

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)
<i>Technological purpose—Antifoam agent</i>	
Butanol	10
Oxystearin	GMP
Polydimethylsiloxane	10
Polyethylene glycol dioleate	GMP
Polyethylene/ polypropylene glycol copolymers	GMP
Soap	GMP
Sorbitan monolaurate	1
Sorbitan monooleate	1
<i>Technological purpose—Catalyst</i>	
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
<i>Technological purpose—decolourants, clarifying, filtration and adsorbent agents</i>	
Acid clays of montmorillonite	GMP
Chloromethylated aminated styrene-divinylbenzene resin	GMP
Co-extruded polystyrene and polyvinyl pyrrolidone	GMP
Copper sulphate	GMP
Dimethylamine-epichlorohydrin copolymer	150
Dimethyldialkylammonium chloride	GMP
<i>Technological purpose—decolourants, clarifying, filtration and adsorbent agents</i>	
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

Substance	Maximum permitted level (mg/kg)
Nylon	GMP
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
<i>Technological purpose—desiccating preparation</i>	
Aluminium sulphate	GMP
Ethyl esters of fatty acids	GMP
Short chain triglycerides	GMP
<i>Technological purpose—ion exchange resin</i>	
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

Substance	Maximum permitted level (mg/kg)
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
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
<i>Technological purpose—lubricant, release and anti-stick agent</i>	
Acetylated mono- and diglycerides	100
Mineral oil based greases	GMP
Thermally oxidised soya-bean oil	320
White mineral oil	GMP
<i>Technological purpose—carrier, solvent, diluent</i>	
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:
- Glycerophospholipid cholesterol acyltransferase, protein engineered variant;
 - Lipase, triacylglycerol, protein engineered variant;
 - Maltotetrahydrolase, 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 (<i>Ipomoea batatas</i>) Malted cereals
Actinidin (EC 3.4.22.14)	Kiwifruit (<i>Actinidia deliciosa</i>)
Ficin (EC 3.4.22.3)	<i>Ficus</i> spp.
Fruit bromelain (EC 3.4.22.33)	Pineapple fruit (<i>Ananas comosus</i>)
Papain (EC 3.4.22.2)	<i>Carica papaya</i>
Stem bromelain (EC 3.4.22.32)	Pineapple stem (<i>Ananas comosus</i>)

- (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)	<i>Bacillus amyloliquefaciens</i> <i>Bacillus subtilis</i> <i>Bacillus subtilis</i> , containing the gene for α-Acetolactate decarboxylase isolated from <i>Bacillus brevis</i>
Aminopeptidase (EC 3.4.11.1)	<i>Aspergillus oryzae</i> <i>Lactococcus lactis</i>

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

Enzyme	Source
Endo-1,4-beta-xylanase, protein engineered variant (EC 3.2.1.8)	<i>Bacillus licheniformis</i> , containing the gene for Endo-1,4-beta-xylanase isolated from <i>Bacillus licheniformis</i>
Endo-arabinase (EC 3.2.1.99)	<i>Aspergillus niger</i>
Endo-protease (EC 3.4.21.26)	<i>Aspergillus niger</i>
β -Fructofuranosidase (EC 3.2.1.26)	<i>Aspergillus niger</i> <i>Saccharomyces cerevisiae</i>
α -Galactosidase (EC 3.2.1.22)	<i>Aspergillus niger</i>
β -Galactosidase (EC 3.2.1.23)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Bacillus circulans</i> ATCC 31382 <i>Bacillus licheniformis</i> , containing the gene for β -Galactosidase isolated from <i>Bifidobacterium bifidum</i> <i>Kluyveromyces marxianus</i> <i>Kluyveromyces lactis</i>
Glucan 1,3- β -glucosidase (EC 3.2.1.58)	<i>Trichoderma harzianum</i>
β -Glucanase (EC 3.2.1.6)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Bacillus amyloliquefaciens</i> <i>Bacillus subtilis</i> <i>Disporotrichum dimorphosporum</i> <i>Humicola insolens</i> <i>Talaromyces emersonii</i> <i>Trichoderma reesei</i>
Glucoamylase (EC 3.2.1.3)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Rhizopus delemar</i> <i>Rhizopus oryzae</i> <i>Rhizopus niveus</i>
Glucose oxidase (EC 1.1.3.4)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> , containing the gene for glucose oxidase isolated from <i>Aspergillus niger</i>
α -Glucosidase (EC 3.2.1.20)	<i>Aspergillus oryzae</i> <i>Aspergillus niger</i>
β -Glucosidase (EC 3.2.1.21)	<i>Aspergillus niger</i>
Glutaminase (EC 3.5.1.2)	<i>Bacillus amyloliquefaciens</i>
Glycerophospholipid cholesterol acyltransferase, protein engineered variant (EC 2.3.1.43)	<i>Bacillus licheniformis</i> , containing the gene for glycerophospholipid cholesterol acyltransferase isolated from <i>Aeromonas salmonicida</i> subsp. <i>salmonicida</i>
Hemicellulase endo-1,3- β -xylanase (EC 3.2.1.32)	<i>Humicola insolens</i>
Hemicellulase multicomponent enzyme (EC 3.2.1.78)	<i>Aspergillus niger</i> <i>Bacillus amyloliquefaciens</i> <i>Bacillus subtilis</i> <i>Trichoderma reesei</i>
Hexose oxidase (EC 1.1.3.5)	<i>Hansenula polymorpha</i> , containing the gene for Hexose oxidase isolated from <i>Chondrus crispus</i>

Enzyme	Source
Inulinase (EC 3.2.1.7)	<i>Aspergillus niger</i>
Lipase, monoacylglycerol (EC 3.1.1.23)	<i>Penicillium camembertii</i>
Lipase, triacylglycerol (EC 3.1.1.3)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> <i>Aspergillus oryzae</i> , containing the gene for Lipase, triacylglycerol isolated from <i>Fusarium oxysporum</i> <i>Aspergillus oryzae</i> , containing the gene for Lipase, triacylglycerol isolated from <i>Humicola lanuginosa</i> <i>Aspergillus oryzae</i> , containing the gene for Lipase, triacylglycerol isolated from <i>Rhizomucor miehei</i> <i>Candida rugosa</i> <i>Hansenula polymorpha</i> , containing the gene for Lipase, triacylglycerol isolated from <i>Fusarium heterosporum</i> <i>Mucor javanicus</i> <i>Penicillium roquefortii</i> <i>Rhizopus arrhizus</i> <i>Rhizomucor miehei</i> <i>Rhizopus niveus</i> <i>Rhizopus oryzae</i>
Lipase, triacylglycerol, protein engineered variant (EC 3.1.1.3)	<i>Aspergillus niger</i> , containing the gene for lipase, triacylglycerol isolated from <i>Fusarium culmorum</i>
Lysophospholipase (EC 3.1.1.5)	<i>Aspergillus niger</i>
Maltogenic α -amylase (EC 3.2.1.133)	<i>Bacillus subtilis</i> containing the gene for maltogenic α -amylase isolated from <i>Geobacillus stearothermophilus</i>
Maltotetrahydrolase, protein engineered variant (EC 3.2.1.60)	<i>Bacillus licheniformis</i> , containing the gene for maltotetrahydrolase isolated from <i>Pseudomonas stutzeri</i>
Metalloproteinase	<i>Aspergillus oryzae</i> <i>Bacillus amyloliquefaciens</i> <i>Bacillus coagulans</i> <i>Bacillus subtilis</i>
Mucorpepsin (EC 3.4.23.23)	<i>Aspergillus oryzae</i> <i>Aspergillus oryzae</i> , containing the gene for Aspartic proteinase isolated from <i>Rhizomucor meihei</i> <i>Rhizomucor meihei</i> <i>Cryphonectria parasitica</i>
Oryzin (EC 3.4.21.63)	<i>Aspergillus melleus</i>
Pectin lyase (EC 4.2.2.10)	<i>Aspergillus niger</i>
Pectinesterase (EC 3.1.1.11)	<i>Aspergillus niger</i> <i>Aspergillus oryzae</i> , containing the gene for pectinesterase isolated from <i>Aspergillus aculeatus</i>
Phospholipase A ₁ (EC 3.1.1.32)	<i>Aspergillus oryzae</i> , containing the gene for phospholipase A ₁ isolated from <i>Fusarium venenatum</i>
Phospholipase A ₂ (EC 3.1.1.4)	<i>Aspergillus niger</i> , containing the gene isolated from porcine pancreas <i>Streptomyces violaceoruber</i>
3-Phytase (EC 3.1.3.8)	<i>Aspergillus niger</i>
4-Phytase (EC 3.1.3.26)	<i>Aspergillus oryzae</i> , containing the gene for 4-phytase isolated from <i>Peniophora lycii</i>

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

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

nitric acid	sodium molybdate
pantothenic acid	sodium tetraborate
peptone	thiamin
phytates	threonine
polyvinylpyrrolidone	uracil
pyridoxine hydrochloride	xanthine
riboflavin	zinc chloride
sodium formate	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
Methyl acrylate-divinylbenzene copolymer containing not less than 2% divinylbenzene aminolysed with dimethylaminopropylamine	GMP
Methacrylic acid-divinylbenzene copolymer	GMP

Substance	Maximum permitted level (mg/kg)
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
Diethyl ether	All foods	2
Dimethyl ether	All foods	2

Substance	Food	Maximum permitted level (mg/kg)
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	Maximum permitted and food level (mg/kg)
Amine agarose ion exchange resin	Removal of specific proteins and polyphenols from beer	GMP

Substance	Technological purpose	Maximum permitted and food level (mg/kg)
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
Aqualysin 1 (EC 3.4.21.111) sourced from <i>Bacillus subtilis</i> containing the aqualysin 1 gene from <i>Thermus aquaticus</i>	For use in the manufacture of bakery products	GMP
Butanol	Suspension agent for sugar crystals	10
Carbonic acid	Bleached tripe washing agent	GMP
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 <i>Aspergillus niger</i>	Manufacture of wine, beer, cider, spirits and food grade ethanol	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
L-Cysteine (or HCl salt)	Dough conditioner	75
Endo-1,4-beta-xylanase (EC 3.2.1.8) from <i>Bacillus subtilis</i> , containing the gene for Endo-1,4-beta-xylanase isolated from <i>Pseudoalteromonas haloplanktis</i> .	For use in the manufacture of bakery and other cereal-based products.	GMP
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
Gluteral	Manufacture of edible collagen casings	GMP
Hydrogen peroxide	Control of lactic acid producing 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	5
	Inhibiting agent for dried vine fruits, fruit and vegetable juices, sugar, vinegar and yeast autolysate	5
	Removal of glucose from egg	5

Substance	Technological purpose	Maximum permitted and food level (mg/kg)
	Removal of sulphur dioxide	5
1-Hydroxyethylidene-1, 1-diphosphonic acid	Metal sequestrant for use with anti-microbial 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
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 <i>Candida cylindracea</i>	For use in the manufacture of bakery products and dairy products and in the processing of fats and oils.	GMP
<i>Listeria</i> phage P100	Listericidal treatment for use on approved food for use of phage	GMP
Morpholine	Solubilising agent for coating mixtures on fruits	GMP
Oak	For use in the manufacture of wine	GMP
Octanoic acid	Anti-microbial agent for meat, fruit and vegetables	GMP
Paraffin	Coatings for cheese and cheese products	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 glutaminase (EC 3.5.1.44) sourced from <i>Chryseobacterium proteolyticum</i> 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
<i>Salmonella</i> phage preparation (S16 and FO1a)	Reduce population of <i>Salmonella</i> 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

Substance	Technological purpose	Maximum permitted and food level (mg/kg)
Sodium bromate	Germination control in malting	Limit of determination of bromate
Sodium chlorite	Anti-microbial 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
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
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
Woodflour from untreated <i>Pinus radiata</i>	Gripping agent used in the treatment of hides	GMP

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;	

<i>Food</i>	<i>Maximum permitted addition level</i>
(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	

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. 9 of Schedule 18 as in force on **3 May 2018** (up to Amendment No. 178). It includes any commenced amendment affecting the compilation to that date.

Prepared by Food Standards Australia New Zealand on **3 May 2018**.

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 <i>Salmonella</i> 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 <i>Bacillus subtilis</i> , containing the gene for Endo-1,4-beta-xylanase isolated from <i>Pseudoalteromonas haloplanktis</i>
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 <i>Candida cylindracea</i>
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 <i>Bacillus subtilis</i> containing the aqualysin 1 gene from <i>Thermus aquaticus</i>
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 <i>Chryseobacterium proteolyticum</i> strain AE-PG