amyloliquefaciens* *Bacillus subtilis* *Bacillus subtilis*, containing the gene for α-Acetolactate decarboxylase isolated from *Bacillus brevis*
Aminopeptidase (EC 3.4.11.1)	*Aspergillus oryzae* *Lactococcus lactis*

Enzyme	***Source***
α-Amylase (EC 3.2.1.1)	*Aspergillus niger*
	Aspergillus oryzae
	Bacillus amyloliquefaciens
	Bacillus licheniformis
	Bacillus licheniformis, containing the gene for α-Amylase isolated from *Geobacillus stearothermophilus*
	Bacillus subtilis
	Bacillus subtilis, containing the gene for α-Amylase isolated from *Geobacillus stearothermophilus*
	Geobacillus stearothermophilus
β-Amylase (EC 3.2.1.2)	*Bacillus amyloliquefaciens*
	Bacillus subtilis
Amylomaltase (EC 2.4.1.25)	*Bacillus amyloliquefaciens*, containing the gene for amylomaltase derived from *Thermus thermophilus*
α-Arabinofuranosidase (EC 3.2.1.55)	*Aspergillus niger*
Asparaginase (EC 3.5.1.1)	*Aspergillus niger*
	Aspergillus oryzae
	Bacillus subtilis, containing the gene for asparaginase isolated from *Pyrococcus furiosus*
Aspergillopepsin I (EC 3.4.23.18)	*Aspergillus niger*
	Aspergillus oryzae
Aspergillopepsin II (EC 3.4.23.19)	*Aspergillus niger*
Carboxylesterase (EC 3.1.1.1)	*Rhizomucor miehei*
Catalase (EC 1.11.1.6)	*Aspergillus niger*
	Micrococcus luteus
Cellulase (EC 3.2.1.4)	*Aspergillus niger*
	Penicillium funiculosum
	Trichoderma reesei
	Trichoderma viride
Chymosin (EC 3.4.23.4)	*Aspergillus niger*
	Escherichia coli K-12 strain GE81
	Kluyveromyces lactis
Chymotrypsin (EC 3.4.21.1)	*Bacillus licheniformis*, containing the gene for chymotrypsin isolated from *Nocardiopsis prasina*
Cyclodextrin glucanotransferase (EC 2.4.1.19)	*Paenibacillus macerans*
Dextranase (EC 3.2.1.11)	*Chaetomium gracile*
	Penicillium lilacinum
Endo-1,4-beta-xylanase (EC 3.2.1.8)	*Aspergillus niger*
	Aspergillus oryzae
	Aspergillus oryzae, containing the gene for Endo-1,4-beta-xylanase isolated from *Aspergillus aculeatus*
	Aspergillus oryzae, containing the gene for Endo-1,4-beta-xylanase isolated from *Thermomyces lanuginosus*
	Bacillus amyloliquefaciens
	Bacillus subtilis
	Humicola insolens
	Trichoderma reesei

Enzyme	*Source*
Endo-1,4-beta-xylanase, protein engineered variant (EC 3.2.1.8)	*Bacillus licheniformis*, containing the gene for Endo-1,4-beta-xylanase isolated from *Bacillus licheniformis*
Endo-arabinase (EC 3.2.1.99)	*Aspergillus niger*
Endo-protease (EC 3.4.21.26)	*Aspergillus niger*
β-Fructofuranosidase (EC 3.2.1.26)	*Aspergillus fijiensis* ATCC 20611 *Aspergillus niger* *Saccharomyces cerevisiae*
α-Galactosidase (EC 3.2.1.22)	*Aspergillus niger*
β-Galactosidase (EC 3.2.1.23)	*Aspergillus niger* *Aspergillus oryzae* *Bacillus circulans* ATCC 31382 *Bacillus licheniformis*, containing the gene for β-Galactosidase isolated from *Bifidobacterium bifidum* *Kluyveromyces marxianus* *Kluyveromyces lactis*
Glucan 1,3-β-glucosidase (EC 3.2.1.58)	*Trichoderma harzianum*
β-Glucanase (EC 3.2.1.6)	*Aspergillus niger* *Aspergillus oryzae* *Bacillus amyloliquefaciens* *Bacillus subtilis* *Disporotrichum dimorphosporum* *Humicola insolens* *Talaromyces emersonii* *Trichoderma reesei*
Glucoamylase (EC 3.2.1.3)	*Aspergillus niger* *Aspergillus oryzae* *Rhizopus delemar* *Rhizopus oryzae* *Rhizopus niveus*
Glucose oxidase (EC 1.1.3.4)	*Aspergillus niger* *Aspergillus oryzae*, containing the gene for glucose oxidase isolated from *Aspergillus niger*
α-Glucosidase (EC 3.2.1.20)	*Aspergillus oryzae* *Aspergillus niger*
β-Glucosidase (EC 3.2.1.21)	*Aspergillus niger*
Glutaminase (EC 3.5.1.2)	*Bacillus amyloliquefaciens*
Glycerophospholipid cholesterol acyltransferase, protein engineered variant (EC 2.3.1.43)	*Bacillus licheniformis*, containing the gene for glycerophospholipid cholesterol acyltransferase isolated from *Aeromonas salmonicida* subsp. *salmonicida*
Hemicellulase endo-1,3-β-xylanase (EC 3.2.1.32)	*Humicola insolens*
Hemicellulase multicomponent enzyme (EC 3.2.1.78)	*Aspergillus niger* *Bacillus amyloliquefaciens* *Bacillus subtilis* *Trichoderma reesei*

Enzyme	***Source***
Hexose oxidase (EC 1.1.3.5)	*Hansenula polymorpha*, containing the gene for Hexose oxidase isolated from *Chondrus crispus*
Inulinase (EC 3.2.1.7)	*Aspergillus niger*
Lipase, monoacylglycerol (EC 3.1.1.23)	*Penicillium camembertii*
Lipase, triacylglycerol (EC 3.1.1.3)	*Aspergillus niger* *Aspergillus oryzae* *Aspergillus oryzae*, containing the gene for Lipase, triacylglycerol isolated from *Fusarium oxysporum* *Aspergillus oryzae*, containing the gene for Lipase, triacylglycerol isolated from *Humicola lanuginosa* *Aspergillus oryzae*, containing the gene for Lipase, triacylglycerol isolated from *Rhizomucor miehei* *Candida rugosa* *Hansenula polymorpha*, containing the gene for Lipase, triacylglycerol isolated from *Fusarium heterosporum* *Mucor javanicus* *Penicillium roquefortii* *Rhizopus arrhizus* *Rhizomucor miehei* *Rhizopus niveus* *Rhizopus oryzae*
Lipase, triacylglycerol, protein engineered variant (EC 3.1.1.3)	*Aspergillus niger*, containing the gene for lipase, triacylglycerol isolated from *Fusarium culmorum*
Lysophospholipase (EC 3.1.1.5)	*Aspergillus niger*
Maltogenic α-amylase (EC 3.2.1.133)	*Bacillus subtilis* containing the gene for maltogenic α-amylase isolated from *Geobacillus stearothermophilus*
Maltotetraohydrolase, protein engineered variant (EC 3.2.1.60)	*Bacillus licheniformis*, containing the gene for maltotetraohydrolase isolated from *Pseudomonas stutzeri*
Metalloproteinase	*Aspergillus oryzae* *Bacillus amyloliquefaciens* *Bacillus coagulans* *Bacillus subtilis*
Mucorpepsin (EC 3.4.23.23)	*Aspergillus oryzae* *Aspergillus oryzae*, containing the gene for Aspartic proteinase isolated from *Rhizomucor meihei* *Rhizomucor meihei* *Cryphonectria parasitica*
Oryzin (EC 3.4.21.63)	*Aspergillus melleus*
Pectin lyase (EC 4.2.2.10)	*Aspergillus niger*
Pectinesterase (EC 3.1.1.11)	*Aspergillus niger* Aspergillus oryzae, containing the gene for pectinesterase isolated from Aspergillus aculeatus
Phospholipase A_1 (EC 3.1.1.32)	*Aspergillus oryzae*, containing the gene for phospholipase A_1 isolated from *Fusarium venenatum*
Phospholipase A_2 (EC 3.1.1.4)	*Aspergillus niger*, containing the gene isolated from porcine pancreas *Streptomyces violaceoruber*
3-Phytase (EC 3.1.3.8)	*Aspergillus niger*

Enzyme	*Source*
4-Phytase (EC 3.1.3.26)	*Aspergillus oryzae*, containing the gene for 4-phytase isolated from *Peniophora lycii*
Polygalacturonase or Pectinase multicomponent enzyme (EC 3.2.1.15)	*Aspergillus niger* *Aspergillus oryzae* *Trichoderma reesei*
Pullulanase (EC 3.2.1.41)	*Bacillus acidopullulyticus* *Bacillus amyloliquefaciens* *Bacillus licheniformis* *Bacillus subtilis* *Bacillus subtilis*, containing the gene for pullulanase isolated from *Bacillus acidopullulyticus* *Klebsiella pneumoniae*
Serine proteinase (EC 3.4.21.14)	*Aspergillus oryzae* *Bacillus amyloliquefaciens* *Bacillus halodurans* *Bacillus licheniformis* *Bacillus subtilis*
Transglucosidase (EC 2.4.1.24)	*Aspergillus niger*
Transglutaminase (EC 2.3.2.13)	*Streptomyces mobaraensis*
Trypsin (EC 3.4.21.4)	*Fusarium venenatum*, containing the gene for trypsin isolated from *Fusarium oxysporum*
Urease (EC 3.5.1.5)	*Lactobacillus fermentum*
Xylose isomerase (EC 5.3.1.5)	*Actinoplanes missouriensis* *Bacillus coagulans* *Microbacterium arborescens* *Streptomyces olivaceus* *Streptomyces olivochromogenes* *Streptomyces murinus* *Streptomyces rubiginosus*

S18—5 Permitted microbial nutrients and microbial nutrient adjuncts

For section 1.3.3—7, the substances are:

Permitted microbial nutrients and microbial nutrient adjuncts

adenine	copper sulphate
adonitol	cystine
ammonium sulphate	cysteine monohydrochloride
ammonium sulphite	dextran
arginine	ferrous sulphate
asparagine	glutamic acid
aspartic acid	glycine
benzoic acid	guanine
biotin	histidine
calcium pantothenate	hydroxyethyl starch
calcium propionate	inosine

inositol	riboflavin
manganese chloride	sodium formate
manganese sulphate	sodium molybdate
niacin	sodium tetraborate
nitric acid	thiamin
pantothenic acid	threonine
peptone	uracil
phytates	xanthine
polyvinylpyrrolidone	zinc chloride
pyridoxine hydrochloride	zinc sulphate

S18—6 Permitted processing aids for water

For section 1.3.3—8, the substances and maximum permitted levels are:

Permitted processing aids for water (section 1.3.3—8)

Substance	***Maximum permitted level (mg/kg)***
Aluminium sulphate	GMP
Ammonium sulphate	GMP
Calcium hypochlorite	5 (available chlorine)
Calcium sodium polyphosphate	GMP
Chlorine	5 (available chlorine)
Chlorine dioxide	1 (available chlorine)
Cobalt sulphate	2
Copper sulphate	2
Cross-linked phenol-formaldehyde activated with one or both of triethylenetetramine or tetraethylenepentamine	GMP
Cross-linked polystyrene, first chloromethylated then aminated with trimethylamine, dimethylamine, diethylenetriamine or dimethylethanolamine	GMP
Diethylenetriamine, triethylenetetramine or tetraethylenepentamine cross-linked with epichlorohydrin	GMP
Ferric chloride	GMP
Ferric sulphate	GMP
Ferrous sulphate	GMP
Hydrofluorosilicic acid (fluorosilicic acid) (only in water used as an ingredient in other foods)	1.5 (as fluoride)
Hydrolysed copolymers of methyl acrylate and divinylbenzene	GMP
Hydrolysed terpolymers of methyl acrylate, divinylbenzene and acrylonitrile	GMP
Hydrogen peroxide	5
1-Hydroxyethylidene-1,1-diphosphonic acid	GMP
Lignosulphonic acid	GMP
Magnetite	GMP
Maleic acid polymers	GMP

Substance	*Maximum permitted level (mg/kg)*
Methyl acrylate-divinylbenzene copolymer containing not less than 2% divinylbenzene aminolysed with dimethylaminopropylamine	GMP
Methacrylic acid-divinylbenzene copolymer	GMP
Methyl acrylate-divinylbenzene-diethylene glycol divinyl ether terpolymer containing not less than 3.5% divinylbenzene and not more than 0.6% diethylene glycol divinyl ether, aminolysed with dimethylaminopropylamine	GMP
Modified polyacrylamide resins	GMP
Monobutyl ethers of polyethylene-polypropylene glycol	GMP
Ozone	GMP
Phosphorous acid	GMP
Polyacrylamide (polyelectrolytes) (as acrylamide monomer)	0.0002
Polyaluminium chloride	GMP
Polydimethyldiallyl ammonium chloride	GMP
Polyoxypropylene glycol	GMP
Potassium permanganate	GMP
Reaction resin of formaldehyde, acetone and tetraethylenepentamine	GMP
Regenerated cellulose, cross-linked and alkylated with epichlorohydrin and propylene oxide, then sulphonated whereby the amount of epichlorohydrin plus propylene oxide employed is no more than 250% of the starting amount of cellulose	GMP
Silver ions	0.01
Sodium aluminate	GMP
Sodium fluoride (only in water used as an ingredient in other foods)	1.5 (as fluoride)
Sodium fluorosilicate (Sodium silicofluoride) (only in water used as an ingredient in other foods)	1.5 (as fluoride)
Sodium glucoheptonate	0.08 (measured as cyanide)
Sodium gluconate	GMP
Sodium humate	GMP
Sodium hypochlorite	5 (available chlorine)
Sodium lignosulphonate	GMP
Sodium metabisulphite	GMP
Sodium nitrate	50 (as nitrate)
Sodium polymethacrylate	2.5
Sodium sulphite (neutral or alkaline)	GMP
Styrene-divinylbenzene cross-linked copolymer	0.02 (as styrene)
Sulphonated copolymer of styrene and divinylbenzene	GMP
Sulphonated terpolymers of styrene, divinylbenzene acrylonitrile and methyl acrylate	GMP
Sulphite modified cross-linked phenol-formaldehyde	GMP
Tannin powder extract	GMP
Tetrasodium ethylene diamine tetraacetate	GMP
Zinc sulphate	GMP

S18—7 Permitted bleaching, washing and peeling agents—various foods

For section 1.3.3—9, the substances, foods and maximum permitted levels are:

Permitted bleaching, washing and peeling agents (section 1.3.3—9)

Substance	*Food*	*Maximum permitted level (mg/kg)*
Benzoyl peroxide	All foods	40 (measured as benzoic acid)
Bromo-chloro-dimethylhydantoin	All foods	1.0 (available chlorine) 1.0 (inorganic bromide) 2.0 (dimethylhydantoin)
Calcium hypochlorite	All foods	1.0 (available chlorine)
Chlorine	All foods	1.0 (available chlorine)
Chlorine dioxide	All foods	1.0 (available chlorine)
Diammonium hydrogen orthophosphate	All foods	GMP
Dibromo-dimethylhydantoin	All foods	2.0 (inorganic bromide) 2.0 (dimethylhydantoin)
2-Ethylhexyl sodium sulphate	All foods	0.7
Hydrogen peroxide	All foods	5
Iodine	Fruits, vegetables and eggs	GMP
Oxides of nitrogen	All foods	GMP
Ozone	All foods	GMP
Peracetic acid	All foods	GMP
Sodium chlorite	All foods	1.0 (available chlorine)
Sodium dodecylbenzene sulphonate	All foods	0.7
Sodium hypochlorite	All foods	1.0 (available chlorine)
Sodium laurate	All foods	GMP
Sodium metabisulphite	Root and tuber vegetables	25
Sodium peroxide	All foods	5
Sodium persulphate	All foods	GMP
Triethanolamine	Dried vine fruit	GMP

S18—8 Permitted extraction solvents—various foods

For section 1.3.3—10, the substances, foods and maximum permitted levels are:

Permitted extraction solvents (section 1.3.3—10)

Substance	*Food*	*Maximum permitted level (mg/kg)*
Acetone	Flavouring substances	2
	Other foods	0.1
Benzyl alcohol	All foods	GMP
Butane	Flavouring substances	1
	Other foods	0.1
Butanol	All foods	10
Cyclohexane	All foods	1
Dibutyl ether	All foods	2

Substance	*Food*	*Maximum permitted level (mg/kg)*
Diethyl ether	All foods	2
Dimethyl ether	All foods	2
Ethyl acetate	All foods	10
Glyceryl triacetate	All foods	GMP
Hexanes	All foods	20
Isobutane	Flavouring substances	1
	Other foods	0.1
Methanol	All foods	5
Methylene chloride	Decaffeinated coffee	2
	Decaffeinated tea	2
	Flavouring substances	2
Methylethyl ketone	All foods	2
Propane	All foods	1
Toluene	All foods	1

S18—9 Permitted processing aids—various technological purposes

(1) For section 1.3.3—11, the substances, foods, technological purposes and maximum permitted levels are set out in the table to subsection (3).

(2) In this section:

amine agarose ion exchange resin means agarose cross-linked and alkylated with epichlorohydrin and propylene oxide, then derivatised with tertiary amine groups whereby the amount of epichlorohydrin plus propylene oxide does not exceed 250% by weight of the starting amount of agarose.

approved food for use of phage means food that:

(a) is ordinarily consumed in the same state in which it is sold; and

(b) is solid; and

(c) is one of the following:

(i) meat or meat product;

(ii) fish or fish product;

(iii) fruit or fruit product;

(iv) vegetable or vegetable product;

(v) cheese; and

(d) is not one of the following:

(i) whole nuts in the shell;

(ii) raw fruits and vegetables that are intended for hulling, peeling or washing by the consumer.

sulphonate agarose ion exchange resin means agarose cross-linked with epichlorohydrin and reacted with allyl glycidyl ether or propylene oxide, then derivatised with sulphonate groups whereby the amount of epichlorohydrin plus allyl glycidyl ether or propylene oxide does not exceed 250% by weight of the starting quantity of agarose.

(3) The table is:

Permitted processing aids—various purposes (section 1.3.3—11)

Substance	*Technological purpose and food*	*Maximum permitted level (mg/kg)*
Amine agarose ion exchange resin	Removal of specific proteins and polyphenols from beer	GMP
Ammonium bisulphite	For use in the manufacture of wine, sparkling wine and fortified wine as a microbial nutrient and microbial nutrient adjunct.	GMP
Ammonium persulphate	Yeast washing agent	GMP
Ammonium sulphate	Decalcification agent for edible casings	GMP
α-Amylase (EC 3.2.1.1) sourced from *Aspergillus niger* containing the α-Amylase gene from *Rhizomucor pusillus*	For use in starch processing and the production of potable alcohol	GMP
α-Amylase (EC 3.2.1.1) sourced from *Bacillus licheniformis* containing the α-amylase gene from *Cytophaga* species	For use in: (a) brewing; (b) the production of potable alcohol; and (c) starch processing.	GMP
α-Amylase (EC 3.2.1.1) sourced from *Bacillus subtilis* containing the α-amylase gene from *Thermoactinomyces vulgaris*	For use in the manufacture of bakery products	GMP
α-Amylase (EC 3.2.1.1) sourced from *Trichoderma reesei* containing the α-Amylase gene from *Aspergillus kawachii*	For use in brewing and the production of potable alcohol.	GMP
β-Amylase (EC 3.2.1.2) sourced from soybean (*Glycine max*)	For use in starch processing to manufacture maltose syrup	GMP
β-Amylase (EC 3.2.1.2) sourced from *Bacillus licheniformis* containing the β-amylase gene from *Priestia flexa* (basionym *Bacillus flexus*)	For use in starch processing to manufacture maltose syrup	GMP
α-Arabinofuranosidase (EC 3.2.1.55) sourced from *Trichoderma reesei* containing the α-arabinofuranosidase gene from *Talaromyces pinophilus*	For use in: (a) grain processing; and (b) the production of potable alcohol.	GMP
Aqualysin 1 (EC 3.4.21.111) sourced from *Bacillus subtilis* containing the aqualysin 1 gene from *Thermus aquaticus*	For use in the manufacture of bakery products	GMP
Aspergillopepsin I (EC 3.4.23.18) sourced from *Trichoderma reesei* containing the gene for aspergillopepsin I isolated from *Trichoderma reesei*	For use in the manufacture of potable alcohol and of animal and vegetable protein products.	GMP
Butanol	Suspension agent for sugar crystals	10
Carbonic acid	Bleached tripe washing agent	GMP
Carboxypeptidase (EC 3.4.16.6) sourced from *Aspergillus oryzae* containing the carboxypeptidase gene from *Aspergillus oryzae*	For use in (a) brewing; and (b) the manufacture of bakery products; and (c) the manufacture and/or processing of the following types of food:	GMP

	(i) flavourings; and (ii) proteins; and (iii) yeast.	
Cetyl alcohol	Coating agent on meat carcasses and primal cuts to prevent desiccation	1.0
Chitin-glucan	For use in the manufacture of wine, sparkling wine and fortified wine as a decolourant, clarifying, filtration and absorbent agent.	GMP
Chitosan sourced from *Aspergillus niger*	Manufacture of wine, beer, cider, spirits and food grade ethanol	GMP
Chymosin (EC 3.4.23.4) sourced from *Trichoderma reesei* containing the chymosin gene from *Bos taurus*	For use in the manufacture of cheese, cheese products, fermented milk products and rennetted milk products.	GMP
A colouring that is an additive permitted at GMP, a colouring permitted at GMP, or a colouring permitted to a maximum level	Applied to the outer surface of meat as a brand for the purposes of inspection or identification	GMP
Cupric citrate	Removal of sulphide compounds from wine	GMP
β-Cyclodextrin	Used to extract cholesterol from eggs	GMP
β-Galactosidase (EC 3.2.1.23) from *Papiliotrema terrestris* strain AE-BLC.	For use in the production of *galacto-oligosaccharides from lactose.	GMP
β-Galactosidase (EC 3.2.1.23) sourced from *Bacillus subtilis* containing the gene for β-galactosidase isolated from *Bifidobacterium bifidum*.	For use in the production of lactose reduced dairy foods and for the production of galacto-oligosaccharides.	GMP
β-Galactosidase (EC 3.2.1.23) sourced from *Bacillus subtilis* containing the β-galactosidase gene from *Lactobacillus delbrueckii* subsp. *bulgaricus*	For use in the production of lactose reduced dairy foods.	GMP
L-Cysteine (or HCl salt)	Dough conditioner	75
Endo-1,4-beta-xylanase (EC 3.2.1.8) from *Bacillus subtilis*, containing the gene for Endo-1,4-beta-xylanase isolated from *Pseudoalteromonas haloplanktis*.	For use in the manufacture of bakery and other cereal-based products.	GMP
Endo-1,4-ß-xylanase, protein engineered variant, (EC 3.2.1.8) from *Trichoderma reesei,* containing the gene for endo-1,4-ß-xylanase isolated from *Thermopolyspora flexuosa*	For depolymerisation of arabinoxylans during the manufacture and/or processing of the following types of food: (a) bakery products; (b) cereal products; (c) grain; (d) cereal based beverages (including beer); and (e) potable alcohol	GMP
Endo-1,4-beta-xylanase (EC 3.2.1.8) sourced from *Trichoderma reesei* containing the endo-1,4-beta-xylanase gene from *Aspergillus niger*.	For use in the manufacture of bakery and other cereal-based products, including cereal-based beverages	GMP
Endo-1,4-beta-xylanase (EC 3.2.1.8) sourced from	For use in:	GMP

Trichoderma reesei* containing the endo-1,4-beta-xylanase gene from *Talaromyces leycettanus	(a) brewing; and (b) fats and oils processing; and (c) grain processing; and (d) the production of potable alcohol.	
Ethyl acetate	Cell disruption of yeast	GMP
Ethylene diamine tetraacetic acid	Metal sequestrant for edible fats and oils and related products	GMP
Gibberellic acid	Barley germination	GMP
Glucoamylase, protein engineered variant, (EC 3.2.1.3) sourced from *Aspergillus niger* containing the glucoamylase gene from *Penicillium oxalicum*	For use in: (a) the manufacture of bakery products; (b) brewing; and (c) starch processing for the production of starch hydrolysates, including glucose syrups.	GMP
Glucoamylase (EC 3.2.1.3) sourced from *Aspergillus niger* containing the gene for glucoamylase isolated from *Talaromyces emersonii*	To hydrolyse starch in the manufacture of syrups, beverages, cereal-based products, fruit products and vegetable products	GMP
Glucoamylase (EC 3.2.1.3) sourced from *Aspergillus niger* containing the glucoamylase gene from *Trametes cingulata*	For use in starch processing and the production of potable alcohol	GMP
Glucoamylase (EC 3.2.1.3) sourced from *Trichoderma reesei* containing the glucoamylase gene from *Trichoderma reesei*	For use in: (a) brewing; (b) the manufacture of bakery products; (c) the production of potable alcohol; and (d) starch processing.	GMP
Glucoamylase, protein engineered variant, (EC 3.2.1.3) sourced from *Aspergillus niger* containing the glucoamylase gene from *Gloeophyllum trabeum*	For use in starch processing and the production of potable alcohol	GMP
α-Glucosidase (EC 3.2.1.20) sourced from *Trichoderma reesei* containing the α-glucosidase gene from *Aspergillus niger*	For use in the manufacture and/or processing of the following types of food: (a) potable alcohol; (b) lysine; (c) organic acids; (d) monosodium glutamate and other biochemicals; and (e) isomalto-oligosaccharides and other sweeteners and (f) beer.	GMP
Glucose oxidase (EC 1.1.3.4) sourced from *Trichoderma reesei* containing the glucose oxidase gene from *Penicillium amagasakiense*	For use in: a. the manufacture of bakery and other cereal-based products; and b. egg processing.	GMP
Glucose oxidase (EC 1.1.3.4) sourced from *Penicillium rubens*	For use in the manufacture of: (a) cooked products made from a dough including bread; (b) pasta; (c) noodles; and (d) dried egg powder.	GMP
Gluteral	Manufacture of edible collagen casings	GMP
Hydrogen peroxide	Control of lactic acid producing	5

	microorganisms to stabilise the pH during the manufacture of: (a) fermented milk; (b) fermented milk products; (c) cheese made using lactic acid producing microorganisms; or (d) cheese products made using lactic acid producing microorganisms	
	Inhibiting agent for dried vine fruits, fruit and vegetable juices, sugar, vinegar and yeast autolysate	5
	Removal of glucose from egg	5
	Removal of sulphur dioxide	5
1-Hydroxyethylidene-1, 1-diphosphonic acid	Metal sequestrant for use with antimicrobial agents for meat, fruit and vegetables	GMP
Ice Structuring Protein type III HPLC 12	Manufacture of ice cream and edible ices	100
Indole acetic acid	Barley germination	GMP
Inulinase (EC 3.2.1.7) sourced from *Aspergillus oryzae* containing the inulinase gene from *Aspergillus ficuum*	Hydrolysing inulin to produce fructo-oligosaccharides	GMP
Lactoperoxidase from bovine milk EC 1.11.1.7	Reduce the bacterial population or inhibit bacterial growth on meat surfaces	GMP
Lipase, triacylglycerol (EC 3.1.1.3) sourced from *Candida cylindracea*	For use in the manufacture of bakery products and dairy products and in the processing of fats and oils.	GMP
Lipase, triacylglycerol (EC 3.1.1.3) sourced from *Trichoderma reesei* containing the gene for lipase, triacylglycerol isolated from *Aspergillus tubingensis*	For use in the production of bakery products, and cereal-based beverages and foods.	GMP
Lipase, triacylglycerol (EC 3.1.1.3) sourced from *Trichoderma reesei* containing the gene for lipase, triacylglycerol isolated from *Fusarium oxysporum*	For use in the manufacture of bakery and other cereal-based products	GMP
Listeria phage P100	Listericidal treatment for use on approved food for use of phage	GMP
Lysophospholipase (EC 3.1.1.5) sourced from *Trichoderma reesei* containing the gene for lysophospholipase isolated from *Aspergillus nishimurae*	For use in starch processing, including the production of syrups	GMP
Maltogenic α-Amylase (EC 3.2.1.133) sourced from *Escherichia coli* containing the maltogenic α-Amylase gene from *Geobacillus stearothermophilus*	For use in baking, brewing and starch processing	GMP
Maltogenic α-amylase, protein engineered variant, (EC 3.2.1.133) sourced from *Saccharomyces cerevisiae* containing the gene for maltogenic α-amylase from *Geobacillus stearothermophilus*	For use in the manufacture of bakery products	GMP

Maltogenic α-amylase (EC 3.2.1.133) sourced from *Bacillus licheniformis* containing the gene for maltogenic α-amylase from *Geobacillus stearothermophilus*.	For use in: (a) brewing; (b) the manufacture of bakery products; (c) the production of potable alcohol; and; (d) starch processing.	GMP
Morpholine	Solubilising agent for coating mixtures on fruits	GMP
Oak	For use in the manufacture of wine	GMP
Octanoic acid	Antimicrobial agent for meat, fruit and vegetables	GMP
Paraffin	Coatings for cheese and cheese products	GMP
Pectinesterase (EC 3.1.1.11) sourced from *Aspergillus oryzae* containing the pectinesterase gene from *Aspergillus tubingensis*	For use during the manufacture and/or processing of the following types of food: (a) coffee; (b) fruit and vegetable juices; (c) fruit and vegetable products; (d) wine; and (e) flavouring substances.	GMP
Phospholipase A_1 (EC 3.1.1.32) sourced from *Aspergillus oryzae* containing the phospholipase A_1 gene from *Valsaria rubricosa*	For use in the manufacture of bakery products	GMP
Phospholipase A_1 (EC 3.1.1.32) sourced from *Aspergillus niger* containing the phospholipase A_1 gene from *Evansstolkia leycettana* (basionym *Talaromyces leycettanus*)	For use in the degumming of vegetable oils	GMP
Polygalacturonase (EC 3.2.1.15) sourced from *Aspergillus oryzae* containing the polygalacturonase gene from *Aspergillus tubingensi*	**For use during the manufacture and/or** processing of the following types of food: (a) coffee; (b) fruit and vegetable juices; (c) fruit and vegetable products; (d) wine; and (e) flavouring substances.	**GMP**
Polyvinyl acetate	Preparation of waxes for use in cheese and cheese products	GMP
Polyvinylimidazole-polyvinylpyrrolidone co-polymers	For use in the manufacture of wine, sparkling wine and fortified wine as a decolourant, clarifying, filtration and absorbent agent.	GMP
Potassium bromate	Germination control in malting	Limit of determination of bromate
Protein engineered enzyme that: (a) contains both of the following components - (i) UDP-glucosyltransferase; and (ii) sucrose synthase (EC 2.4.1.13); and (b) is sourced from *Pichia pastoris* strain UGT-A.	For the conversion of purified stevia leaf extract to produce rebaudioside E.	GMP

Protein engineered enzyme that: contains both UDP-glucosyltransferase and sucrose synthase (EC 2.4.1.13) components; and is sourced from *Pichia pastoris* strain UGT-A.	For the conversion of purified stevia leaf extract to produce rebaudioside D.	GMP
Protein engineered enzymes that: contain both UDP-glucosyltransferase and sucrose synthase (EC 2.4.1.13) components; and are sourced from both of the following; a *Pichia pastoris* strain expressing UGT-A, and a *Pichia pastoris* strain expressing both UGT-B1 and UGT-B2.	For the conversion of purified stevia leaf extract to produce rebaudioside M	GMP
Protein glutaminase (EC 3.5.1.44) sourced from *Chryseobacterium proteolyticum* strain AE-PG	To deamidate proteins during the manufacture and/or processing of the following types of food: (a) baked products; (b) pasta; (c) noodles; (d) milk; (e) other dairy products; (f) meat; (g) fish; (h) grains; (i) yeast; and (j) egg based products.	GMP
Pullulanase (EC 3.2.1.41) sourced from *Bacillus licheniformis* containing the pullulanase gene from *Bacillus deramificans.*	For use in brewing and in starch processing.	GMP
Salmonella phage preparation (S16 and FO1a)	Reduce population of *Salmonella* species on the surface of raw meat and raw poultry meat during processing.	GMP
Silver chloride	For use in the manufacture of wine, sparkling wine and fortified wine to remove fermentation and storage-related odours.	GMP
Sodium bromate	Germination control in malting	Limit of determination of bromate
Sodium chlorite	Antimicrobial agent for meat, fish, fruit and vegetables	Limit of determination of chlorite, chlorate, chlorous acid and chlorine dioxide
Sodium gluconate	Denuding, bleaching & neutralising tripe	GMP
Sodium glycerophosphate	Cryoprotectant for starter culture	GMP
Sodium metabisulphite	Dough conditioner	60
	Removal of excess chlorine	60
	Softening of corn kernels for starch manufacture	60 (in the starch)
	Treatment of hides for use in gelatine and collagen manufacture	GMP

Sodium sulphide	Treatment of hides for use in gelatine and collagen manufacture	GMP
Sodium sulphite	Dough conditioner	60
Sodium thiocyanate	Reduce and/or inhibit bacterial population on meat surfaces	GMP
Stearyl alcohol	Coating agent on meat carcasses and primal cuts to prevent desiccation	GMP
Subtilisin (EC 3.4.21.62) sourced from *Bacillus licheniformis* containing the gene for subtilisin from *Pyrococcus furiosus*	For use in the production of potable alcohol.	GMP
Sucrose synthase (EC 2.4.1.13) sourced from *Escherichia coli* K-12 containing the gene for sucrose synthase from *Arabidopsis thaliana*	For the conversion of purified stevia leaf extract to produce one or more of the following: rebaudioside D, rebaudioside M; and rebaudioside AM	GMP
Sulphonate agarose ion exchange resin	Production of lactoferrin from bovine milk and milk-related products	GMP
Sulphur dioxide	Control of nitrosodimethylamine in malting	750
	Treatment of hides for use in gelatine and collagen manufacture	750
Sulphurous acid	Softening of corn kernels	GMP
	Treatment of hides for use in gelatine and collagen manufacture	GMP
Thermolysin (EC 3.4.24.27) sourced from *Anoxybacillus caldiproteolyticus* strain TP-7	To catalyse the hydrolysis of peptide bonds during the manufacture and/or processing of the following types of food: (a) dairy; (b) egg; (c) meat; (d) fish; (e) protein; (f) yeast; and (g) flavouring	GMP
Thermomycolin (EC 3.4.21.65) sourced from *Trichoderma reesei* containing the thermomycolin gene from *Malbranchea cinnamomea*	To catalyse the hydrolysis of peptide bonds during the manufacture and/or processing of the following types of food: (a) meat products; (b) vegetable products; and (c) seafood products.	GMP
Triethanolamine	Solubilising agent for coating mixtures for fruits	GMP
Urea	Manufacture of concentrated gelatine solutions	1.5 times the mass of the gelatine present
	Microbial nutrient and microbial nutrient adjunct for the manufacture of all foods, except alcoholic beverages	GMP
Uridine diphosphate (UDP) glucosyltransferase sourced from *Escherichia coli* K-12 containing the UDP glucosyltransferase gene from *Solanum lycopersicum*	For the conversion of purified stevia leaf extract to produce one or more of the following: rebaudioside D, rebaudioside M; and rebaudioside AM	GMP
Uridine diphosphate (UDP) glucosyltransferase sourced from	For the conversion of purified stevia leaf extract to produce one or more of the	GMP

Escherichia coli K-12 containing the UDP glucosyltransferase gene from *Stevia rebaudiana*	following: rebaudioside D, rebaudioside M; and rebaudioside AM	
Woodflour from untreated *Pinus radiata*	Gripping agent used in the treatment of hides	GMP

Note Some enzyme sources identified in this table are protein engineered. If such an enzyme is used as a processing aid, the resulting food may have as an ingredient a food produced using gene technology, and the requirements relating to foods produced using gene technology will apply—see Standard 1.2.1 and Standard 1.5.2. The relevant enzymes are the following:

- Endo-1,4-ß-xylanase, protein engineered variant;
- Maltogenic α-amylase, protein engineered variant;
- Glucoamylase, protein engineered variant;
- Protein engineered enzymes used in the manufacture of various steviol glycosides.

S18—10 Permission to use dimethyl dicarbonate as microbial control agent

For section 1.3.3—12, the foods and maximum permitted addition levels are:

Permission to use dimethyl dicarbonate as microbial control agent (section 1.3.3—12)

Food	***Maximum permitted addition level***
Any of the following:	250 mg/kg
(a) fruit juice;	
(b) vegetable juice;	
(c) fruit juice product;	
(d) vegetable juice product.	
Water based flavoured drinks	250 mg/kg
Formulated beverages	250 mg/kg
Any of the following:	200 mg/kg
(a) wine	
(b) sparkling wine;	
(c) fortified wine;	
(d) fruit wine (including cider and perry);	
(e) vegetable wine;	
(f) mead	

S18—11 Permission to use cetylpyridinium chloride as an antimicrobial agent

(1) For section 1.3.3—13, the food, maximum permitted levels and conditions are set out in the table to subsection (3).

(2) In this section:

Poultry meat means the whole or any part of a poultry carcass which:

(a) has skin attached; and

(b) is intended for human consumption; and

(c) is not, or does not include, offal.

Note Subsection 1.1.2—3(2) defines 'offal'.

(3) The table is:

Permission to use cetylpyridinium chloride as an antimicrobial agent (section 1.3.3—13)

Food	***Maximum permitted level (mg/kg)***	***Conditions of use***
Raw poultry meat	13.4 (in the skin)	(1) The concentration of cetylpyridinium chloride in the aqueous wash solution that is applied to the raw poultry meat must not exceed 1% w/v. (2) The raw poultry meat, after being treated with cetylpyridinium chloride, must be rinsed in potable water.

Amendment History

The Amendment History provides information about each amendment to the Schedule. The information includes commencement or cessation information for relevant amendments.

These amendments are made under section 92 of the *Food Standards Australia New Zealand Act 1991* unless otherwise indicated. Amendments do not have a specific date for cessation unless indicated as such.

About this compilation

This is compilation No. 39 of Schedule 18 as in force on **30 October 2023** (up to Amendment No. 222). It includes any commenced amendment affecting the compilation to that date.

Prepared by Food Standards Australia New Zealand on **30 October 2023.**

Uncommenced amendments or provisions ceasing to have effect

To assist stakeholders, the effect of any uncommenced amendments or provisions which will cease to have effect, may be reflected in the Schedule as shaded boxed text with the relevant commencement or cessation date. These amendments will be reflected in a compilation registered on the Federal Register of Legislation including or omitting those amendments and provided in the Amendment History once the date is passed.

The following abbreviations may be used in the table below:

ad = added or inserted
am = amended
exp = expired or ceased to have effect
rep = repealed
rs = repealed and substituted

Schedule 18 was published in the Food Standards Gazette No. FSC96 on 10 April 2015 as part of Amendment 154 (F2015L00452 –- 1 April 2015) and has since been amended as follows:

Section affected	A'ment No.	FRL registration Gazette	Commencement (Cessation)	How affected	Description of amendment
table to S18—3	161	F2016L00120 18 Feb 2016 FSC103 22 Feb 2016	1 March 2016	am	Correction of spelling of tetraethylenepentamine.
table to S18—3	168	F2017L00414 11 April 2017 FSC110 13 April 2017	13 April 2017	rs	Omission of an inadvertent duplication of the entry for ion exchange resin regenerated cellulose, cross-linked and alkylated with epichlorohydrin and propylene oxide and replacement with correct text.
table to S18—4(5)	156	F2015L01227 6 Aug 2015 FSC98 6 Aug 2015	1 March 2016	ad	Entry for chymotrypsin.
table to S18—4(5)	156	F2015L01228 6 Aug 2015 FSC98 6 Aug 2015	1 March 2016	ad	Entry for trypsin.
table to S18—4(5)	157	F2015L01374 1 Sept 2015 FSC99 3 Sept 2015	1 March 2016	am	Entry for aspergillopepsin I previously included in the Code as part of A1091.
table to S18—4(5)	157	F2015L01374 1 Sept 2015 FSC99 3 Sept 2015	1 March 2016	ad	Entries for endo-1,4-beta-xylanase (EC 3.2.1.8) and endo-1,4-beta-xylanase, protein engineered variant (EC 3.2.1.8) previously included in the Code as part of A1096.

Section affected	A'ment No.	FRL registration Gazette	Commencement (Cessation)	How affected	Description of amendment
table to S18—4(5)	157	F2015L01374 1 Sept 2015 FSC99 3 Sept 2015	1 March 2016	rep	Entry for hemicellulase endo-1,4-β-xylanase previously included in the Code as part of A1096.
table to S18—4(5)	159	F2015L01919 2 Dec 2015 FSC101 7 Dec 2015	1 March 2016	rs	Entry for asparaginase.
table to S18—4(5)	164	F2016L01199 20 July 2016 FSC106 21 July 2016	21 July 2016	ad	Entry for glutaminase.
table to S18—4(5)	170	F2017L00583 23 May 2017 FSC112 25 May 2017	25 May 2017	ad	Entry for oryzin.
table to S18—4(5)	172	F2017L01136 5 Sept 2017 FSC114 7 Sept 2017	7 Sept 2017	am	Entry for β-Galactosidase (EC 3.2.1.23).
S18—9(2)	164	F2016L01204 20 July 2016 FSC106 21 July 2016	21 July 2016	rs	Replace definition of 'agarose ion exchange resin' with definitions of 'amine agarose ion exchange resin' and sulphonate agarose ion exchange resin'.
table to S18—9(3)	163	F2016L00787 12 May 2016 FSC105 19 May 2016	19 May 2016	ad	Entry for *Salmonella* phage preparation (S16 and FO1a).
table to S18—9(3)	164	F2016L01204 20 July 2016 FSC106 21 July 2016	21 July 2016	rs	Reference to agarose ion exchange resin replaced with amine agarose ion exchange resin.
table to S18—9(3)	164	F2016L01204 20 July 2016 FSC106 21 July 2016	21 July 2016	ad	Entry for sulphonate agarose ion exchange resin.
table to S18—9(3)	168	F2017L00414 11 April 2017 FSC110 13 April 2017	13 April 2017	am	Correction of formatting errors for potassium bromate and sodium bromate.
table to S18—9(3)	172	F2017L01138 6 Sept 2017 FSC114 7 Sept 2017	7 September 2017	ad	Entry for Endo-1,4-beta-xylanase (EC 3.2.1.8) from *Bacillus subtilis*, containing the gene for Endo-1,4-beta-xylanase isolated from *Pseudoalteromonas haloplanktis*
table to S18—9(3)	174	F2017L01389 24 Oct 2017 FSC115 26 Oct 2017	26 October 2017	ad	Entry for ammonium bisulphite, chitin-glucan, polyvinylimidazole-polyvinylpyrrolidone co-polymers and silver chloride
table to S18—9(3)	176	F2018L00033 10 Jan 2018 FSC117 11 Jan 2018	11 January 2018	ad	Entry for Lipase, triacylglycerol (EC 3.1.1.3) sourced from *Candida cylindracea*
table to S18—9(3)	176	F2018L00035 10 Jan 2018 FSC117 11 Jan 2018	11 January 2018	ad	Entry for Aqualysin 1 (EC 3.4.21.111) sourced from *Bacillus subtilis* containing the aqualysin 1 gene from *Thermus aquaticus*
table to S18—9(3)	178	F2018L00578 3 May 2018 FSC119 3 May 2018	3 May 2018	ad	Entry for Protein glutaminase (EC 3.5.1.44) sourced from *Chryseobacterium proteolyticum* strain AE-PG

Section affected	A'ment No.	FRL registration Gazette	Commencement (Cessation)	How affected	Description of amendment
table to S18—9(3)	180	F2018L01148 21 Aug 2018 FSC 121 23 Aug 2018	23 August 2018	ad	Entry for β-Galactosidase (EC 3.2.1.23) from *Papiliotrema terrestris* strain AE-BLC.
table to S18—9(3)	180	F2018L01147 21 Aug 2018 FSC 121 23 Aug 2018	23 August 2018	ad	Entry for Endo-1,4-ß-xylanase, protein engineered variant, (EC 3.2.1.8) from *Trichoderma reesei,* containing the gene for endo-1,4-ß-xylanase isolated from *Thermopolyspora flexuosa*
table to S18—9(3)	181	F2018L01445 18 Oct 2018 FSC 122 23 Oct 2018	23 October 2018	ad	Entry for Thermolysin (EC 3.4.24.27) sourced from *Anoxybacillus caldiproteolyticus* strain TP-7
table to S18—9(3)	182	F2018L01594 23 Nov 2018 FSC123 29 Nov 2018	29 Nov 2018	am	Corrections typographical errors, Dimethyldialkylammonium chloride, Technological purpose and Maximum permitted and food level (mg/kg) headings
table to S18—9(3)	183	F2019L00039 11 Jan 2019 FSC124 23 Jan 2019	23 January 2019	ad	Entry for Protein engineered enzymes that: contain both UDP-glucosyltransferase (EC 2.4.1.17) and sucrose synthase (EC 2.4.1.13) components; and are sourced from both of the following; a *Pichia pastoris* strain expressing UGT-A, and a *Pichia pastoris* strain expressing both UGT-B1 and UGT-B2.
table to S18—9(3)	185	F2019L00704 30 May 2019 FSC126 6 June 2019	6 June 2019	ad	Entry for Lipase, triacylglycerol (EC 3.1.1.3) sourced from *Trichoderma reesei* containing the gene for lipase, triacylglycerol isolated from *Fusarium oxysporum*
table to S18—9(3)	185	F2019L00709 30 May 2019 FSC126 6 June 2019	6 June 2019	ad	Entry for Lysophospholipase (EC 3.1.1.5) sourced from *Trichoderma reesei* containing the gene for lysophospholipase isolated from *Aspergillus nishimurae*
table to S18—9(3)	185	F2019L00712 30 May 2019 FSC126 6 June 2019	6 June 2019	ad	Entry for β-Galactosidase (EC 3.2.1.23) sourced from *Bacillus subtilis* containing the gene for β-galactosidase isolated from *Bifidobacterium bifidum*.
table to S18—9(3)	186	F2019L00995 17 July 2019 FSC127 25 July 2019	25 July 2019	ad	Entry for Glucoamylase (EC 3.2.1.3) sourced from *Aspergillus niger* containing the gene for glucoamylase isolated from *Talaromyces emersonii*
table to S18—9(3)	187	F2019L01137 12 May 2020 FSC133 14 May 2020 F2019L01137 28 Aug 2019 FSC128 5 Sep 2019 Note: This variation was not correctly published in Gazette FSC128	14 May 2020	ad	Entry for Lipase, triacylglycerol (EC 3.1.1.3) sourced from *Trichoderma reesei* containing the lipase 3 gene from *Aspergillus tubingensis*

Section affected	A'ment No.	FRL registration Gazette	Commencement (Cessation)	How affected	Description of amendment
table to S18—9(3)	187	F2019L01137 28 Aug 2019 FSC128 5 Sep 2019	5 September 2019	ad	Entry for Aspergillopepsin I (EC 3.4.23.18) sourced from *Trichoderma reesei* containing the gene for aspergillopepsin I isolated from *Trichoderma reesei*
table to S18—9(3)	187	F2019L01137 28 Aug 2019 FSC128 5 Sep 2019	5 September 2019	ad	Entry for Protein engineered enzyme that: contains both UDP-glucosyltransferase (EC 2.4.1.17) and sucrose synthase (EC 2.4.1.13) components; and is sourced from *Pichia pastoris* strain UGT-A.
table to S18—9(3)	188	F2019L01569 4 Dec 2019 FSC129 5 Dec 2019	5 December 2019	ad	Entry for Pullulanase (EC 3.2.1.41) sourced from *Bacillus licheniformis* containing the pullulanase gene from *Bacillus deramificans*.
table to S18—9(3)	190	F2020L00025 15 Jan 2020 FSC131 17 Jan 2020	17 January 2020	ad	Entry for α-Glucosidase (EC 3.2.1.20) sourced from *Trichoderma reesei* containing the α-glucosidase gene from *Aspergillus niger*.
table to S18—9(3)	191	F2020L00153 20 Feb 2020 FSC 132 26 Feb 2020	26 February 2020	ad	Entry for Sucrose synthase (EC 2.4.1.13) sourced from *Escherichia coli* K-12 containing the gene for sucrose synthase from *Arabidopsis thaliana*.
table to S18—9(3)	191	F2020L00153 20 Feb 2020 FSC 132 26 Feb 2020	26 February 2020	ad	Uridine diphosphate (UDP) glucosyltransferase sourced from *Escherichia coli* K-12 containing the UDP glucosyltransferase gene from *Solanum lycopersicum*
table to S18—9(3)	191	F2020L00153 20 Feb 2020 FSC 132 26 Feb 2020	26 February 2020	ad	Uridine diphosphate (UDP) glucosyltransferase sourced from *Escherichia coli* K-12 containing the UDP glucosyltransferase gene from *Stevia rebaudiana*
table to S18—9(3)	191	F2020L00151 Feb 2020 FSC 132 26 Feb 2020	26 February 2020	ad	Inulinase (EC 3.2.1.7) sourced from *Aspergillus oryzae* containing the inulinase gene from *Aspergillus ficuum*
table to S18—9(3)	192	F2020L00568 12 May 2020 FSC133 14 May 2020	14 May 2020	ad	Entry for Endo-1,4-beta-xylanase (EC 3.2.1.8) sourced from *Trichoderma reesei* containing the endo-1,4-beta-xylanase gene from *Aspergillus niger*
table to S18—9(3)	192	F2020L00570 12 May 2020 FSC133 14 May 2020	14 May 2020	ad	Entry for Glucose oxidase (EC 1.1.3.4) sourced from *Trichoderma reesei* containing the glucose oxidase gene from *Penicillium amagasakiense*
table to S18—9(3)	193	F2020L00937 23 July 2020 FSC134 28 July 2020	28 July 2020	ad	Entry for Protein engineered enzyme that: contains both UDP-glucosyltransferase and sucrose synthase (EC 2.4.1.13) components; and is sourced from *Pichia pastoris* strain UGT-A.
table to S18—9(3)	195	F2020L01111 31 August 2020 FSC136 3 September 2020	3 September 2020	ad	Entry for Glucoamylase (EC 3.2.1.3) sourced from *Aspergillus niger* containing the glucoamylase gene from *Trametes cingulata*

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table to S18—9(3)	195	F2020L01113 31 August 2020 FSC136 3 September 2020	3 September 2020	ad	α-Amylase (EC 3.2.1.1) sourced from *Aspergillus niger* containing the α-Amylase gene from *Rhizomucor pusillus*
table to S18—9(3)	196	F2020L01516 1 December 2020 FSC137 3 December 2020	3 December 2020	ad	Glucoamylase (EC 3.2.1.3) sourced from *Trichoderma reesei* containing the glucoamylase gene from *Trichoderma reesei*
table to S18—9(3)	196	F2020L01522 1 December 2020 FSC137 3 December 2020	3 December 2020	ad	α-Amylase (EC 3.2.1.1) sourced from *Trichoderma reesei* containing the α-Amylase gene from *Aspergillus kawachii*
table to S18—9(3)	200	F2021L00671 1 June 2021 FSC141 3 June 2021	3 June 2021	ad	β-Amylase (EC 3.2.1.2) sourced from soybean (*Glycine max*)
S18—9(3)	200	F2021L00684 2 June 2021 FSC141 3 June 2021	3 June 2021	rep	Omit (EC 2.4.1.17) whenever occuring
table to S18—9(3)	201	F2021L00984 14 July 2021 FSC142 22 July 2021	22 July 2021	ad	Subtilisin (EC 3.4.21.62) sourced from *Bacillus licheniformis* containing the gene for subtilisin from *Pyrococcus furiosus*
Table to S18—9(3)	202	F2021L01181 24 August 2021 FSC143 26 August 2021	26 August 2021	ad	Maltogenic α-amylase, protein engineered variant, (EC 3.2.1.133) sourced from *Saccharomyces cerevisiae* containing the gene from *Geobacillus stearothermophilus*.
Note to Table to S18—9(3)	202	F2021L01181 24 August 2021 FSC143 26 August 2021	26 August 2021	ad	Note included on enzyme sources and related standards.
Table to S18—9(3)	203	F2021L01436 14 October 2021 FSC 144 21 October 2021	21 October 2021	ad	β-Galactosidase (EC 3.2.1.23) sourced from *Bacillus subtilis* containing the β-galactosidase gene from *Lactobacillus delbrueckii* subsp. *bulgaricus*
Table to S18—9(3)	205	F2022L00039 18 January 2022 FSC 146 20 January 2022	20 January 2022	ad	Maltogenic α-amylase (EC 3.2.1.133) sourced from *Bacillus licheniformis* containing the gene for maltogenic α-amylase from *Geobacillus stearothermophilus*.
Table to S18—4(5)	208	F2022L00722 27 May 2022 FSC 148 20 June 2022	1 June 2022	rep	β-Fructofuranosidase (EC 3.2.1.26)
Table to S18—9(3)	208	F2022L00723 27 May 2022 FSC 148 1 June 2022	1June 2022	ad	Maltogenic α-Amylase (EC 3.2.1.133) sourced from *Escherichia coli* containing the maltogenic α-Amylase gene from *Geobacillus stearothermophilus*

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S18—11	211	F2022L01125 26 August 2022 FSC151 1 September 2022	1 September 2022	ad	Cetylpyridinium chloride as an anti-microbial agent
Table to S18—9 (3)	213	F2022L01385 24 October 2022 FSC153 27 October 2022	27 October 2022	ad	Thermomycolin (EC 3.4.21.65) sourced from *Trichoderma reesei* containing the thermomycolin gene from *Malbranchea cinnamomea*
Table to S18—9 (3)	213	F2022L01400 26 October 2022 FSC153 27 October 2022	27 October 2022	ad	Chymosin (EC 3.4.23.4) sourced from *Trichoderma reesei* containing the chymosin gene from *Bos taurus*
Table to S18—9 (3)	214	F2022L01590 8 December 2022 FSC154 8 December 2022	8 December 2022	ad	Polygalacturonase (EC 3.2.1.15) sourced from *Aspergillus oryzae* containing the polygalacturonase gene from *Aspergillus tubingensis*
Table to S18—9 (3)	214	F2022L01593 8 December 2022 FSC154 8 December 2022	8 December 2022	ad	Pectinesterase (EC 3.1.1.11) sourced from *Aspergillus oryzae* containing the pectinesterase gene from *Aspergillus tubingensis*
Table to S18—9 (3)	214	F2022L01592 8 December 2022 FSC154 8 December 2022	8 December 2022	ad	Phospholipase A_1 (EC 3.1.1.32) sourced from *Aspergillus oryzae* containing the phospholipase A_1 gene from *Valsaria rubricosa*
Table to S18—9 (3)	214	F2022L01588 8 December 2022 FSC154 8 December 2022	8 December 2022	ad	Glucoamylase, protein engineered variant, (EC 3.2.1.3) sourced from *Aspergillus niger* containing the glucoamylase gene from *Gloeophyllum trabeum*
S18—9(3)	214	F2022L01588 8 December 2022 FSC154 8 December 2022	8 December 2022	ad	Insert, Glucoamylase, protein engineered variant; to note after table.
S18—9(3)	215	F2023L00031 11 January 2023 FSC155 16 January 2023	16 January 2023	ad	α-Amylase (EC 3.2.1.1) sourced from *Bacillus licheniformis* containing the α-amylase gene from *Cytophaga* species
S18—9(3)	216	F2023L00186 2 March 2023 FSC156 2 March 2023	2 March 2023	ad	β-Amylase (EC 3.2.1.2) sourced from *Bacillus licheniformis* containing the β-amylase gene from *Priestia flexa* (basionym *Bacillus flexus*)
S18—9(3)	216	F2023L00143 24 Feb 2023 FSC156 2 March 2023	2 March 2023	ad	Phospholipase A1 (EC 3.1.1.32) sourced from *Aspergillus niger* containing the phospholipase A1 gene from *Evansstolkia leycettana* (basionym *Talaromyces leycettanus*)

Section affected	A'ment No.	FRL registration Gazette	Commencement (Cessation)	How affected	Description of amendment
S18—9(3)	216	F2023L00147 24 Feb 2023 FSC156 2 March 2023	2 March 2023	ad	Glucose oxidase (EC 1.1.3.4) sourced from *Penicillium rubens*
S18—9(3)	217	F2023L00449 18 April 2023 FSC157 21 April 2023	21 April 2023	ad	Glucoamylase, protein engineered variant, (EC 3.2.1.3) sourced from *Aspergillus niger* containing the glucoamylase gene from *Penicillium oxalicum*
S18—9(3)	219	F2023L00565 23 May 2023 FSC159 26 May 2023	26 May 2023	ad	α-Amylase (EC 3.2.1.1) sourced from *Bacillus subtilis* containing the α-amylase gene from *Thermoactinomyces vulgaris*
S18—9(4)2	220	F2023L01004 11 July 2023 FSC160 19 July 2023	19 July 2023	rs	Repeal and substitute note 3
Table to S18—9(3)	220	F2023L01004 11 July 2023 FSC160 19 July 2023	19 July 2023	rs	Repeal and substitute column 2 in Table
S18—9(3	221	F2023L01124 29 August 2023 FSC161 1 September 2023	1 September 2023	ad	α-Arabinofuranosidase (EC 3.2.1.55) sourced from *Trichoderma reesei* containing the αarabinofuranosidase gene from *Talaromyces pinophilus*
S18—9(3)	221	F2023L01120 28 August 2023 FSC161 1 September 2023	1 September 2023	ad	Endo-1,4-beta-xylanase (EC 3.2.1.8) sourced from *Trichoderma reesei* containing the endo-1,4-beta-xylanase gene from *Talaromyces leycettanus*
S18—9(3)	221	F2023L01121 28 August 2023 FSC161 1 September 2023	1 September 2023	ad	Carboxypeptidase (EC 3.4.16.6) sourced from *Aspergillus oryzae* containing the carboxypeptidase gene from *Aspergillus oryzae*
S18—9(3)	222	F2023L01402 20 October 2023 FSC162 30 October 2023	30 October 2023	rs	Repeal and substitute S18-9(3) entry for α-Glucosidase (EC 3.2.1.20) sourced from *Trichoderma reesei* containing the α glucosidase gene from *Aspergillus niger*