Commission Implementing Regulation (EU) 2018/1023 of 23 July 2018 correcting Implementing Regulation (EU) 2017/2470 establishing the Union list of novel foods (Text with EEA relevance)

## COMMISSION IMPLEMENTING REGULATION (EU) 2018/1023

of 23 July 2018

correcting Implementing Regulation (EU) 2017/2470 establishing the Union list of novel foods

(Text with EEA relevance)

# THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2015/2283 of the European Parliament and of the Council on novel foods, amending Regulation (EU) No 1169/2011 of the European Parliament and of the Council and repealing Regulation (EC) No 258/97 of the European Parliament and of the Council and Commission Regulation (EC) No 1852/2001<sup>(1)</sup>, and in particular Article 8 thereof,

#### Whereas:

- (1) Pursuant to Article 8 of Regulation (EU) 2015/2283, the Commission is to establish, by 1 January 2018, the Union list of novel foods authorised or notified under Regulation (EC) No 258/97 of the European Parliament and of the Council<sup>(2)</sup>.
- (2) The Union list of novel foods authorised or notified under Regulation (EC) No 258/97 was established by Commission Implementing Regulation (EU) 2017/2470<sup>(3)</sup>.
- (3) Pursuant to Article 36 of Regulation (EU) 2015/2283, the new novel food Regulation applies from 1 January 2018. A number of products were authorised or notified under Regulation (EC) No 258/97 during the period between the Standing Committee vote on the Union list on 6 December 2017 and the date of application of Regulation (EU) 2015/2283 on 1 January 2018. These products should therefore be included in the Union list established through Implementing Regulation (EU) 2017/2470.
- (4) On 19 December 2017, the company Demethra Biotech S.r.l. notified the Commission that it placed the novel food '*Echinacea purpurea* extract from cell cultures' on the Union market pursuant to Article 5 of Regulation (EC) No 258/97. This novel food was not included in the Union list. Therefore, a new entry should be added to Tables 1 and 2 of the Annex to Implementing Regulation (EU) 2017/2470.
- (5) On 21 and 22 December 2017, two companies, DuPont Nutrition & Biosciences ApS and FrieslandCampina Nederland BV, notified the Commission that they placed the novel food '2'-Fucosyllactose (microbial source)' on the Union market pursuant to Article 5 of Regulation (EC) No 258/97. '2'-Fucosyllactose (microbial source)' was already included in the Annex to Implementing Regulation (EU) 2017/2470. Those new notifications modify the numerical values of several parameters listed in the

- specifications of this novel food and therefore, the entry '2'-Fucosyllactose (microbial source)' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 should be corrected accordingly.
- (6) On 20 December 2017, the company c-LEcta GmbH notified the Commission that it placed the novel food 'Trehalose' on the Union market pursuant to Article 5 of Regulation (EC) No 258/97. 'Trehalose' was included in the Annex to Implementing Regulation (EU) 2017/2470. That new notification concerns a new source of trehalose, sucrose. Therefore, the specifications of the entry 'Trehalose' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 should be corrected accordingly.
- (7) After the publication of Implementing Regulation (EU) 2017/2470, a number of errors or omissions were noted concerning the specifications or the conditions of use of a number of authorised novel foods. Therefore, the Union list established in the Annex to Implementing Regulation (EU) 2017/2470 should be corrected.
- (8) The novel food 'L-Alanyl-L-Glutamine' was authorised under certain conditions of use pursuant to Article 5 of Regulation (EC) No 258/97. The category 'Drinks intended to meet the expenditure of intense muscular effort especially for sportsmen' was erroneously omitted. Therefore, a correction adding 'Drinks intended to meet the expenditure of intense muscular effort especially for sportsmen' as allowed food category in the entry 'L-Alanyl-L-Glutamine' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (9) The novel food 'Glucosamine HCl' was authorised under certain conditions of use pursuant to Article 5 of Regulation (EC) No 258/97. The food category 'Milk-based drinks and similar products intended for young children' was added erroneously and should be deleted from this entry. A correction in the entry 'Glucosamine HCl' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is therefore necessary.
- (10) The novel food 'Lacto-*N*-neotetraose' was authorised under certain conditions of use and maximum levels by Commission Implementing Decision (EU) 2016/375<sup>(4)</sup>. The wording 'at concentrations up to 1,2 g/l' was added erroneously and should be removed from the food category 'Milk-based drinks and similar products intended for young children' for this novel food. Therefore, a correction of the entry 'Lacto-*N*-neotetraose' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (11) The novel food 'Spermidine-rich wheat germ extract (*Triticum aestivum*)' was authorised under certain conditions of use for 'adult population excluding pregnant and lactating women' pursuant to Article 5 of Regulation (EC) No 258/97. However, the exclusion of pregnant and lactating women erroneously did not feature in the Union list. In consequence, the correction of the entry 'Spermidine-rich wheat germ extract (*Triticum aestivum*)' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (12) The novel food 'Antarctic Krill oil from *Euphausia superba*' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 erroneously omitted the following requirement, which should be added: 'Oxidative stability: all food products containing Antarctic Krill oil from *Euphausia superba* should demonstrate oxidative stability

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- by appropriate and recognised national/international test methodology (e.g. AOAC)'. Therefore, a correction of this entry in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (13) The novel food 'Antarctic Krill oil rich in phospholipids from *Euphausia superba*' was authorised under certain conditions of use by the Finnish competent authorities<sup>(5)</sup>. The specifications erroneously added the following requirement: 'Oxidative stability: all food products containing Antarctic Krill oil rich in phospholipids from *Euphausia superba* should demonstrate oxidative stability by appropriate and recognised national/international test methodology (e.g. AOAC)'. This requirement should be removed. Therefore, a correction of the entry 'Antarctic Krill oil rich in phospholipids from *Euphausia superba*' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (14) The novel food 'Chia seeds (*Salvia hispanica*)' was initially authorised under certain conditions of use by Commission Decision 2009/827/EC<sup>(6)</sup>. The specifications erroneously added the following requirement: '(EU: carbohydrates are available = sugar + starch)'. This requirement should be removed. Therefore, a correction of the entry 'Chia seeds (*Salvia hispanica*)' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (15) The novel food 'Chitosan extract from fungi (*Agaricus bisporus*; *Aspergillus niger*)' was initially authorised under certain conditions of use pursuant to Article 5 of Regulation (EC) No 258/97. The specifications erroneously added the following requirement: 'Fat binding capacity 800 x 9 w/wet weight): pass'. This requirement should be replaced by 'Fat binding capacity 800 x (w/w wet weight): pass'. Therefore, a correction of the entry 'Chitosan extract from fungi (*Agaricus bisporus*; *Aspergillus niger*)' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (16) The novel food 'Citicoline' was authorised under certain conditions of use by Commission Implementing Decision 2014/423/EU<sup>(7)</sup>. In Table 2 of the Annex to Implementing Regulation (EU) 2017/2470, the specifications of the novel food 'Citicoline' refer to citicoline produced via either a synthetic or a microbial process. After the publication of that Regulation, it became clear that microbial process for the production of citicoline, also involved synthetic process. Thus, the specifications concerning 'Citicoline' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 should be corrected to include only the microbial production process.
- (17) The novel food 'Echinacea angustifolia extract from cell cultures' was initially authorised under certain conditions of use pursuant to Article 5 of Regulation (EC) No 258/97. The specifications erroneously omitted the wording 'description/definition'. Therefore, a correction of the entry 'Echinacea angustifolia extract from cell cultures' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (18) The novel food 'Galacto-oligosaccharide' is included in the Union list established by Implementing Regulation (EU) 2017/2470. The following microbial sources *Pichia pastoris*, *Kluyveromyces lactis*, *Sporobolomyces singularis* and *Papiliotrema terrestris* of the enzyme 'β-galactosidase' were erroneously omitted in the specifications.

- Therefore, these sources of  $\beta$ -galactosidase should be added to the entry 'Galacto-oligosaccharide' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470.
- (19) The novel food 'Vitamin K<sub>2</sub> (menaquinone)' was initially authorised under certain conditions of use by Commission Decision 2009/345/EC<sup>(8)</sup>. The chemical definition of Vitamin K<sub>2</sub> was added to 'specifications of microbiologically produced vitamin K<sub>2</sub> (menaquinone-7)' but erroneously not added to 'specifications of synthetic vitamin K<sub>2</sub> (menaquinone-7)'. Therefore, a correction of the entry 'Vitamin K<sub>2</sub> (menaquinone)' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (20) The novel food 'Yeast beta-glucans' was authorised under certain conditions of use by Commission Implementing Decision 2011/762/EU<sup>(9)</sup>. In the specifications, 'Microbiological data' and 'heavy metals' erroneously refer to the three forms of Yeast beta-glucans instead of to the form 'Insoluble in water but dispersible in many liquid matrices'. Therefore, a correction of the entry 'Yeast beta-glucans' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (21) The novel food 'Phytosterols/phytostanols' was authorised under certain conditions of use by Commission Decision 2004/333/EC<sup>(10)</sup>. On 14 April 2016, the company BASF SE Human Nutrition, ENS/HR notified the Commission that it placed the novel food 'Phytosterols/phytostanols' on the Union market in the category 'Food supplement' pursuant to Article 5 of Regulation (EC) No 258/97. The category 'Food supplement' was erroneously omitted. Therefore, a correction adding 'Food supplement' as allowed food category in the entry 'Phytosterols/phytostanols' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (22) The novel food 'Arachidonic acid-rich oil from the fungus *Mortierella alpina*' was authorised under certain conditions of use by Commission Decision 2008/968/EC<sup>(11)</sup>. The following non-genetically modified strain 'CBS 210.32' of the fungus *Mortierella alpina* was erroneously not included in the specifications. Therefore, this strain should be added to the entry 'Arachidonic acid-rich oil from the fungus *Mortierella alpina*' in Table 2 of the Annex to Implementing Regulation (EU) 2017/2470.
- (23) The novel food 'Epigallocatechin gallate as a purified extract from green tea leaves (*Camellia sinensis*)' was initially authorised under certain conditions of use pursuant to Article 5 of Regulation (EC) No 258/97. The food category 'Foods fortified in accordance with Regulation (EC) No 1925/2006' was added erroneously and should be deleted from this entry. Furthermore, a correction adding 'Foods' to 'food supplements as defined in Directive 2002/46/EC' as the allowed food category in the entry 'Epigallocatechin gallate as a purified extract from green tea leaves (*Camellia sinensis*)' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.
- (24) The novel food 'Lycopene from tomatoes' was authorised under certain conditions of use pursuant to Article 5 of Regulation (EC) No 258/97. The food category 'Food supplement' was omitted erroneously and should be added to this entry. Therefore, a correction adding 'Food supplement' as allowed food category in the entry 'Lycopene from tomatoes' in Table 1 of the Annex to Implementing Regulation (EU) 2017/2470 is necessary.

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- (25) In addition, after the publication of Implementing Regulation (EU) 2017/2470, several typographical errors have been identified in the Annex. While such typographic errors are usually corrected by a corrigendum, for the sake of clarity for economic operators and enforcement authorities, the correction of those typographical errors should be included in this correcting act.
- (26) Given the number of corrections, it is appropriate to replace the whole Annex to Implementing Regulation (EU) 2017/2470.
- (27) The measures provided for in this Regulation are in accordance with the opinion of the Standing Committee on Plants, Animals, Food and Feed,

### HAS ADOPTED THIS REGULATION:

Article 1

The Annex to Implementing Regulation (EU) 2017/2470 is replaced by the Annex to this Regulation.

Article 2

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 23 July 2018.

For the Commission

The President

Jean-Claude JUNCKER

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### **ANNEX**

# UNION LIST OF NOVEL FOODS

### Content of the list

1. The Union list shall consist of Tables 1 and 2.

2. Table 1 includes the authorised novel foods and contains the following information:

Column 1 : Authorised novel food

Column 2 : Conditions under which the novel food may be used. This column is

further subdivided into two: Specified food category and Maximum

levels

Column 3 : Additional specific labelling requirements

Column 4 : Other requirements

3. Table 2 includes the specifications on novel foods and contains the following

information:

Column 1 : Authorised novel food

Column 2 : Specifications

TABLE 1: AUTHORISED NOVEL FOODS

Authorised novel food	Conditions undo novel food may		Additional Other specific requirem labelling requirements		sed specific require	
N-Acetyl-D-neuraminic acid	Specified food category  Infant and follow-on formulae as defined by Regulation (EU) No 609/2013 <sup>a</sup> Processed cereal-based foods and baby foods for infants and young children as defined by Regulation (EU) No 609/2013	Maximum levels  0,05 g/L of reconstituted formula  0,05 g/kg for solid foods	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'N-acetyl-D-neuraminic acid' Food supplements containing N-acetyl-D-neuraminic acid shall bear a statement that the food supplement should not be			
	Foods for special medical purposes for infants and young children as defined by Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the infants and young children for whom the	given to infants, young children and children under 10 years of age where they consume breast milk or other foods with			

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	products are intended but in any case not higher than the maximum levels specified for the category mentioned in the table corresponding to the products.	a E a si h
Total diet replacement foods for weight control as defined by Regulation (EU) No 609/2013	0,2 g/L (drinks) 1,7 g/kg (bars)	
Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014 <sup>b</sup>	1,25 g/kg	
Unflavoured pasteurised and sterilised (including UHT) milk-based products	0,05 g/L	
Unflavoured fermented milk- based products, heat treated after fermentation, flavoured fermented milk products including heat- treated products	0,05 g/L (beverages) 0,4 g/kg (solids)	
Dairy analogues, including beverage whiteners	0,05 g/L (beverages) 0,25 g/kg (solids)	

idded N-acetyl-D-neuraminic cid within the same twenty four nour period.

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	Cereal bars	0,5 g/kg		
	Table top sweeteners	8,3 g/kg		
	Fruit and vegetable-based drinks	0,05 g/L		
	Flavoured drinks	0,05 g/L		
	Speciality coffee, tea, herbal and fruit infusions, chicory; tea, herbal and fruit infusions and chicory extracts; tea, plant, fruit and cereal preparations for infusions	0,2 g/kg		
	Food Supplements as defined in Directive 2002/46/EC°	300 mg/day for general population older than 10 years 55 mg/day for infants 130 mg/day for young children 250 mg/day for children between 3 to 10 years of age		
Adansonia digitata (Baobab) dried fruit pulp	Not specified		The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Baobab fruit pulp'	
Ajuga reptans	Specified food	Maximum levels		
extract from cell cultures	category	10,000	_	
cen cultures	Food Supplements as defined in Directive 2002/46/EC	In line with normal use in food supplements of a similar extract of the flowering		

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L-Alanyl-L- Glutamine	Specified food category	Maximum levels		
Giutamine	Food Supplements as defined in Directive 2002/46/EC			
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013 excluding foods for infants and young children			
	Drinks intended to meet the expenditure of intense muscular effort especially for sportsmen			
Algal oil from the microalgae	Specified food category	Maximum levels of DHA	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Oil from the micro-	
Ulkenia sp.	Bakery products (breads, rolls and sweet biscuits)	200 mg/100 g		
	Cereal bars	500 mg/100 g		
	Non-alcoholic beverages (including milk based beverages)	60 mg/100 ml	algae <i>Ulkenia</i> sp.'	
Allanblackia seed oil	Specified food category	Maximum levels	The designation of the novel food	
	Yellow fat spreads and cream based spreads	20 g/100 g	on the labelling of the foodstuffs containing it shall be 'Allanblackia seed oil'	
Aloe macroclada Baker leaf	Specified food category	Maximum levels		
extract	Food Supplements as defined in Directive 2002/46/EC	In line with normal use in food supplements of the similar gel derived <i>from</i>		

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		Aloe vera (L.) Burm.	
Antarctic Krill oil from Euphausia superba	Specified food category	Maximum levels of combined DHA and EPA	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Lipid extract from the crustacean Antarctic Krill (Euphausia superba)'
	Dairy products except milk- based drinks	200 mg/100 g or for cheese products 600 mg/100 g	
	Dairy analogues except drinks	200 mg/100 g or for analogues to cheese products 600 mg/100 g	
	Non-alcoholic beverages Milk-based drinks Dairy analogue drinks	80 mg/100 ml	
	Spreadable fat and dressings	600 mg/100 g	
	Cooking fats	360 mg/100 ml	
	Breakfast cereals	500 mg/100 g	
	Bakery products (breads, rolls and sweet biscuits)	200 mg/100 g	
	Nutrition bars/ cereal bars	500 mg/100 g	
	Food Supplements as defined in Directive 2002/46/EC	3 000 mg/day for the general population 450 mg/day for pregnant and lactating women	
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended	
	Total diet replacement for weight control	250 mg/meal	

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	as defined in Regulation (EU) No 609/2013 and meal replacements for weight control  Processed cereal-based food and baby food intended for infants and young children covered by Regulation (EU) No 609/2013	200 mg/100 ml		
	Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen			
	Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014			
Antarctic Krill oil rich in phospholipids from <i>Euphausia</i>	Specified food category	Maximum levels of combined DHA and EPA	The designation of the novel food on the labelling of the foodstuffs	
superba	Dairy products except milk- based drinks	200 mg/100 g or for cheese products 600 mg/100 g	containing it shall be 'Lipid extract from the crustacean	
	Dairy analogues except drinks	200 mg/100 g or for analogues to cheese products 600 mg/100 g	Antarctic Krill (Euphausia superba)'	
	Non-alcoholic beverages Milk-based drinks	80 mg/100 ml		

Dairy analogue drinks	
Spreadable fat and dressings	600 mg/100 g
Cooking fats	360 mg/100 ml
Breakfast cereals	500 mg/100 g
Bakery products (breads, rolls and sweet biscuits)	200 mg/100 g
Nutrition bars/ cereal bars	500 mg/100 g
Food Supplements as defined in Directive 2002/46/EC	3 000 mg/day for the general population 450 mg/day for pregnant and lactating women
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended
Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	250 mg/meal
Processed cereal-based food and baby food intended for infants and young children covered by Regulation (EU) No 609/2013  Foods intended to meet the expenditure of	200 mg/100 ml

	intense muscular effort, especially for sportsmen  Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014			
Arachidonic acid-rich oil	Specified food category	Maximum levels	The designation of the novel food	
from the fungus Mortierella alpina	Infant formula and follow- on formula as defined in Regulation (EU) No 609/2013	In accordance with Regulation (EU) No 609/2013	on the labelling of the foodstuffs containing it shall be 'Oil from Mortierella alpina' or	
	Foods for special medical purposes for premature infants as defined in Regulation (EU) No 609/2013	In accordance with Regulation (EU) No 609/2013	'Mortierella alpina oil'	
Argan oil from Argania spinosa	Specified food category	Maximum levels	The designation of the novel food	
<b>G</b> 1	As seasonings	Not specified	on the labelling	
	Food Supplements as defined in Directive 2002/46/EC	In line with normal food use of vegetable oils	of the foodstuffs containing it shall be 'Argan oil' and if used as seasoning 'Vegetable oil only for seasoning' shall be mentioned on the label	
Astaxanthin- rich oleoresin	Specified food category	Maximum levels	The designation	
from  Haematococcus  pluvialis algae	Food Supplements as defined in Directive 2002/46/EC	40-80 mg/day of oleoresin, resulting in ≤ 8 mg	of the novel food on the labelling of the foodstuffs containing it shall be 'Astaxanthin'	

		astaxanthin per day		
Basil seeds (Ocimum	Specified food category	Maximum levels		
basilicum)	Fruit juice and fruit/vegetable blend beverages	3 g/200 ml for addition of whole basil seeds ( <i>Ocimum</i> basilicum)		
Fermented black bean	Specified food category	Maximum levels	The designation of the novel food	
extract	Food Supplements as defined in Directive 2002/46/EC	4,5 g/day	on the labelling of the foodstuffs containing it shall be 'Fermented black bean (Soya) extract' or 'Fermented Soya extract'	
Bovine lactoferrin	Specified food category	Maximum levels	The designation of the novel food	
lactorerin	Infant formula and follow- on formula as defined in Regulation (EU) No 609/2013 (ready to drink)	100 mg/100 ml	on the labelling of the foodstuffs containing it shall be 'Lactoferrin from cows' milk'	
	Foods on dairy basis intended for young children (ready to eat/drink)	200 mg/100 g		
	Processed cereal food (solid)	670 mg/100 g		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	Depending on the needs of the individual up to 3 g/day		
	Beverages based on milk	200 mg/100 g		
	Powdered drink mixes based on milk (ready to drink)	330 mg/100 g		

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	Beverages based on fermented milk (including yoghurt drinks)	50 mg/100 g		
	Non-alcoholic drinks	120 mg/100 g		
	Products based on yoghurt	80 mg/100 g		
	Products based on cheese	2 000 mg/100 g		
	Ice cream	130 mg/100 g		
	Cakes and pastries	1 000 mg/100 g		
	Candies	750 mg/100 g		
	Chewing gum	3 000 mg/100 g		
Buglossoides arvensis seed oil	Specified food category	Maximum levels of stearidonic acid (STA)	The designation of the novel food on the labelling of the foodstuffs	
	Dairy products	250 mg/100 g	containing it	
	and analogues	75 mg/100 g for drinks	shall be 'Refined Buglossoides oil'	
	Cheese and cheese products	750 mg/100 g		
	Butter and other fat and oil emulsions including spreads (not for cooking or frying purposes)	750 mg/100 g		
	Breakfast cereals	625 mg/100 g		
	Food supplements as defined in Directive 2002/46/EC, excluding food supplements for infants and young children	500 mg/day		
	Foods for special medical purposes as defined in	In accordance with the particular nutritional		

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	Regulation (EU) No 609/2013, excluding foods for special medical purposes intended for infants and young children	requirements of the persons for whom the products are intended		
	Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	250 mg/meal		
Calanus finmarchicus oil	Specified food category	Maximum levels	The designation of the novel food	
jumurenicus on	Food supplements as defined in Directive 2002/46/EC	2,3 g/day	on the labelling of the foodstuffs containing it shall be 'oil from <i>Calanus finmarchicus</i> (crustacean)'	
Chewing gum base	Specified food category	Maximum levels	The designation of the novel food	
(monomethoxypo glycol)	<b>Vallwileg</b> gum	8 %	on the labelling of the foodstuffs containing it shall be 'Gum base (including 1,3-butadiene, 2-methyl-homopolymer, maleated, esters with polyethylene glycol mono-Me ether)' or 'Gum base (including CAS No: 1246080-53-4)'	
Chewing gum base (Methyl vinyl ether-maleic anhydride copolymer)	Specified food category Chewing gum	Maximum levels 2 %	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Gum	

			base (including methyl vinyl ether-maleic anhydride copolymer)' or 'Gum base (including CAS No 9011-16-9)'	
Chia oil from Salvia hispanica	Specified food category  Fats and oils  Pure chia oil  Food Supplements as defined in Directive 2002/46/EC	Maximum levels 10 % 2 g/day 2 g/day	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Chia oil (Salvia hispanica)'	
Chia seeds (Salvia hispanica)	Specified food category  Bread products  Baked products  Breakfast cereals  Fruit, nut and seed mixes  Fruit juice and fruit/vegetable blend beverages  Pre-packaged Chia seed as such  Fruit spreads  Yoghurt	Maximum levels  5 % (whole or ground chia seeds)  10 % whole chia seeds  10 % whole chia seeds  10 % whole chia seeds  15 g/day for addition of whole, mashed or ground chia seeds  15 g/day whole chia seeds  1 % whole chia seeds  1,3 g whole chia seeds  1,3 g whole chia seeds per 100 g of yoghurt or 4,3 g whole chia seeds per 330 g of yoghurt (portion)	1. The designate of the novel food on the labelling of the foodstuff containing it shall be 'Chia seeds (Salvia hispanic) 2. Prepackage Chia (Salvia hispanic) seeds shall carry additional labelling to inform the consume that the daily	fs ng a)' d al

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Chitin- glucan from	Sterilised ready to eat meals based on cereal grains, pseudocereals grains and/or pulses  Specified food category	5 % whole chia seeds  Maximum levels	more than 15 g.  The designation of the novel food	
Aspergillus niger	Food Supplements as defined in Directive 2002/46/EC	5 g/day	on the labelling of the foodstuffs containing it shall be 'Chitinglucan from Aspergillus niger'	
Chitin-glucan complex from Fomes fomentarius	Food Supplements as defined in Directive 2002/46/EC	Maximum levels 5 g/day	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Chitin-glucan from Fomes fomentarius'	
Chitosan extract from fungi (Agaricus bisporus; Aspergillus niger)	Specified food category Food Supplements as defined in Directive 2002/46/EC	Maximum levels In line with normal use in food supplements of chitosan from crustaceans	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Chitosan extract from Agaricus bisporus' or 'Chitosan extract from Aspergillus niger'	
Chondroitin sulphate	Food supplements as defined in Directive 2002/46/EC for adult population, excluding pregnant and lactating women	Maximum levels 1 200 mg/day	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Chondroitin sulphate derived from microbial fermentation and sulphation'	

Chromium Picolinate	Specified food category	Maximum levels of total chromium	The designation of the novel food on the labelling
	by Regulation (EU) No 609/2013  containing it shall be 'Chromium	it shall be 'Chromium	
	Foods fortified in accordance with Regulation (EC) No 1925/2006 <sup>d</sup>		Picolinate'
Cistus incanus L. Pandalis	Specified food category	Maximum levels	The designation of the novel food
herb	Herbal infusions	Intended daily intake: 3 g herbs/ day (2 cups/day)	on the labelling of the foodstuffs containing it shall be 'Cistus incanus L. Pandalis herb'
Citicoline	Specified food category	Maximum levels	1. The designation
	Food Supplements as defined in Directive 2002/46/EC	500 mg/day	of the novel food on the labelling
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	250 mg per serving and a maximum daily consumption level of 1 000 mg	of the foodstuffs containing it shall be 'Citicoline'  2. The labelling of foods containing citicoline shall bear a statement that the product is not intended to be consumed by children

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Clostridium butyricum	Specified food category	Maximum levels	The designation of the novel food	
	Food Supplements as defined in Directive 2002/46/EC	1,35 × 10 <sup>8</sup> CFU/ day	on the labelling of the foodstuffs containing it shall be 'Clostridium butyricum MIYAIRI 588 (CBM 588)' or 'Clostridium butyricum (CBM 588)'	
Extract of defatted cocoa	Specified food category	Maximum levels	Consumers shall be instructed not	
powder	Nutrition bars	1 g/day and	to consume more	
	Milk based beverages	300 mg polyphenols corresponding	than 600 mg polyphenols corresponding to	
	Any other foods (including food supplements as defined in Directive 2002/46/ EC) which have become established vehicles for functional ingredients and which are typically positioned for consumption by health conscious adults	to not more than 550 mg of extract of defatted cocoa powder in one portion of food (or food supplement)	1,1 g of extract of defatted cocoa powder per day	
Low fat cocoa extract	Specified food category	Maximum levels	Consumers shall be instructed not	
	Foods including food supplements as defined in Directive 2002/46/EC	730 mg per serving and around 1,2 g/day	to consume more than 600 mg of cocoa flavanols per day	
Coriander	Specified food	Maximum	The designation	
seed oil from Coriandrum sativum	Food Supplements as defined	levels 600 mg/day	of the novel food on the labelling of the foodstuffs containing it shall be	

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	in Directive 2002/46/EC		'Coriander seed oil'		
Crataegus pinnatifida	Specified food category	Maximum levels	The designation of the novel food		
dried fruit	Herbal infusions	In line with	on the labelling		
	Jams and jellies in accordance with Directive 2001/113/EC <sup>e</sup>	normal food use of <i>Crataegus</i> <i>laevigata</i>	of the foodstuffs containing it shall be 'Crataegus pinnatifida dried		
	Compotes		fruit'		
α-cyclodextrin	Not specified		The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Alphacyclodextrin' or 'α-cyclodextrin'		
γ-cyclodextrin	Not specified		The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Gamma-Cyclodextrin' or 'γ-Cyclodextrin'		
Dextran preparation produced by Leuconostoc mesenteroides	Specified food category	Maximum levels	The designation of the novel food		
	Bakery products	5 %	on the labelling of the foodstuffs containing it shall be 'Dextran'		
Diacylglycerol oil of plant	Specified food category	Maximum levels	The designation of the novel food		
origin	Cooking oils		on the labelling		
	Fat spreads		of the foodstuffs containing		
	Salad dressings		it shall be		
	Mayonnaise		'Diacylglycerol oil of plant		
	Meal replacement for weight control (as drinks)		origin (at least 80 % diacylglycerols)'		
	Bakery products				

	Yoghurt type products				
Dihydrocapsiate (DHC)	Specified food category	Maximum levels	1.	The designati	on
(2110)	Cereal bars	9 mg/100 g		of the	
	Biscuits, cookies and crackers	9 mg/100 g	novel food on the labelling of the foodstufficontainin it shall be 'Dihydro		
	Rice based snacks	12 mg/100 g		20	
	Carbonated drinks, dilutable drinks, fruit juice based beverages	1,5 mg/100 ml		ng ocapsiate'	
	Vegetable drinks	2 mg/100 ml			
	Coffee based drinks, tea based drinks	1,5 mg/100 ml		suppleme containing synthetic dihydroc	ng
	Flavoured water — still	ured 1 mg/100 ml will be			
	Precooked oatmeal cereal	2,5 mg/100 g	5 mg/100 g intended for		
Other cereals 4,5 mg/100 g		children up to			
	Ice cream, dairy desserts	4 mg/100 g		4.5 years'	
	Pudding mixes (ready to eat)	2 mg/100 g			
	Products based on yoghurt	2 mg/100 g			
	Chocolate confectionery	7,5 mg/100 g			
	Hard candy	27 mg/100 g			
	Sugar-free gum	115 mg/100 g			
	Whitener/ creamer	40 mg/100 g			
	Sweeteners	200 mg/100 g			
	Soup (ready to eat)	1,1 mg/100 g			
	Salad dressing	16 mg/100 g			
	Vegetable protein	5 mg/100 g			

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	Ready to eat meals	3 mg/meal		
	Meal replacements for weight control	3 mg/meal		
	Meal replacement for weight control (as drinks)	1 mg/100 ml		
	Food Supplements as defined in Directive 2002/46/EC	3 mg/single intake 9 mg/day		
	Non-alcoholic powdered drink mixes	14,5 mg/kg equivalent to 1,5 mg/100 ml		
Dried extract of Lippia citriodora	Specified food category	Maximum levels	The designation of the novel food	
from cell cultures	Food Supplements as defined in Directive 2002/46/EC	In line with normal use in food supplements of a similar extract from the leaves of <i>Lippia citriodora</i>	on the labelling of the foodstuffs containing it shall be 'dried extract of <i>Lippia citriodora</i> from cell cultures HTN®Vb'	
Echinacea angustifolia	Specified food category	Maximum levels		
extract from cell cultures	Food Supplements as defined in Directive 2002/46/EC	In line with normal use in food supplements of a similar extract from the root of Echinacea angustifolia		
Echinacea purpurea extract from cell cultures	Specified food category	Maximum levels	The designation of the novel food	
	Food Supplements as defined in Directive 2002/46/EC	In line with normal use in food supplements of a similar extract from florets within the flower head	on the labelling of the foodstuffs containing it shall be 'dried extract of <i>Echinacea purpurea</i> from cell cultures HTN®Vb'	

		of Echinacea purpurea		
Echium plantagineum oil	Specified food category	Maximum levels of stearidonic acid (STA)	The designation of the novel food on the labelling of the foodstuffs	
	Milk-based products and drinkable yoghurt products delivered in a single dose	250 mg/100 g; 75 mg/100 g for drinks	containing it shall be 'Refined echium oil'	
	Cheese preparations	750 mg/100 g		
	Spreadable fat and dressings	750 mg/100 g		
	Breakfast cereals	625 mg/100 g	1	
	Food supplements as defined in Directive 2002/46/EC	500 mg/day		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended		
	Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	250 mg/meal		
Epigallocatechin gallate as a	Specified food category	Maximum levels	The labelling shall bear a	
purified extract from green tea leaves (Camellia sinensis)	Foods including food supplements as defined in Directive 2002/46/EC	150 mg of extract in one portion of food or food supplement	statement that consumers should not consume more than 300 mg of extract per day	

	G	1.6	T	
L-ergothioneine	Specified food category	Maximum levels	The designation of the novel food	
	Food supplements as defined in Directive 2002/46/EC	30 mg/day for general population (excluding pregnant and lactating women) 20 mg/day for children older than 3 years	on the labelling of the foodstuffs containing it shall be 'L- ergothioneine'	
Ferric Sodium EDTA	Specified food category	Maximum levels (expressed as anhydrous EDTA)	The designation of the novel food on the labelling of the foodstuffs containing it	
	Food supplements as defined in Directive 2002/46/EC	18 mg/day for children 75 mg/day for adults	shall be 'Ferric Sodium EDTA'	
	Foods covered by Regulation (EU) No 609/2013	12 mg/100 g		
	Foods fortified in accordance with Regulation (EC) No 1925/2006			
Ferrous ammonium	Specified food category	Maximum levels	The designation of the novel food	
phosphate	Food supplements as defined in Directive 2002/46/EC	To be used in compliance with Directive 2002/46/EC, Regulation (EU) No 609/2013 and/or Regulation (EC) No 1925/2006	on the labelling of the foodstuffs containing it shall be 'Ferrous ammonium phosphate'	
	Foods covered by Regulation (EU) No 609/2013			
	Foods fortified in accordance with Regulation (EC) No 1925/2006			

Fish peptides from Sardinops sagax	Foods based on yoghurt, yoghurt drinks, fermented milk products, and	Maximum levels fish peptide product  0,48 g/100 g (ready to eat/ drink)	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Fish (Sardinops sagax) peptides'	
	powdered milk Flavoured water, and vegetable- based drinks	0,3 g/100 g (ready to drink)		
	Breakfast cereals	2 g/100 g		
	Soups, stews and soup powders	0,3 g/100 g (ready to eat)		
Flavonoids from Glycyrrhiza glabra	category levels of designation of the flavoroids from novel be p Glycyrrhiza food to the	Beverages containing flavonoids shall be presented to the final consumer as		
	Beverages based on milk	120 mg/day	labelling of the foodstuf	single portions.
	Beverages based on yoghurt		containir it shall	ing oids <i>hiza</i>
	Beverages based on fruit or vegetables		be 'Flavono from	
	Food Supplements as defined in Directive 2002/46/EC	120 mg/day	Glycyrrh glabra L.'  2. The labelling of the foods where the product was added	
	Total diet replacement for weight control as defined in Regulation (EU) No 609/2013	120 mg/day		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	120 mg/day	as a novel food ingredier shall bear a statemen that:	

		(a)	the product should not be consumed by pregnant and breast feeding women, children and young adolescents; and
		(b) (c)	and people taking prescription drugs should only consume the product under medical supervision; a
		(c)	a maximum of 120 mg of flavonoids per day should be consumed.
	3.	The amount of flavonoic in the final food shall be indicated on the labelling of the food	ds

			containing it.
Fucoidan extract from the	Specified food category	Maximum levels	The designation of the novel food
seaweed Fucus vesiculosus	Foods including food supplements as defined in Directive 2002/46/EC for the general population	250 mg/day	on the labelling of the foodstuffs containing it shall be 'Fucoidan extract from seaweed Fucus vesiculosus'.
Fucoidan	Specified food	Maximum	The designation
extract from	category	levels	of the novel food
the seaweed Undaria pinnatifida	Foods including food supplements as defined in Directive 2002/46/EC for the general population	250 mg/day	on the labelling of the foodstuffs containing it shall be 'Fucoidan extract from seaweed Undaria pinnatifida'
2'- Fucosyllactose	Specified food category	Maximum levels	1. The designation
,,	Unflavoured pasteurised and sterilised (including UHT) milk-based products	1,2 g/l	of the novel food on the labelling of the foodstuffs
	Unflavoured	1,2 g/l beverages	containing
	fermented milk- based products	19,2 g/kg products other than beverages	it shall be '2'- fucosyllactose'. 2. The
	Flavoured fermented milk-	1,2 g/l beverages	labelling
	based products including heat-treated products	19,2 g/kg products other than beverages	of food supplements containing 2'-
	Dairy analogues,	1,2 g/l beverages	fucosyllactose shall
	including beverage whiteners	12 g/kg for products other than beverages	bear a statement that the
		400 g/kg for whitener	supplements should not be
	Cereal bars	12 g/kg	used if other

Table-top	200 g/kg	foods
sweeteners	200 B/ NB	with
Infant formula as defined in Regulation (EU) No 609/2013	1,2 g/l alone or in combination with up to 0,6 g/l of lacto- <i>N</i> -neotetraose at a ratio of 2:1 in the final product ready for use, marketed as such or reconstituted as instructed by the manufacturer	added 2'- fucosyllactose are consumed the same day. 3. The labelling of food supplements containing
Follow-on formula as defined in Regulation (EU) No 609/2013	1,2 g/l alone or in combination with up to 0,6 g/l of lacto-N-neotetraose at a ratio of 2:1 in the final product ready for use, marketed as such or reconstituted as instructed by the manufacturer	fucosyllactose intended for young children shall bear a statement that the supplements should not be
Processed cereal-based food and baby food for infants and young children as defined in Regulation (EU) No 609/2013	12 g/kg for products other than beverages 1,2 g/l for liquid food ready for use, marketed as such or reconstituted as instructed by the manufacturer	used if breast milk or other foods with added 2'- fucosyllactose are consumed
Milk-based drinks and similar products intended for young children	1,2 g/l for milk-based drinks and similar products added alone or in combination with up to 0,6 g/l lacto- <i>N</i> -neotetraose, at a ratio of 2:1 in the final product ready for use, marketed as such or reconstituted	the same day.

	as instructed by the manufacturer
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended
Total diet	4,8 g/l for drinks
replacement for weight control as defined in Regulation (EU) No 609/2013	40 g/kg for bars
Bread and pasta products bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014	60 g/kg
Flavoured drinks	1,2 g/l
Coffee, tea (excluding black tea), herbal and fruit infusions, chicory; tea, herbal and fruit infusions and chicory extracts; tea, plant, fruit and cereal preparations for infusions, as well as mixes and instant mixes of these products	9,6 g/l — the maximum level refers to the products ready to use
Food supplements as defined in Directive	3,0 g/day for general population

	2002/46/EC, excluding food supplements for infants	1,2 g/day for young children	
Galacto- oligosaccharide	Specified food category	Maximum levels (expressed as ratio kg galacto- oligosaccharide/ kg final food)	
	Food Supplements as defined in Directive 2002/46/EC	0,333	
	Milk	0,02	
	Milk drinks	0,03	
	Meal replacement for weight control (as drinks)	0,02	
	Dairy analogue drinks	0,02	
	Yoghurt	0,033	
	Dairy based deserts	0,043	
	Frozen dairy deserts	0,043	
	Fruit drinks and energy drinks	0,021	
	Infant meal replacement drinks	0,012	
	Baby juice	0,025	
	Baby yogurt drink	0,024	
	Baby desert	0,027	
	Baby snack	0,143	
	Baby cereals	0,027	
	Drinks intended to meet the expenditure of	0,013	

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	intense muscular effort especially for sportsmen		
	Juice	0,021	
	Fruit pie fillings	0,059	
	Fruit preparations	0,125	
	Bars	0,125	
	Cereals	0,125	
	Infant formula and follow- on formula as defined in Regulation (EU) No 609/2013	0,008	
Glucosamine HCl	Specified food category	Maximum levels	
	Food Supplements as defined in Directive 2002/46/EC	In line with normal food use of glucosamine from shell fish	
	Foods covered by Regulation (EU) No 609/2013		
	Meal replacement for weight control		
	Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen		
	Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing		

	Regulation (EU)				
	No 828/2014				
Glucosamine	Specified food category	Maximum levels			
sulphate KCl	Food Supplements as defined in Directive 2002/46/EC	In line with normal food use of glucosamine from shell fish			
Glucosamine sulphate NaCl	Specified food category	Maximum levels			
•	Food Supplements as defined in Directive 2002/46/EC	In line with normal food use of glucosamine from shell fish			
Guar Gum	Specified food category	Maximum levels	1.	The designat	ion
	Fresh dairy products such as yogurts, fermented milks, fresh cheeses and other dairy- based desserts.	1,5 g/100 g	of the novel food on the labelling of the foodstuffs	fs	
	Fruit or vegetable-based liquid foodstuffs (of the 'smoothie' variety)  1,8 g/100 g  1,8 g/100 g  it shall be 'Guar Gum'.  2. A specific	it shall be 'Guar Gum'. A specific	ıg		
	Fruit or vegetable-based compotes	3,25 g/100 g	mention of the possible risks of digestive discomfe linked to the exposure of children aged under 8 to guar gum must be visible on the label		
	Cereals accompanied by a dairy product, in packaging containing two compartments	10 g/100 g in the cereals None in the accompanying dairy product 1 g/100 g in the product when ready to eat		digestive discomfol linked to the exposure of children aged under 8 to guar gum must be visible on the	ort

3.	of any foodstuffs containing it.  For example, 'Excessive consumption of these products may cause digestive discomfort, especially for children under 8 years of age'. In the case of products with two compartments containing dairy and cereal products respectively, the instructions for use must clearly specify the need to mix the cereal and the dairy product before consumption, in order to take into account the potential
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Heat-treated milk products fermented with Bacteroides xylanisolvens	Specified food category  Fermented milk products (in liquid, semiliquid and spraydried powder forms)	Maximum levels	risk of gastro-intestinal obstruction.
Hydroxytyrosol	Fish and vegetable oils, (except olive oils and olive pomace oils as defined in Part VIII of Annex VII of Regulation (EU) No 1308/2013 <sup>f</sup> ), placed as such on the market	Maximum levels 0,215 g/kg	The designation of the novel food on the labelling of the food products containing it shall be 'hydroxytyrosol'. The labelling of the food products containing hydroxytyrosol shall bear the following statements:
	fats as defined in Part VII of Annex VII of Regulation (EU) No 1308/2013, placed as such on the market	5,5	(a) This food product should not be consumed by children under the age of three years, pregnant women, and lactating women;  (b) This food product should not be used for

Ice Structuring Protein type III HPLC 12	Specified food category  Edible ices	Maximum levels 0,01 %	cooking, baking or frying'  The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Ice Structuring Protein'	
Aqueous extracts of dried leaves of Hex guayusa	Specified food category Herbal infusions Food Supplements as defined in Directive 2002/46/EC	Maximum levels In line with normal use in herbal infusions and food supplements of a similar aqueous extract of dried leaves of Ilex paraguariensis	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Extracts of dried leaves of <i>Ilex guayusa</i> '	
Isomalto- oligosaccharide	Energy-Reduced Soft Drinks Energy Drinks Foods intended to meet the expenditure of intense muscular efforts, especially for sportsmen (including isotonic drinks)	Maximum levels 6,5 % 5,0 % 6,5 %	1. The designat of the novel food on the labelling of the foodstuf containing it shall be 'Isomalt' 2. Foods containing the	fs ng ooligosaccharide'.
	Processed Vegetables and Vegetable Juices Other Soft Drinks	5 % 5 % 5 %	novel ingredier must be labelled as 'a source	
	Cereals Bars Cookies, Biscuits	10 %	of glucose'	•

			1	
	Breakfast Cereal Bars	25 %		
	Hard Candies	97 %		
	Soft Candies/ Chocolate Bars	25 %		
	Meal replacement for weight control (as bars or milk based)	20 %		
Isomaltulose	Not specified		2. The design of the novel food on the labelli shall to accome by indicate that the	auffs ning l altulose'. nation ing ne npanied tion ne altulose e
Lactitol	Specified food	Maximum	The designation	
	category	levels	of the novel for	od
	Food Supplements as defined in Directive 2002/46/EC	20 g/day	on the labelling of the food supplements containing it shall be	
	(capsules or		'Lactitol'	
	( <b>r</b>	I	I	I

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Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

Lacto-N-neotetraose	tablets) intended for the adult population  Specified food category  Unflavoured pasteurised and sterilised (including UHT) milk-based products	Maximum levels 0,6 g/l		The designation of the novel food on the labelling of the
	Unflavoured fermented milk-based products	0,6 g/l for beverages 9,6 g/kg for products other than beverages		foodstuffs containing it shall be 'lacto-N-neotetraose'.
	Flavoured fermented milk- based products including heat- treated products	0,6 g/l for beverages 9,6 g/kg for products other than beverages	2. The labelling of food supplem containi lacto-N-neotetra shall bear a statement that the supplem	The labelling of food supplements containing
	Dairy analogues, including beverage whiteners	0,6 g/l for beverages 6 g/kg for products other than beverages 200 g/kg for whitener		neotetraose shall bear a statement
	Cereal bars	6 g/kg		not be
	Table-top sweeteners	100 g/kg	are consume the same day. 3. The labelling of food suppleme containin lacto-N-	other foods
	Infant formula as defined in Regulation (EU) No 609/2013	0,6 g/l in combination with up to 1,2 g/l of 2'-fucosyllactose at a ratio of 1:2 in the final product ready for use, marketed as such or reconstituted as instructed by the manufacturer		added lacto-N- neotetraose are consumed the same day. The labelling
	Follow-on formula as defined in Regulation (EU) No 609/2013	0,6 g/l in combination with up to 1,2 g/l of 2'-fucosyllactose at		containing lacto- <i>N</i> -neotetraose intended

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	a ratio of 1:2 in the final product ready for use, marketed as such or reconstituted as instructed by the manufacturer
Processed cereal-based food and baby food for infants and young children as defined in Regulation (EU) No 609/2013	6 g/kg for products other than beverages 0,6 g/l for liquid food ready for use, marketed as such or reconstituted as instructed by the manufacturer
Milk-based drinks and similar products intended for young children	0,6 g/l for milk-based drinks and similar products added alone or in combination with 2'-fucosyllactose, at a ratio of 1:2 in the final product ready for use, marketed as such or reconstituted as instructed by the manufacturer
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended
Total diet replacement for weight control as defined in Regulation (EU) No 609/2013	2,4 g/l for drinks 20 g/kg for bars
Bread and pasta products bearing statements on the absence or	30 g/kg

young children shall bear a statement that the supplements should not be used if breast milk or other foods with added lacto-Nneotetraose are consumed the same day.

Lucerne leaf extract from Medicago sativa	Specified food category Food supplements as defined	Maximum levels 10 g/day	The designation of the novel food on the labelling of the foodstuffs containing it	
	Food supplements as defined in Directive 2002/46/EC, excluding food supplements for	1,5 g/day for general population 0,6 g/day for young children		
	accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014  Flavoured drinks  Coffee, tea (excluding black tea), herbal and fruit infusions, chicory; tea, herbal and fruit infusions and chicory extracts; tea, plant, fruit and cereal preparations for infusions, as well as mixes and instant mixes of these products	0,6 g/l 4,8 g/l — the maximum level refers to the products ready to use		

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	Drinks intended to meet the expenditure of intense muscular effort especially for sportsmen	2,5 mg/100 g	it shall be 'Lycopene'	
	Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	8 mg/meal		
	Breakfast cereals	5 mg/100 g		
	Fats and dressings	10 mg/100 g		
	Soups other than tomato soups	1 mg/100 g		
	Bread (including crispy breads)	3 mg/100 g		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended		
	Food supplements as defined in Directive 2002/46/EC	15 mg/day		
Lycopene from <i>Blakeslea</i>	Specified food category	Maximum levels	The designation of the novel food	
trispora	Fruit/vegetable juice-based drinks (including concentrates)	2,5 mg/100 g	on the labelling of the foodstuffs containing it shall be	
	Drinks intended to meet the expenditure of intense muscular	2,5 mg/100 g	'Lycopene'	

Lycopene tomatoes

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	effort especially for sportsmen  Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control  Breakfast cereals  Fats and	8 mg/meal 5 mg/100 g 10 mg/100 g		
	dressings  Soups other than tomato soups	1 mg/100 g		
	Bread (including crispy breads)	3 mg/100 g		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended		
	Food supplements as defined in Directive 2002/46/EC	15 mg/day		
from	Specified food category	Maximum levels	The designation of the novel food	
	Fruit/vegetable juice-based drinks (including concentrates)	2,5 mg/100 g	on the labelling of the foodstuffs containing it shall be	
	Drinks intended to meet the expenditure of intense muscular effort especially for sportsmen	2,5 mg/100 g	'Lycopene'	
	Total diet replacement for weight control	8 mg/meal		

	as defined in		]	
	Regulation (EU) No 609/2013 and meal replacements for weight control			
	Breakfast cereals	5 mg/100 g		
	Fats and dressings	10 mg/100 g		
	Soups other than tomato soups	1 mg/100 g		
	Bread (including crispy breads)	3 mg/100 g		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended		
	Food supplements as defined in Directive 2002/46/EC	15 mg/day		
Lycopene oleoresin from tomatoes	Specified food category	Maximum levels of lycopene	The designation of the novel food on the labelling	
	Fruit/vegetable juice-based drinks (including concentrates)	2,5 mg/100 g	of the foodstuffs containing it shall be 'Lycopene	
	Drinks intended to meet the expenditure of intense muscular effort especially for sportsmen	2,5 mg/100 g	oleoresin from tomatoes'	
	Total diet replacement for weight control covered by	8 mg/meal		

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	replacements for weight control			
	Breakfast cereals	5 mg/100 g		
	Fats and dressings	10 mg/100 g		
	Soups other than tomato soups	1 mg/100 g		
	Bread (including crispy breads)	3 mg/100 g		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended		
Magnesium citrate malate	Specified food category	Maximum levels	The designation of the novel food	
	Food Supplements as defined in Directive 2002/46/EC		on the labelling of the foodstuffs containing it shall be 'Magnesium citrate malate'	
Magnolia Bark Extract	Specified food category	Maximum levels	The designation of the novel food	
	Mints (confectionary products)  Chewing gum	0,2 % for breath freshening purposes. Based on a 0,2 % maximum incorporation level and a maximum gum/mint size of 1,5 g each, each gum or mint serving will contain no more than 3 mg of magnolia bark extract.	on the labelling of the foodstuffs containing it shall be 'Magnolia Bark Extract'	
Maize-germ oil high in	Specified food category	Maximum levels	The designation of the novel food	
unsaponifiable matter	Food Supplements	2 g/day	on the labelling of the foodstuffs	

	as defined in Directive 2002/46/EC Chewing gum	2 %	containing it shall be 'Maize- germ oil extract'	
Methylcellulose	Specified food	Maximum	The designation	Methylcellulose
	<i>category</i> Edible ices	levels	of the novel food on the labelling of the foodstuffs containing it shall be 'Methylcellulose'	is not to be used in foods
	Flavoured drinks	2 /0		specially
	Flavoured or unflavoured fermented milk products			prepared for young children
	Cold desserts (dairy, fat, fruit, cereal, egg-based products)			
	Fruit preparations (pulps, purees or compotes)			
	Soups and broths			
(6S)-5- methyltetrahydro acid, glucosamine salt		Maximum levels	The designation of the novel food on the labelling of the foodstuffs containing it shall be '(6S)-5-methyltetrahydrof acid, glucosamine salt' or '5MTHF-glucosamine'	olie
	Food Supplements as defined in Directive 2002/46/EC as a source of folate			
Monomethylsilar (Organic Silicon)	category	Maximum levels of silicon	The designation of the novel food on the labelling	
,	Food Supplements as defined in Directive 2002/46/EC for	10,40 mg/day	of the food supplements containing it shall be	

	adult population (in liquid form)		'Organic silicon (monomethylsilanetriol)'
Mycelial extract from Shiitake mushroom	Specified food category	Maximum levels	The designation of the novel food
	Bread products	2 ml/100 g	on the labelling
(Lentinula edodes)	Soft drinks	0,5 ml/100 ml	of the foodstuffs containing
,	Ready prepared meals	2,5 ml per meal	it shall be 'extract from the mushroom
	Foods based on yoghurt	1,5 ml/100 ml	Lentinula edodes' or
	Food supplements as defined in Directive 2002/46/EC	2,5 ml per day dose	'extract from Shiitake mushroom'
Noni fruit juice ( <i>Morinda</i>	Specified food category	Maximum levels	The designation of the novel food
citrifolia)	Pasteurised fruit and fruit nectar based drinks	30 ml with one serving (up to 100 % noni juice) or 20 ml twice a day, not more than 40 ml per day	on the labelling of the foodstuffs containing it shall be 'Noni juice' or 'Juice of Morinda citrifolia'
Noni fruit juice powder (Morinda citrifolia)	Food supplements as defined in Directive 2002/46/EC	6,6 g/day (equivalent to 30 ml of noni juice)	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Noni juice powder' or 'Juice powder of <i>Morinda citrifolia</i> '
Noni fruit puree and concentrate	Specified food category	Maximum levels	The designation of the novel food
(Morinda		Fruit puree	on the labelling
citrifolia)	Candy/ confectionery	45 g/100 g	of the foodstuffs containing it shall be:
	Cereal bars	53 g/100 g	For fruit puree:
	Powdered nutritional drink mixes (dry weight)	53 g/100 g	'Morinda citrifolia fruit puree' or 'Noni fruit puree'

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Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

11 g/100 g
31 g/100 g
12 g/100 g
53 g/100 g
53 g/100 g
88 g/100 g
133 g/100 g Based on pre- processing quantity to produce final 100 g product
31 g/100 g
88 g/100 g
26 g/day
Fruit concentrate
10 g/100 g
12 g/100 g
12 g/100 g
3 g/100 g
7 g/100 g
3 g/100 g
12 g/100 g
12 g/100 g

For fruit concentrate: 'Morinda citrifolia fruit concentrate' or 'Noni fruit concentrate'

	Breakfast cereals (wholegrain)  Jams and jellies in accordance with Directive 2001/113/EC  Sweet spreads, fillings and icings  Savoury sauces, pickles, gravies and condiments	20 g/100 g 30 g/100 g 7 g/100 g 20 g/100 g		
	Food Supplements as defined in Directive 2002/46/EC	6 g/day		
Noni leaves (Morinda citrifolia)	Specified food category  For the preparation of infusions	Maximum levels  A cup of infusion to be consumed shall not be prepared with more than 1 g of dried and roasted leaves of Morinda citrifolia	<ol> <li>2.</li> </ol>	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Noni leaves' or 'leaves of Morinda citrifolia'. Instructions shall be given to the consumer that a cup of infusion should not be prepared with more than

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Noni fruit powder (Morinda citrifolia)	Specified food category Food Supplements as defined in Directive 2002/46/EC	Maximum levels 2,4 g per/day  Maximum	l g of dried and roasted leaves of Morinda citrifolia  The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Morinda citrifolia fruit powder' or 'Noni fruit powder'	
Odontella aurita microalgae	Specified food category	Maximum levels	The designation of the novel food	
<b>s</b>	Flavoured pasta	1,5 %	on the labelling	
	Fish soups	1 %	of the foodstuffs containing	
	Marine terrines	0,5 %	it shall be 'Odontella	
	Broth preparations	1 %	aurita microalgae'	
	Crackers	1,5 %		
	Frozen breaded fish	1,5 %		
Oil enriched with phytosterols/ phytostanols	Specified food category	Maximum levels of phytosterols/ phytostanols	In accordance with Annex III.5 to Regulation (EU) No	
	Spreadable fats as defined in Annex VII, Part VII and Appendix II, points B and C of Regulation (EU) No 1308/2013, and excluding cooking and frying fats and spreads based on butter or other animal fat	1. The products containing the novel food ingredier shall be presented in such a manner that they can be	ng nt	

Oil extracted from squids

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Salad mayo spicy	drinks d dressings, onnaise and v sauces	3.  Maximu	of phytoste phytosta added to a containe of beverage shall not exceed 3 g. Salad dressing mayonna and spicy sauces shall be packed as single portions	nols r es s, aise	
repla	ced by table fat or	2.	phytosta The amount	nols.	
production as production as production for milk yoghic chees production for the milk yoghic chees production for the milk yoghic context for t	based ucts, such oducts d on semi- med and med milk ucts, bly with the ion of fruits or cereals, ucts based rmented such as urt and se based ucts (fat ent ≤ 12 g 00 g), re possibly nilk fat has reduced he fat or in has been y or fully		easily divided into portions that contain either a maximum of 3 g (in case of one portion per day) or a maximum of 1 g (in case of three portions per day) of added phytoste	m m	

**Pasteurised** fruit-based

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	and EPA combined	on the labelling of the foodstuffs
Dairy products except milk- based beverages	200 mg/100 g or for cheese products 600 mg/100 g	containing it shall be 'Squid oil'.
Dairy analogues except drinks	200 mg/100 g or for analogues to cheese products 600 mg/100 g	
Spreadable fat and dressings	600 mg/100 g	
Breakfast cereals	500 mg/100 g	
Bakery products (breads and bread rolls)	200 mg/100 g	
Cereal bars	500 mg/100 g	
Non-alcoholic beverages (including milk- based beverages)	60 mg/100 ml	
Food Supplements as defined in Directive 2002/46/EC	3 000 mg/day for general population 450 mg/day for pregnant and lactating women	
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products intended	
Total diet replacement for weight control defined in Regulation (EU) No 609/2013 and meal replacements for weight control	200 mg/meal	
Specified food category	Maximum levels	The wording 'pasteurised by

preparations produced using high-pressure treatment	Types of fruit: apple, apricot, banana, blackberry, blueberry, cherry, coconut, fig, grape, grapefruit, mandarin, mango, melon, peach, pear, pineapple, prune, raspberry, rhubarb, strawberry		high-pressure treatment' shall be displayed next to the name of the fruit preparations as such and in any product in which it is used	
Phosphated maize starch	Specified food category	Maximum levels	The designation of the novel food	
maize starch	Baked bakery products Pasta Breakfast cereals Cereal bars	15 %	on the labelling of the foodstuffs containing it shall be 'Phosphated maize starch'	
Phosphatidylseri		Maximum	The designation	
from fish	category	levels of	of the novel food	
phospholipids	Beverages based on yoghurt	phosphatidylseri. 50 mg/100 ml	of the foodstuffs containing it	
	Powders based on milk powders	3 500 mg/100 g (equivalent to 40 mg/100 ml ready to drink)	shall be 'Fish phosphatidylserine'	,
	Foods based on yoghurt	80 mg/100 g		
	Cereal bars	350 mg/100 g		
	Chocolate based confectionary	200 mg/100 g		
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In compliance with Regulation (EU) No 609/2013		
	Food supplements as defined	300 mg/day		

	in Directive	I		
	2002/46/EC			
Phosphatidylseri from soya phospholipids	nSpecified food category	Maximum levels of phosphatidylseri	The designation of the novel food   of the labelling	
	Beverages based on yoghurt	50 mg/100 ml	of the foodstuffs containing it shall be 'Soya phosphatidylsering	
	Powders based on milk powder	3,5 g/100 g (equivalent to 40 mg/100 ml ready to drink)		e'
	Foods based on yoghurt	80 mg/100 g		
	Cereal bars	350 mg/100 g		
	Chocolate based confectionary	200 mg/100 g		
Phospholipid product	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In compliance with Regulation (EU) No 609/2013		
product	Specified food category	Maximum levels of phosphatidylseria	The designation of the novel food	The product is not intended to be marketed
product containing equal			of the novel food of the labelling of the foodstuffs	not intended to be marketed to pregnant or
product containing equal	category  Breakfast cereals	levels of phosphatidylseri	of the novel food  of the labelling of the foodstuffs containing	not intended to be marketed
product containing equal amounts of phosphatidylseri and phosphatidic	category  Breakfast cereals	levels of phosphatidylseria 80 mg/100 g	of the novel food  of the labelling of the foodstuffs containing shall be 'Soy phosphatidylsering and phosphatidic	not intended to be marketed to pregnant or breast-feeding women
product containing equal amounts of phosphatidylseri and	Category  Breakfast cereals  Cereal bars  Foods based on	levels of phosphatidylseria 80 mg/100 g 350 mg/100 g	of the novel food of the labelling of the foodstuffs containing shall be 'Soy phosphatidylsering	not intended to be marketed to pregnant or breast-feeding women
product containing equal amounts of phosphatidylseri and phosphatidic	Category  Breakfast cereals  Cereal bars  Foods based on yogurt  Soy-based yogurt-like	levels of phosphatidylseria 80 mg/100 g 350 mg/100 g 80 mg/100 g	of the novel food  of the labelling of the foodstuffs containing shall be 'Soy phosphatidylsering and phosphatidic	not intended to be marketed to pregnant or breast-feeding women
product containing equal amounts of phosphatidylseri and phosphatidic	Category  Breakfast cereals  Cereal bars  Foods based on yogurt  Soy-based yogurt-like products  Yogurt based-	levels of phosphatidylseria 80 mg/100 g 350 mg/100 g 80 mg/100 g 80 mg/100 g	of the novel food  of the labelling of the foodstuffs containing shall be 'Soy phosphatidylsering and phosphatidic	not intended to be marketed to pregnant or breast-feeding women
product containing equal amounts of phosphatidylseri and phosphatidic	Category  Breakfast cereals  Cereal bars  Foods based on yogurt  Soy-based yogurt-like products  Yogurt based-drinks  Soy-based yogurt-like	levels of phosphatidylseria 80 mg/100 g 350 mg/100 g 80 mg/100 g 80 mg/100 g	of the novel food  of the labelling of the foodstuffs containing shall be 'Soy phosphatidylsering and phosphatidic	not intended to be marketed to pregnant or breast-feeding women

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Phospholipides from egg yolk	in Directive 2002/46/EC Foods for special medical purposes as defined in Regulation (EU) No 609/2013  Specified food category	In compliance with Regulation (EU) No 609/2013  Maximum levels		
	Not specified			
Phytoglycogen	Specified food category	Maximum levels	The designation of the novel food	
	Processed foods	25 %	on the labelling of the foodstuffs containing it shall be 'Phytoglycogen'	
Phytosterols/ phytostanols	Specified food category	Maximum levels	In accordance with Annex III.5	
<b>P</b> -5 ************************************	Rice drinks	1 They	of Regulation	
	Rye bread with flour containing ≥ 50 % rye (wholemeal rye flour, whole or cracked rye kernels and rye flakes) and ≤ 30 % wheat; and with ≤ 4 % added sugar but no fat added.	presente in such a manner that they can be easily divided into portions that a contain	(EU) No 1169/2011 d	
	Salad dressings, mayonnaise and spicy sauces.			
	Soya drink	of 3 g		
	Milk type products, such as semi- skimmed and skimmed milk type products, possibly with the addition of fruits and/or cereals, where possibly the milk fat has	(in case of 1 portion/day) or a maximum of 1 g (in case of 3 portions/day) of added		

	been reduced, or where milk fat and/or protein has been partly or fully replaced by vegetable fat and/or protein.  Products based on fermented milk such as yoghurt and cheese type products (fat content < 12 % per 100 g), where possibly the milk fat has been reduced, or where milk fat and/or protein has been partly or fully replaced by vegetable fat and/or protein  Spreadable fats as defined in Annex VII, Part VII and Appendix II, points B and C of Regulation (EU) No 1308/2013, and excluding cooking and frying fats and spreads based on butter or other animal fat.  Food	phytosta The amount of phytosterols/ phytostanols added to a container of beverages shall not exceed 3 g. Salad dressings, mayonnaise and spicy sauces shall be packed as single portions	
	Food Supplements as defined in Directive 2002/46/EC	3 g/day	
Plum kernel oil	Specified food category  For frying and as seasoning	Maximum levels In line with normal food use of vegetable oils	

Potato proteins (coagulated) and hydrolysates thereof	Not specified		The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Potato protein'	
Prolyl oligopeptidase (enzyme preparation)	Specified food category  Food Supplements as defined in Directive 2002/46/EC for general adult population	Maximum levels  120 PPU/day (2,7 g of enzyme preparation/day) (2 × 10 <sup>6</sup> PPI/day) PPU – Prolyl Peptidase Units or Proline Protease Units PPI – Protease Picomole International	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Prolyl oligopeptidase'	
Protein extract from pig kidneys	Food Supplements as defined in Directive 2002/46/EC  Food for special medical purposes as defined in Regulation (EU) No 609/2013	Maximum levels  3 capsules/ day; equalizing 12,6 mg pig kidney extract a day Diamine oxidase (DAO) content: 0,9 mg/day (3 capsules with a content of DAO of 0,3 mg/ capsule)		
Rapeseed oil high in unsaponifiable matter	Specified food category Food Supplements as defined in Directive 2002/46/EC	Maximum levels 1,5 g per portion recommended for daily consumption	The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Rapeseed oil extract'	
Rapeseed Protein	As a vegetable protein source in foods except in infant formula and follow-on formula		1. The designat of the novel food on the labelling	

			2.	of the foodstuffs containing it shall be 'Rapeseed protein'. Any foodstuff containing 'rapeseed protein' shall bear a statement that this ingredient may cause allergic reaction to consumers who are allergic to mustard and products thereof. Where relevant, this statement shall appear in close proximity to the list of
Trans- resveratrol	Specified food category	Maximum levels	1.	The designation
icsvei au vi	Food Supplements as defined in Directive 2002/46/EC for adult population	150 mg/day		designation of the novel food on the labelling of the food

	(capsule or tablet form)		2.	supplements containing it shall be 'Trans- resveratrol'. The labelling of food supplements containing trans- resveratrol shall bear a statement that people using medicines should only consume the product under medical supervision.
Trans- resveratrol (microbial source)	Specified food category Food supplements as defined in Directive 2002/46/EC	Maximum levels  In line with normal use in food supplements of resveratrol extracted from Japanese knotweed (Fallopia japonica)	2.	The designation of the novel food on the labelling of the food supplements containing it shall be 'Trans-resveratrol'. The labelling of food supplements containing trans-resveratrol shall bear a

			statementhat people using medicine should only consume the product under medical supervisi	es
Rooster comb extract	Specified food category	Maximum levels	The designation of the novel food	
CAUACE	Milk-based drinks	40 mg/100 g or mg/100 ml	of the novel food on the labelling of the foodstuffs containing it shall be 'Rooster comb extract' or	
	Milk based fermented drinks	80 mg/100 g or mg/100 ml		
	Yoghurt-type products	65 mg/100 g or mg/100 ml	'Cockerel comb extract'	
	Fromage frais	110 mg/100 g or mg/100 ml		
Sacha inchi oil	Cnacified food	11.		
from <i>Plukenetia</i>	Specified food category	Maximum levels	The designation of the novel food	
			The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Sacha inchi oil (Plukenetia volubilis)'	
from <i>Plukenetia</i>	category	In line with normal food use	of the novel food on the labelling of the foodstuffs containing it shall be 'Sacha inchi oil (Plukenetia	ion

			2. There shall be a statement that excessive consumption may lead to gastro-intestinal disturbance. 3. There shall be a statement that the products are not intended for use by children.
Schizochytrium sp. oil rich in DHA and EPA	Specified food category	Maximum levels of DHA and EPA combined:	The designation of the novel food on the labelling of the foodstuffs
	Food Supplements as defined in Directive 2002/46/EC for adult population excluding pregnant and lactating women	3 000 mg/day	containing it shall be 'DHA and EPA-rich oil from the microalgae Schizochytrium sp.'
	Food Supplements as defined in Directive 2002/46/EC for pregnant and lactating women	450 mg/day	
	Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the	

	products are intended
Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	250 mg/meal
Milk-based drinks and similar products intended for young children	200 mg/100 g
Processed cereal based food and baby food for infants and young children as defined in Regulation (EU) No 609/2013	
Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen	
Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014	
Bakery Products (Breads, Rolls and Sweet Biscuits)	200 mg/100 g
Breakfast Cereals	500 mg/100 g
Cooking Fats	360 mg/100 g

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	Dairy Analogues except drinks  Dairy Products except milk-based drinks	600 mg/100 g for cheese; 200 mg/100 g for soy and imitation milk products (excluding drinks)  600 mg/100 g for cheese; 200 mg/100 g for milk products (including milk, fromage frais and yoghurt products; excluding drinks)		
	Non-alcoholic Beverages (including dairy analogue and milk-based drinks)	80 mg/100 g		
	Cereal/Nutrition Bars	500 mg/100 g		
	Spreadable Fats and Dressings	600 mg/100 g		
Schizochytrium sp. (ATCC	Specified food category	Maximum levels of DHA	The designation of the novel food	
PTA-9695) oil	Dairy products except milk- based drinks	200 mg/100 g or for cheese products 600 mg/100 g	on the labelling of the foodstuffs containing it shall be 'Oil from the	
	Dairy analogues except drinks	200 mg/100 g or for analogues to cheese products 600 mg/100 g	microalgae Schizochytrium sp. (ATCC PTA-9695)'	
	Spreadable fats and dressings	600 mg/100 g	ĺ	
	Breakfast cereals	500 mg/100 g		
	Food Supplements as defined in Directive	250 mg DHA/ day for general population		
	2002/46/EC	450 mg DHA/ day for pregnant		

	and lactating women
Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	250 mg/meal
Milk-based drinks and similar products intended for young children	200 mg/100 g
Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen	
Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014	
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended
Bakery products (breads,rolls, and, sweet biscuits)	200 mg/100 g
Cereal bars	500 mg/100 g
Cooking fats	360 mg/100 g

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	Non-alcoholic beverages (including dairy analogue and milk-based drinks)	80 mg/100 ml		
	Infant formula and follow- on formula as defined in Regulation (EU) No 609/2013	In accordance with Regulation (EU) No 609/2013		
	Processed cereal-based foods and baby foods for infants and young children as defined in Regulation (EU) No 609/2013	200 mg/100 g		
<i>Schizochytrium</i> sp. oil	Specified food category	Maximum levels of DHA	The designation of the novel food	
Sp. Si	Dairy products except milk- based drinks	200 mg/100 g or for cheese products 600 mg/100 g	on the labelling of the foodstuffs containing it shall be	
	Dairy analogues	200 mg/100 g or	'Oil from the microalgae	
	except drinks	for analogues to cheese products 600 mg/100 g	Schizochytrium sp.'	
	Spreadable fats and dressings	cheese products		
	Spreadable fats	cheese products 600 mg/100 g		
	Spreadable fats and dressings Breakfast cereals Food Supplements as defined	cheese products 600 mg/100 g 600 mg/100 g		
	Spreadable fats and dressings Breakfast cereals Food Supplements	cheese products 600 mg/100 g 600 mg/100 g 500 mg/100 g 250 mg DHA/ day for general		

replacements for weight control	
Milk-based drinks and similar products intended for young children	200 mg/100 g
Processed cereal-based foods and baby foods for infants and young children as defined in Regulation (EU) No 609/2013	
Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen	
Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014	
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended
Bakery products (breads, rolls and sweet biscuits)	200 mg/100 g
Cereal bars	500 mg/100 g
Cooking fats	360 mg/100 g

Schizochytrium sp. (T18) oil	Non-alcoholic beverages (including dairy analogue and milk-based drinks) Specified food	80 mg/100 ml  Maximum	The designation	
	Dairy products except milk-based drinks	levels of DHA 200 mg/100 g or for cheese products	of the novel food on the labelling of the foodstuffs containing it shall be 'Oil from the microalgae Schizochytrium sp.'	
		600 mg/100 g		
	Dairy analogues except drinks	200 mg/100 g or for analogues to cheese products 600 mg/100 g		
	Spreadable fats and dressings	600 mg/100 g		
	Breakfast cereals	500 mg/100 g		
	Food Supplements as defined in Directive 2002/46/EC	250 mg DHA/ day for general population		
		450 mg DHA/ day for pregnant and lactating women		
	Total diet replacement for weight control as defined in Regulation (EU) No 609/2013 and meal replacements for weight control	250 mg/meal		
	Milk-based drinks and similar products intended for young children	200 mg/100 g		
	Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen			

Foods bearing statements on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014	
Foods for special medical purposes as defined in Regulation (EU) No 609/2013	In accordance with the particular nutritional requirements of the persons for whom the products are intended
Bakery products (breads, rolls and, sweet biscuits)	200 mg/100 g
Cereal bars	500 mg/100 g
Cooking fats	360 mg/100 g
Non-alcoholic beverages (including dairy analogue and milk-based drinks)	80 mg/100 ml
Infant formula and follow- on formula as defined in Regulation (EU) No 609/2013	In accordance with Regulation (EU) No 609/2013

Fermented	Specified food	Maximum levels	1. The
soybean extract	category  Food Supplements as defined in Directive 2002/46/EC (capsules, tablets or powder form) intended for the adult population, excluding pregnant and lactating women	levels 100 mg/day	designation of the novel food on the labelling of the foodstuffs containing it shall be 'Fermented soybean extract'.  2. The labelling of food supplements containing fermented soybean extract shall bear a statement that persons taking medication should only consume the product under medical supervision.
Spermidine- rich wheat	Specified food category	Maximum levels	The designation of the novel food
germ extract (Triticum aestivum)	Food Supplements as defined in Directive 2002/46/EC intended for the adult population, excluding pregnant and lactating women	Equivalent of max. 6 mg/day spermidine	on the labelling of the food supplements containing it shall be 'spermidine- rich wheat germ extract'

Sucromalt	Specified food category	Maximum levels	1. The designation
			of glucose and fructose.
Sugar cane fibre	Specified food category	Maximum levels	
	Bread	8 %	
	Bakery goods	5 %	
	Meat and muscle products	3 %	
	Seasonings and spices	3 %	
	Grated cheeses	2 %	
	Special diet foods	5 %	
	Sauces	2 %	
	Beverages	5 %	
Sunflower oil extract	Specified food category	Maximum levels	The designation of the novel food on the labelling

	Food Supplements as defined in Directive 2002/46/EC	1,1 g/day	of the foodstuffs containing it shall be 'Sunflower oil extract'	
Dried Tetraselmis	Specified food category	Maximum levels	The designation of the novel food	
<i>chuii</i> microalgae	Sauces	20 % or 250mg/ day	on the labelling of the foodstuffs	
	Special salts	1 %	containing it shall be 'Dried	
	Condiment	250 mg/day	microalgae	
	Food Supplements as defined in Directive 2002/46/EC	250 mg/day	Tetraselmis chuii' or 'Dried microalgae T. chuii' Food supplements containing dried microalgae Tetraselmis chuii shall bear the following statement: 'Contains negligible amounts of iodine'	
Therapon barcoo/Scortum	Intended use ident salmon, namely the culinary fish prod- including cooked, baked fish produc	ne preparation of ucts and dishes, raw, smoked and		
<b>D-Tagatose</b>	Specified food category	Maximum levels	1. The	
	Not specified		designation of the novel food on the labelling of the foodstuffs containing it shall be 'D- Tagatose'.  The labelling of any product	

Taxifolin-rich extract	Specified food category Food Supplements as defined in Directive	Maximum levels 100 mg/day	where the level of D- Tagatose exceeds 15 g per serving and all beverage containing greater than 1 % D- Tagatose (as consume shall bear a statemen 'excessive consumproduce laxative effects'.  The designation of the novel food on the labelling of the foodstuffs containing it shall be	es ng ed) t
Trehalose		Maximum levels		ion
	Not specified		novel food on the labelling of the	

			2.	foodstufficontaining it shall be 'Trehalos and shall be displayed on the labelling of the product as such or in the list of ingredient of foodstufficontaining it. The designation of the novel food on the labelling shall be accompariby indication that the 'Trehalos is a source of glucose'.	g e' ts s g on
UV-treated mushrooms (Agaricus	Specified food category	Maximum levels of vitamin D <sub>2</sub>		gracose .	
bisporus)	Mushrooms (Agaricus bisporus)	10 µg of vitamin D <sub>2</sub> /100 g fresh weight	1.	The designation on the label of the novel food as such or of the foodstuffs containing	S

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			it shall be 'UV-treated mushroo (Agarica bisporus 1). The designat on the label of the novel food as such or of the foodstuf containing it shall be accompably indication that a 'controll light treatment was used to increase vitamin D levels' or 'UV treatment was used to increase vitamin D2 levels'.	ion  fs  anied  an  ed  at
UV-treated baker's yeast (Saccharomyces	Specified food category	Maximum levels of vitamin D <sub>2</sub>	The designation of the novel food on the labelling	
cerevisiae)	Yeast-leavened breads and rolls	5 μg of vitamin D <sub>2</sub> /100 g	of the foodstuffs containing it	
	Yeast-leavened fine bakery wares	5 μg of vitamin D <sub>2</sub> /100 g	shall be 'Vitamin D yeast' or 'Vitamin D <sub>2</sub> yeast'	
	Food Supplements	5 μg of vitamin D <sub>2</sub> /day		

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

UV-treated bread	as defined in Directive 2002/46/EC  Specified food category  Yeast leavened bread and rolls (without toppings)	Maximum levels of vitamin D <sub>2</sub> 3 μg vitamin D <sub>2</sub> /100 g	The designation on the label of the novel food shall be accompanied by 'contains vitamin D produced by	
UV-treated milk	Pasteurised whole milk as defined in Regulation (EU) No 1308/2013 to be consumed as such	Maximum levels of vitamin D <sub>3</sub> 5-32 μg/kg for general population excluding infants	UV-treatment'  1. The designat on the label of the novel food shall be 'UV-treated'.  2. Where	ion
	Pasteurised semi-skimmed milk as defined in Regulation (EU) No 1308/2013 to be consumed as such	1-15 µg/kg for general population excluding infants	UV- treated milk contains an amount of vitamin D that is consider significa in accordar with Point 2 of Part A of Annex XIII to Regulati (EU) No 1169/20 of the Europea Parliame and of the	ed nt oce on

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

Vitamin K <sub>2</sub> (menaquinone)	To be used in com Directive 2002/46 (EU) No 609/2013 Regulation (EC) N	5/EC, Regulation 3 and/or	Council, the designat for the labelling shall be accompared by 'contain vitamin D produced by UV-treatment or 'milk containing vitamin D resulting from UV-treatment The designation of the novel food on the labelling of the foodstuffs containing it shall be 'Menaquinone' or 'Vitamin K2'	ion anied t'
Wheat bran extract	Specified food category	Maximum levels	The designation of the novel food	The 'Wheat Bran
extract	Beer and substitutes	0,4 g/100 g	on the labelling of the foodstuffs	Extract' may not be introduced onto the market
	Ready to eat cereals	9 g/100 g	containing it as a food supplement or bran extract' food supplem	
	Dairy products	2,4 g/100 g		ingredient.
	Fruit and vegetable juices	0,6 g/100 g		Nor may it be added to infant formula.
	Soft drinks	0,6 g/100 g		
	Meat preparations	2 g/100 g		
Yeast beta- glucans	Specified food category	Maximum levels of pure beta-glucans from yeast	The designation of the novel food on the labelling of the foodstuffs containing it	

Status: Point in time view as at 31/12/2020.

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	(Saccharomyces cervisiae)
Food supplements as defined in Directive 2002/46/EC, excluding food supplements for infants and young children	1,275 g/day for children older than 12 years and general adult population 0,675 g/day for children younger than 12 years
Total diet replacement for weight control as defined in Regulation (EU) No 609/2013	1,275 g/day
Food for special medical purposes as defined in Regulation (EU) No 609/2013, excluding food for special medical purposes intended for infants and young children	1,275 g/day
Beverages based on fruit and/ or vegetable juices including concentrate and dehydrated juices	1,3 g/kg
Fruit-flavoured drinks	0,8 g/kg
Cocoa beverages preparation powder	38,3 g/kg (powder)
Other beverages	0,8 g/kg (ready to drink) 7 g/kg (powder)
Cereal bars	6 g/kg
Breakfast cereals	15,3 g/kg

shall be 'Yeast (Saccharomyces cerevisiae) beta-glucans'

Status: Point in time view as at 31/12/2020.

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	Wholegrain and high fibre instant hot breakfast cereals	1,5 g/kg		
	Cookie-type biscuits	6,7 g/kg		
	Cracker-type biscuits	6,7 g/kg		
	Milk based beverages	3,8 g/kg		
	Fermented milk products	3,8 g/kg		
	Milk product analogues	3,8 g/kg		
	Dried milk/milk powder	25,5 g/kg		
	Soups and soup mixes	0,9 g/kg (ready to eat)		
		1,8 g/kg (condensed)		
		6,3 g/kg (powder)		
	Chocolate and confectionery	4 g/kg		
	Protein bars and powders	19,1 g/kg		
	Jam, marmalade and other fruit spreads	11,3 g/kg		
Zeaxanthin	Specified food category	Maximum levels	The designation of the novel food	
	Food Supplements as defined in Directive 2002/46/EC	2 mg/day	on the labelling of the foodstuffs containing it shall be 'synthetic zeaxanthin'	
Zinc L-pidolate	Specified food category	Maximum levels	The designation of the novel food	
	Foods covered by Regulation (EU) No 609/2013	3 g/day	on the labelling of the foodstuffs containing it shall be 'Zinc L- pidolate'	

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Milk based drinks and similar products intended for young children

Meal replacement for weight control

Foods intended to meet the expenditure of intense muscular effort, especially for sportsmen

Food bearing statement on the absence or reduced presence of gluten in accordance with the requirements of Commission Implementing Regulation (EU) No 828/2014

Food Supplements as defined in Directive 2002/46/EC

- a Regulation (EU) No 609/2013 of the European Parliament and of the Council of 12 June 2013 on food intended for infants and young children, food for special medical purposes, and total diet replacement for weight control and repealing Council Directive 92/52/EEC, Commission Directives 96/8/EC, 1999/21/EC, 2006/125/EC and 2006/141/EC, Directive 2009/39/EC of the European Parliament and of the Council and Commission Regulations (EC) No 41/2009 and (EC) No 953/2009 (OJ L 181, 29.6.2013, p. 35).
- b Commission Implementing Regulation (EU) No 828/2014 of 30 July 2014 on the requirements for the provision of information to consumers on the absence or reduced presence of gluten in food (OJ L 228, 31.7.2014, p. 5).
- c Directive 2002/46/EC of the European Parliament and of the Council of 10 June 2002 on the approximation of the laws of the Member States relating to food supplements (OJ L 183, 12.7.2002, p. 51).
- d Regulation (EC) No 1925/2006 of the European Parliament and of the Council of 20 December 2006 on the addition of vitamins and minerals and of certain other substances to foods (OJ L 404, 30.12.2006, p. 26).
- e Council Directive 2001/113/EC of 20 December 2001 relating to fruit jams, jellies and marmalades and sweetened chestnut purée intended for human consumption (OJ L 10, 12.1.2002, p. 67).
- f Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulation (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) 1234/2007 (OJ L 347, 20.12.2013, p. 671).

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Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

## **TABLE 2: SPECIFICATIONS**

Authorised Novel Food	Specifications
N-Acetyl-D-	Description:
neuraminic acid	<i>N</i> -Acetyl-D-neuraminic acid is a white to off-white crystalline powder
	<b>Definition:</b>
	Chemical name:
	IUPAC names:
	<i>N</i> -Acetyl-D-neuraminic acid (dihydrate)
	5-Acetamido-3,5-dideoxy-D-glycero-D-galacto-non-2-ulopyranosonic
	acid (dihydrate)
	Synonyms:
	Sialic acid (dihydrate)
	Chemical formula:
	$C_{11}H_{19}NO_9$ (acid)
	$C_{11}H_{23}NO_{11}$ ( $C_{11}H_{19}NO_9 * 2H_2O$ ) (dihydrate)
	Molecular mass:
	309,3 Da (acid)
	345,3 (309,3 + 36,0) (dihydrate)
	CAS No.:
	131-48-6 (free acid)
	50795-27-2 (dihydrate)
	Specifications:
	Description: white to off-white crystalline powder
	pH (20 °C, 5 % solution): 1,7 – 2,5
	N-Acetyl-D-neuraminic acid (dihydrate): > 97,0 %
	Water (dihydrate calculates to 10,4 %): $\leq$ 12,5 % (w/w)
	Ash, sulphated: $< 0.2 \%$ (w/w)
	Acetic acid (as free acid and/or sodium acetate): $< 0.5 \%$ (w/w)
	Heavy Metals:
	Iron: < 20,0 mg/kg
	Lead: $< 0.1 \text{ mg/kg}$
	Residual proteins: < 0,01 % (w/w)
	Residual solvents:
	2-Propanol: $< 0,1 \% (w/w)$
	Acetone: $< 0.1 \% (w/w)$
	Ethyl acetate: $< 0.1 \%$ (w/w)
	Microbiological criteria:
	Salmonella: Absence in 25 g
	Aerobic mesophilic total count:< 500 CFU/g
	Enterobacteriaceae: Absence in 10 g
	Cronobacter (Enterobacter) sakazakii: Absence in 10 g
	Listeria monocytogenes: Absence in 25 g
	Bacillus cereus: < 50 CFU/g
	Yeasts: < 10 CFU/g
	Moulds: < 10 CFU/g

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

Residual endotoxins: < 10 EU/mg

CFU: Colony Forming Units; EU: Endotoxin Units.

## Adansonia digitata (Baobab) dried fruit pulp

## **Description/Definition:**

The Baobab (*Adansonia digitata*) fruits are harvested from trees. The hard shells are cracked open and the pulp is separated from the seeds and the shell. This is milled, separated into coarse and fine lots (particle size 3 to  $600 \, \mu$ ) and then packaged.

**Typical nutritional components:** 

Moisture (loss on drying) (g/100 g): 4,5-13,7

Protein (g/100 g): 1,8-9,3 Fat (g/100 g): 0-1,6

Total carbohydrate (g/100 g): 76,3-89,5 Total sugars (as glucose): 15,2-36,5 Sodium (mg/100 g): 0,1-25,2

**Analytical specifications:** 

Foreign matter: Not more than 0,2 %

Moisture (loss on drying) (g/100 g): 4,5-13,7

Ash (g/100 g): 3,8-6,6

## Ajuga reptans extract from cell cultures

## **Description/Definition:**

Hydroalcoholic extract from *Ajuga reptans* L. tissue cultures which is substantially equivalent to extracts from flowering aerial parts of *Ajuga reptans* obtained by traditional cultures.

## L-Alanyl-L-Glutamine

## **Description/Definition:**

L-Alanyl-L-Glutamine is produced by fermentation with a genetically modified strain of *Escherichia coli*. During the fermentation process, the ingredient is secreted into the growth medium from which it is subsequently separated and purified to a concentration of > 98 %.

Appearance: White crystalline powder

Purity: > 98 %

Infrared spectroscopy: Conformity with ref. standard

Appearance of solution: Colourless and clear

Assay (dry basis): 98-102 % Related substances (each):  $\leq 0.2$  % Residue on ignition:  $\leq 0.1$  % Loss on drying:  $\leq 0.5$  %

Optical rotation:  $+9.0 - +11.0^{\circ}$  pH (1 %; H<sub>2</sub>O): 5.0-6.0 Ammonium (NH<sub>4</sub>):  $\leq 0.020$  % Chloride (Cl):  $\leq 0.020$  %

Sulphate (SO<sub>4</sub>): ≤ 0,020 % **Microbiological criteria:** *Escherichia coli*: Absence/g

## Algal oil from the microalgae *Ulkenia* sp.

## **Description/Definition:**

Oil from the micro-algae *Ulkenia* sp. Acid value:  $\leq 0.5$  mg KOH/g

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Peroxide value (PV):  $\leq$  5,0 meq/kg oil Moisture and volatiles:  $\leq$  0,05 % Unsaponifiables:  $\leq$  4,5 % Trans-fatty acids:  $\leq$  1,0 % DHA content:  $\geq$  32 %

## Allanblackia seed oil

## **Description/Definition:**

Allanblackia seed oil is obtained from the seeds of the allanblackia species: A. floribunda (synonymous with A. parviflora) and A. stuhlmannii.

## **Composition of fatty acids:**

Lauric acid (C12:0): < 1,0 %Myristic acid (C14:0): < 1,0 %Palmitic acid (C16:0): < 2,0 %Palmitoleic acid (C16:1): < 1,0 %Stearic acid (C18:0): 45-58 %Oleic acid (C18:1): 40-51 %Linoleic acid (C18:2): < 1,0 % $\gamma$ -Linolenic acid (C18:3): < 1,0 %Arachidic acid (C20:0): < 1,0 %Free fatty acids: max 0,1 %

## **Characteristics:**

Trans fatty acids: max 0,5 %

Peroxide value (PV): max 0,8 meq/kg

Iodine value: < 46 g/100 g

Unsaponifiable matter: max 1,0 %

Saponification value: 185-198 mg KOH/g

## Aloe macroclada Baker leaf extract

## **Description/Definition:**

Powdered gel extract derived from the leaves of *Aloe macroclada* Baker which is substantially equivalent to the same gel derived from *Aloe vera* (L.) Burm.f. leaves.

Ash: 25 %

Dietary fibres: 28,6 %

Fat: 2,7 % Moisture: 4,7 %

Polysaccharides: 9,5 %

Protein: 1,63 % Glucose: 8,9 %

## Antarctic Krill oil from Euphausia superba

## **Description/Definition:**

To produce lipid extract from Antarctic Krill (*Euphausia superba*) deep-frozen crushed krill or dried krill meal is subjected to lipid extraction with an approved extraction solvent (under Directive 2009/32/EC). Proteins and krill material are removed from the lipid extract by filtration. The extraction solvents and residual water are removed by evaporation.

Saponification value:  $\leq 230 \text{ mg KOH/g}$ Peroxide value (PV):  $\leq 3 \text{ meq O }_2\text{/kg oil}$ 

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Oxidative stability: All food products containing Antarctic Krill oil from *Euphausia superba* should demonstrate oxidative stability by appropriate and recognised national/international test methodology (e.g. AOAC). Moisture and volatiles:  $\leq 3 \%$  or 0,6 expressed as water activity at 25 °C

Phospholipids: 35-50 %Trans-fatty acids:  $\leq 1 \%$ 

EPA (eicosapentaenoic acid):  $\geq 9 \%$ DHA (docosahexaenoic acid):  $\geq 5 \%$ 

# Antarctic Krill oil rich in phospholipids from *Euphausia superba*

## **Description/Definition:**

Oil rich in phospholipids is produced from Antarctic krill (*Euphausia superba*) by repeated solvent washings with an approved solvent (under Directive 2009/32/EC) to increase phospholipid content of the oil. Solvents are removed from the final product by evaporation.

Saponification value:  $\leq 230 \text{ mg KOH/g}$ Peroxide value (PV):  $\leq 3 \text{ meq O}_2/\text{kg oil}$ 

Moisture and volatiles:  $\leq 3$  % or 0,6 expressed as water activity at 25 °C

Phospholipids:  $\geq$  60 % Trans-fatty acids:  $\leq$  1 %

EPA (eicosapentaenoic acid):  $\geq 9 \%$ DHA (docosahexaenoic acid):  $\geq 5 \%$ 

# Arachidonic acid-rich oil from the fungus *Mortierella alpina*

## **Description/Definition:**

The clear yellow arachidonic acid-rich oil is obtained by fermentation of the non-genetically modified strains IS-4, I49-N18, FJRK-MA01 and CBS 210.32 of the fungus *Mortierella alpina* using a suitable liquid. The oil is then extracted from the biomass and purified.

Arachidonic acid:  $\geq 40$  % by weight of the total fatty acid content

Free fatty acids:  $\leq 0.45$  % of the total fatty acid content Trans fatty acids:  $\leq 0.5$  % of the total fatty acid content

Unsaponifiable matter:  $\leq 1,5 \%$ Peroxide value (PV):  $\leq 5 \text{ meq/kg}$ 

Anisidin value:  $\leq 20$ Acid value:  $\leq 1.0$  KOH/g Moisture:  $\leq 0.5$  %

## Argan oil from Argania spinosa

## **Description/Definition:**

Argan oil is the oil obtained by cold pressing of the almond like kernels of the fruits of *Argania spinosa* (L.) Skeels. Kernels may be roasted prior to pressing, but with no direct contact with a flame.

## **Composition:**

Palmitic acid (C16:0): 12-15 % Stearic acid (C18:0): 5-7 % Oleic acid (C18:1): 43-50 % Linoleic acid (C18:2): 29-36 % Unsaponifiable matter: 0,3-2 % Total sterols: 100-500 mg/100 g Total tocopherols: 16-90 mg/100 g Oleic acidity: 0,2-1,5 %

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

Peroxide value (PV):  $< 10 \text{ meq } O_2/kg$ 

## Astaxanthinrich oleoresin from Haematococcus pluvialis algae

## **Description/Definition:**

Astaxanthin is a carotenoid produced by *Haematococcus pluvialis* algae. Production methods for the growth of the algae are variable; using either closed systems exposed to sunlight or strictly controlled illuminated light; alternatively open ponds may be used. The algal cells are harvested and dried; the oleoresin is extracted using either super critical  $CO_2$  or a solvent (ethyl acetate). The Astaxanthin is diluted and standardized to 2,5 %, 5,0 %, 7,0 %, 10 %, 15 % or 20 % using olive oil, safflower oil, Sunflower oil or MCT (Medium Chain Triglycerides).

## **Composition of the Oleoresin:**

Fat: 42,2- 99 % Protein: 0,3-4,4 % Carbohydrate: 0-52,8 %

Fibre: < 1,0 % Ash: 0,0-4,2 %

Specification of Carotenoids w/w% Total Astaxanthins: 2,9-11,1 % 9-cis-astaxanthin: 0,3-17,3 % 13-cis-astaxanthin: 0,2-7,0 %

Astaxanthin monoesters: 79,8-91,5 % Astaxanthin diesters: 0,16-19,0 %

B-Carotene: 0,01-0,3 %

Lutein: 0-1,8 %

Canthaxanthin: 0-1,30 % **Microbiological criteria:** 

Total aerobic bacteria: < 3 000 CFU/g Yeast and Moulds: < 100 CFU/g

Coliforms: < 10 CFU/g E. coli: Negative Salmonella: Negative Staphylococcus: Negative

# Basil seeds (Ocimum basilicum)

## **Description/Definition:**

Basil (*Ocimum basilicum* L.) belongs to the family '*Lamiaceae*' within the order 'Lamiales'. Post-harvest the seeds are cleaned mechanically. Flowers, leaves and other parts of the plant are removed. Highest level of purity of Basil seeds has to be ensured by filtering (optical, mechanical). Production process of fruit juice and fruit/vegetable blend beverages containing Basil seeds (*Ocimum basilicum* L.) includes seed pre-hydration and pasteurisation steps. Microbiological controls and monitoring systems are in place.

Dry Matter: 94,1 % Protein: 20,7 % Fat: 24,4 %

Carbohydrate: 1,7 %

Dietary Fibre: 40,5 % (Method: AOAC 958,29)

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

Ash: 6,78 %

## Fermented black bean extract

## **Description/Definition:**

Fermented black bean extract (Touchi extract) is a fine light-brown protein-rich powder obtained by water extraction of small soybeans (*Glycine max (L.) Merr.*) fermented with *Aspergillus oryzae*. The extract contains an  $\alpha$ -glucosidase inhibitor.

## **Characteristics:**

Fat: ≤ 1,0 % Protein: ≥ 55 % Water: ≤ 7,0 % Ash: ≤ 10 %

Carbohydrate: ≥ 20 %

α-glucosidase inhibitory activity: IC50 min 0,025 mg/ml

Soy isoflavone:  $\leq 0.3 \text{ g}/100 \text{ g}$ 

## Bovine lactoferrin

## **Description/Definition:**

Bovine lactoferrin is a protein that occurs naturally in cows' milk. It is an iron-binding glycoprotein of approximately 77 kDa and consists of a single polypeptide chain of 689 amino acids.

Production process: Bovine lactoferrin is isolated from skimmed milk or cheese whey via ion exchange and subsequent ultra-filtration steps. Finally, it is dried by freeze drying or spraying and the large particles are sieved out. It is a virtually odourless, light pinkish powder.

Physical-Chemical properties of Bovine lactoferrin:

Moisture: < 4,5 % Ash: < 1,5 %

Arsenic: < 2,0 mg/kg Iron: < 350 mg/kg Protein: > 93 %

of which bovine lactoferrin: > 95 % of which other proteins: < 5,0 % pH (2 % solution, 20 °C): 5,2-7,2

Solubility (2 % solution, 20 °C): complete

## Buglossoides arvensis seed oil

## **Description/Definition:**

Refined Buglossoides oil is extracted from the seeds of *Buglossoides* 

arvensis (L.) I.M.Johnst

Alpha-linolenic acid:  $\geq$  35 % w/w of total fatty acids Stearidonic acid:  $\geq$  15 % w/w of total fatty acids Linoleic acid:  $\geq$  8,0 % w/w of total fatty acids Trans fatty acids:  $\leq$  2,0 % w/w of total fatty acids

Acid value:  $\leq 0.6 \text{ mg KOH/g}$ 

Peroxide value (PV):  $\leq 5,0$  meq O<sub>2</sub>/kg Unsaponifiable content:  $\leq 2,0$  %

Protein content (total nitrogen):  $\leq 10 \,\mu\text{g/ml}$ 

Pyrrolizidine alkaloids: Not detectable with a detection limit of 4,0 µg/kg

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

## Calanus finmarchicus oil

## **Description/Definition:**

The novel food is ruby coloured, slightly viscous oil with a slight shellfish odour extracted from the crustacean (marine zooplankton) Calanus finmarchicus. The ingredient consists primarily of wax esters (> 85 %) with minor amounts of triglycerides and other neutral lipids.

## **Specifications:**

Water: < 1.0 % Wax esters: > 85 %Total fatty acids: > 46 %

Eicosapentaenoic acid (EPA): > 3,0 % Docosahexaenoic acid (DHA): > 4.0 %

Total fatty alcohols: > 28 % C20:1 n-9 fatty alcohol: > 9,0 % C22:1 n-11 fatty alcohol: > 12 %

Trans fatty acids: < 1,0 % Astaxanthinesters: < 0,1 %

Peroxide value (PV):  $\leq 3.0$  meq.  $O_2/kg$ 

## Chewing gum base glycol)

## **Description/Definition:**

The novel food ingredient is a synthetic polymer (Patent (monomethoxypolyethlydeNeO2006016179). It consists of branched polymers of

monomethoxypolyethylene glycol (MPEG) grafted onto polyisoprenegraft-maleic anhydride (PIP-g-MA), and unreacted MPEG (less than

35 % by weight).

White to off-white colour. CAS No.: 1246080-53-4

## **Characteristics:**

Moisture: < 5.0 %

Aluminium: < 3.0 mg/kgLithium: < 0.5 mg/kgNickel: < 0.5 mg/kg

Residual anhydride:  $< 15 \mu mol/g$ Polydispersity index: < 1,4 Isoprene: < 0.05 mg/kgEthylene oxide: < 0.2 mg/kgFree maleic anhydride: < 0,1 %

Total oligomeres (less than 1 000 Dalton):  $\leq$  50 mg/kg

Ethylene glycol: < 200 mg/kg Diethylene glycol: < 30 mg/kg

Monoethylene glycol methyl ether: < 3,0 mg/kg Diethylene glycol methyl ether: < 4,0 mg/kg Triethylene glycol methyl ether: < 7,0 mg/kg

1,4-Dioxane: < 2,0 mg/kg Formaldehyde: < 10 mg/kg

## Chewing gum base (Methyl vinyl

## **Description/Definition:**

Methyl vinyl ether-maleic anhydride copolymer is an anhydrous copolymer of methyl vinyl ether and maleic anhydride.

- Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012,
- Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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## ether-maleic anhydride copolymer)

Free-flowing, white to white-off powder

CAS No: 9011-16-9

**Purity:** 

Assay value: At least 99,5 % in dry matter Specific viscosity (1 % MEK): 2-10 Residual methyl vinyl ether: ≤ 150 ppm Residual maleic anhydride: ≤ 250 ppm

Acetaldehyde: ≤ 500 ppm Methanol: ≤ 500 ppm Dilauroyl peroxide: ≤ 15 ppm Total heavy metals: ≤ 10 ppm **Microbiological criteria:** 

Total aerobic plate count: ≤ 500 CFU/g

Mould/yeast: ≤ 500 CFU/g Escherichia coli: Negative to test Salmonella: Negative to test

Staphylococcus aureus: Negative to test Pseudomonas aeruginosa: Negative to test

## Chia oil from Salvia hispanica

## **Description/Definition:**

Chia oil is produced from Chia (*Salvia hispanica* L.) seeds (99,9 % pure) by cold pressing. No solvents are used and, once pressed, the oil is held in decantation tanks and a filtration process employed to remove impurities.

It can also be produced by extraction with supercritical  $CO_2$ .

## **Production process:**

Produced by cold pressing. No solvents are used and, once pressed, the oil is held in decantation tanks and a filtration process employed to remove impurities.

Acidity expressed as oleic acid:  $\leq$  2,0 % Peroxide value (PV):  $\leq$  10 meq/kg Insoluble impurities:  $\leq$  0,05 % Alpha linolenic acid:  $\geq$  60 % Linoleic acid: 15-20 %

# Chia seeds (Salvia hispanica)

### **Description/Definition:**

Chia (*Salvia hispanica* L.) is a summer annual herbaceous plant belonging to the *Labiatae* family. Post-harvest the seeds are cleaned mechanically. Flowers, leaves and other parts of the plant are removed.

Dry matter: 90-97 % Protein: 15-26 % Fat: 18-39 %

Carbohydrate (\*): 18-43 % Crude Fibre(\*\*): 18-43 %

Ash: 3-7 %

- (\*) Carbohydrates include the fibre value
- (\*\*) Crude fibre is the part of fibre made mainly of indigestible cellulose, pentosans and lignin
- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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## **Production process:**

Production process of fruit juices and fruit juice blends beverages, containing Chia seeds, includes seed pre-hydration and pasteurisation steps. Microbiological controls and monitoring systems are in place.

## Chitinglucan from Aspergillus niger

## **Description/Definition:**

Chitin-glucan is obtained from the mycelium of *Aspergillus niger*; it is a slightly yellow, odourless, free-flowing powder. It has a dry matter content of 90 % or more.

Chitin-glucan is composed largely of two polysaccharides:

— chitin, composed of repeating units of N-acetyl-D-glucosamine (CAS No: 1398-61-4),

 beta (1, 3)-glucan, composed of repeating units of D-glucose (CAS No: 9041-22-9).

Loss on drying: ≤ 10 % Chitin-glucan: ≥ 90 %

Ratio of chitin to glucan: 30:70 to 60:40

Ash:  $\leq 3.0 \%$ Lipids:  $\leq 1.0 \%$ Proteins:  $\leq 6.0 \%$ 

# Chitin-glucan complex from *Fomes* fomentarius

## **Description/Definition:**

Chitin-glucan complex is obtained from the cell walls of the fruit bodies of the fungus *Fomes fomentarius*. It consists primarily of two polysaccharides:

 Chitin, composed of repeating units of N-acetyl-D-glucosamine (CAS No: 1398-61-4);

Beta-(1,3)(1,6)-D-glucan, composed of repeating units of D-glucose (CAS No: 9041-22-9).

The production process consists of several steps, including: cleaning, reduction in size and grinding, softening in water and heating in an alkaline solution, washing, drying. No hydrolysis is applied during the production process.

Appearance: Powder, odourless, flavourless, brown

## Purity:

Moisture: ≤ 15 % Ash: ≤ 3,0 %

Chitin-glucan: ≥ 90 %

Ratio of chitin to glucan: 70:20

Total carbohydrates, excluding glucans:  $\leq 0.1 \%$ 

Proteins:  $\leq 2.0 \%$ Lipids:  $\leq 1.0 \%$ Melanins:  $\leq 8.3 \%$ Additives: None pH: 6.7-7.5**Heavy metals:** Lead (ppm):  $\leq 1.00$ Cadmium (ppm):  $\leq 1.00$ 

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Mercury (ppm):  $\leq 0.03$ Arsenic (ppm):  $\leq 0.20$ Microbiological criteria:

Total mesophilic bacteria:  $\leq 10^3/g$ 

Yeast and moulds:  $\leq 10^3/g$ Coliforms at 30 °C:  $\leq 10^3/g$ 

 $E. coli: \leq 10/g$ 

Salmonella and other pathogenic bacteria: Absence/25 g

## Chitosan extract from fungi (Agaricus bisporus; Aspergillus niger)

## **Description/Definition:**

The chitosan extract (containing mainly poly(D-glucosamine)) is obtained from stems of *Agaricus bisporus* or from the mycelium of *Aspergillus niger*.

The patented production process consists of several steps, including: extraction and deacetylation (hydrolysis) in alkaline medium, solubilisation in acidic medium, precipitation in alkaline medium, washing and drying.

Synonym: Poly(D-glucosamine)
Chitosan CAS number: 9012-76-4
Chitosan formula: (C<sub>6</sub>H<sub>11</sub>NO<sub>4</sub>)<sub>n</sub>
Appearance: fine free-flowing powder

Aspect: Off —white to slightly brownish

Odour: Odourless

## **Purity:**

Chitosan content (% w/w dry weight):  $\geq 85$  Glucan content (% w/w dry weight):  $\leq 15$  Loss on drying (% w/w dry weight):  $\leq 10$  Viscosity (1 % in 1 % acetic acid): 1-15

Degree of acetylation (in % mol/wet weight): 0-30

Viscosity (1 % in 1 % acetic acid) (mPa.s): 1-14 for chitosan from

Aspergillus niger; 12-25 for chitin from Agaricus bisporus

Ash (% w/w dry weight):  $\leq 3.0$ Proteins (% w/w dry weight):  $\leq 2.0$ 

Particle size: > 100 nm

Tapped density  $(g/cm^3)$ : 0,7-1,0

Fat binding capacity  $800 \times (\text{w/w wet weight})$ : pass

## **Heavy metals:**

Mercury (ppm):  $\leq 0.1$ Lead (ppm):  $\leq 1.0$ Arsenic (ppm):  $\leq 1.0$ Cadmium (ppm):  $\leq 0.5$ Microbiological criteria:

### A 1:

Aerobic count (CFU/g):  $\leq 10^3$ 

Yeast and mould count (CFU/g):  $\leq 10^3$ 

Escherichia coli (CFU/g):  $\leq 10$ Enterobacteriaceae (CFU/g):  $\leq 10$ 

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- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Salmonella: Absence/25g

Listeria monocytogenes: Absence/25g

## Chondroitin sulphate

## **Description/Definition:**

Chondroitin sulphate (sodium salt) is a biosynthetic product. It is obtained by chemical sulphation of chondroitin derived from fermentation by the bacterium *Escherichia coli* O5:K4:H4 strain U1-41

(ATCC 23502).

Chondroitin sulphate (sodium salt) (% dry basis): 95-105

MWw (weight avg.) (kDa): 5-12 MWn (number avg.) (kDa): 4-11 Dispersity  $(w_h/w_{0.05})$ :  $\leq 0.7$ 

Sulphation pattern ( $\Delta \text{Di-6S}$ ) (%):  $\leq 85$ 

Loss on drying (%) (105 °C to constant weight):  $\leq 10.0$ 

Residue on ignition (% dry basis): 20-30

Protein (% dry basis):  $\leq 0.5$ Endotoxins (EU/mg):  $\leq 100$ 

Total organic impurities (mg/kg):  $\leq 50$ 

## Chromium Picolinate

## **Description/Definition:**

Chromium picolinate is a reddish free-flowing powder, slightly soluble in

water at pH 7. The salt is also soluble in polar organic solvents. Chemical name: tris(2pyridinecarboxylato-N,O)chromium(III) or 2-

pyridinecarboxylic acid chromium(III) salt

CAS No.: 14639-25-9

Chemical formula: Cr(C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>)<sub>3</sub>

Chemical characteristics: Chromium Picolinate: ≥ 95 % Chromium (III): 12-13 % Chromium (VI): not detected

Water:  $\leq 4.0 \%$ 

## Cistus incanus L. Pandalis herb

## **Description:**

*Cistus incanus* L. Pandalis herb; species belonging to the *Cistaceae* family and native to the Mediterranean region, Chalkidiki Peninsula.

**Composition:** 

Moisture: 9–10 g/100 g herbs Protein: 6,1 g/100 g herbs Fat: 1,6 g/100 g herbs

Carbohydrates: 50,1 g/100 g herbs

Fiber: 27,1 g/100 g herbs Minerals: 4,4 g/100 g herbs

Sodium: 0,18 g Potassium: 0,75 g Magnesium: 0,24 g Calcium: 1,0 g Iron: 65 mg Vitamin B<sub>1</sub>: 3,0 μg

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Vitamin B<sub>2</sub>: 30 μg Vitamin B<sub>6</sub>: 54 μg Vitamin C: 28 mg

Vitamin A: less than 0,1 mg Vitamin E: 40–50 mg

Alpha-Tocopherol: 20–50 mg

Beta and Gamma-Tocopherols: 2-15 mg

Delta-Tocopherol: 0,1–2 mg

## Citicoline

## **Description/Definition:**

Citicoline is produced by a microbial process.

Citicoline is composed of cytosine, ribose, pyrophosphate and choline.

White crystalline powder

Chemical name: Choline cytidine 5'-pyrophosphate, Cytidine 5'-

(trihydrogen diphosphate) P'-[2-(trimethylammonio)ethyl]ester inner salt

Chemical formula: C<sub>14</sub>H<sub>26</sub>N<sub>4</sub>O<sub>11</sub>P<sub>2</sub> Molecular weight: 488,32 g/mol

CAS No.: 987-78-0

pH (sample solution of 1 %): 2,5-3,5

**Purity:** 

Assay value:  $\geq$  98 % of dry matter

Loss on drying (100 °C for 4 hours):  $\leq 5.0 \%$ 

Ammonium:  $\leq 0.05 \%$ 

Arsenic: Not more than 2 ppm Free phosphoric acids:  $\leq 0.1$  % 5'-Cytidylic acid:  $\leq 1.0$  % **Microbiological criteria:** 

Total plate count:  $\leq 10^3$  CFU/g Yeast and moulds:  $\leq 10^2$  CFU/g Escherichia coli: Absence in 1 g

## Clostridium butyricum

### **Description/Definition:**

Clostridium butyricum (CBM-588) is a Gram-positive, spore-forming, obligate anaerobic, non-pathogenic, non-genetically modified bacterium.

Depository number FERM BP-2789

Microbiological criteria:

Total viable aerobic count: ≤ 10<sup>3</sup> CFU/g Escherichia coli: Not detected in 1 g Staphylococcus aureus: Not detected in 1 g Pseudomonas aeruginosa: Not detected in 1 g

Yeast and moulds:  $\leq 10^2$  CFU/g

# Extract of defatted cocoa powder

Cocoa (Theobroma cacao L.) Extract

Appearance: Dark brown powder free of visible impurities

Physical and chemical properties: Polyphenol content: Min 55,0 % GAE Theobromine content: Max 10,0 %

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).  $\widetilde{ANNEX}$ 

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Ash content: Max 5,0 % Moisture content: Max 8,0 % Bulk density: 0,40-0,55 g/cm<sup>3</sup>

pH: 5,0-6,5

Residual solvent: Max 500 ppm

## Low fat cocoa extract

Low fat Cocoa (*Theobroma cacao* L.) extract Appearance: Dark red to purple powder Cocoa extract, concentrate: Min 99 %

Silicon dioxide (technological aid): Max 1,0 %

Cocoa flavanols: Min. 300 mg/g

— Epicatechin: Min. 45 mg/g

Loss on drying: Max. 5,0 %

# Coriander seed oil from Coriandrum sativum

## **Description/Definition:**

Coriander seed oil is an oil containing glycerides of fatty acids that is produced from the seeds of the coriander plant *Coriandrum sativum* L.

Slight yellow colour, bland taste

CAS No.: 8008-52-4 Composition of fatty acids: Palmitic acid (C16:0): 2-5 % Stearic acid (C18:0): < 1,5 %

Petroselinic acid (cis-C18:1(n-12)): 60-75 %

Oleic acid (cis-C18:1 (n-9)): 8-15 % Linoleic acid (C18:2): 12-19 % α-Linolenic acid (C18:3): < 1,0 %

Trans fatty acids:  $\leq 1.0 \%$ 

**Purity:** 

Refractive index (20 °C): 1,466-1,474

Acid value:  $\leq 2.5$  mg KOH/g Peroxide value (PV):  $\leq 5.0$  meq/kg

Iodine value: 88-110 units

Saponification value: 186-200 mg KOH/g

Unsaponifiable matter:  $\leq 15 \text{ g/kg}$ 

## Crataegus pinnatifida dried fruit

## **Description/Definition:**

Dried fruits of *Crataegus pinnatifida* species belonging to the *Rosaceae* family and native to north China and Korea.

## **Composition:**

Dry matter: 80 %

Carbohydrates: 55 g/kg fresh weight

Fructose: 26,5–29,3 g/100 g Glucose: 25,5–28,1 g/100 g

Vitamin C: 29,1 mg/100 g fresh weight Sodium: 2,9 g/100 g fresh weight

Compotes are products obtained by thermal processing of the edible part of one or several species of fruits, whole or in pieces, sieved or not,

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without significant concentration. Sugars, water, cider, spices and lemon juice may be used.

## α-cyclodextrin

## **Description/Definition:**

A non-reducing cyclic saccharide consisting of six  $\alpha$ -1,4-linked D-glucopyranosyl units produced by the action of cyclodextrin glucosyltransferase (CGTase, EC 2.4.1.19) on hydrolyzed starch. Recovery and purification of  $\alpha$ -cyclodextrin may be carried out using one of the following procedures: precipitation of a complex of  $\alpha$ -cyclodextrin with 1-decanol, dissolution in water at elevated temperature and reprecipitation, steam-stripping of the complexant, and crystallisation of  $\alpha$ -cyclodextrin from the solution; or chromatography with ion-exchange or gel filtration followed by crystallisation of  $\alpha$ -cyclodextrin from the purified mother liquor; or membrane separation methods such as ultrafiltration and reverse osmosis: Description: Virtually odourless, white or almost white crystalline solid.

Synonyms: α-cyclodextrin, α-dextrin, cyclohexaamylose,

cyclomaltohexaose, α-cycloamylase Chemical name: Cyclohexaamylose

CAS No.: 10016-20-3

Chemical formula:  $(C_6H_{10}O_5)_6$ Formula weight: 972,85 Assay:  $\geq$  98 % (dry basis)

## **Identification:**

Melting range: Decomposes above 278 °C

Solubility: Freely soluble in water; very slightly soluble in ethanol Specific rotation:  $[\alpha]_D^{25}$ : Between +145° and +151° (1 % solution) Chromatography: The retention time for the major peak in a liquid chromatogram of the sample corresponds to that for  $\alpha$ -cyclodextrin in a chromatogram of reference  $\alpha$ -cyclodextrin (available from *Consortium für Elektrochemische Industrie GmbH, München, Germany or Wacker Biochem Group, Adrian, MI, USA*) using the conditions described in the METHOD OF ASSAY

## **Purity:**

Water:  $\leq 11$  % (Karl Fischer Method) Residual complexant:  $\leq 20$  mg/kg

(1-decanol)

Reducing substances:  $\leq 0.5$  % (as glucose)

Sulphated ash:  $\leq 0.1 \%$ Lead:  $\leq 0.5 \text{ mg/kg}$ **Method of assay:** 

Determine by liquid chromatography using the following conditions: Sample solution: Weigh accurately about 100 mg of test sample into a 10 ml volumetric flask and add 8 ml of deionised water. Dissolve the sample completely using an ultra-sonification bath (10-15 min) and dilute to the mark with purified deionised water. Filter through a 0,45-micrometer filter

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Reference solution: Weigh accurately about 100 mg of α-cyclodextrin into a 10 ml volumetric flask and add 8 ml of deionised water. Dissolve the sample completely using an ultra-sonification bath and dilute to the mark with purified deionised water.

Chromatography: Liquid chromatograph equipped with a refractive index detector and an integrating recorder.

Column and packing: Nucleosil-100-NH<sub>2</sub> (10 µm) (Macherey & Nagel

Co. Düren, Germany) or similar

Length: 250 mm Diameter: 4 mm Temperature: 40 °C

Mobile phase: acetonitrile/water (67/33, v/v)

Flow rate: 2,0 ml/min Injection volume: 10 ul

Procedure: Inject the sample solution into the chromatograph, record the chromatogram, and measure the area of the  $\alpha$ -CD peak. Calculate the

percentage of  $\alpha$ -cyclodextrin in the test sample as follows: %  $\alpha$ -cyclodextrin (dry basis) =  $100 \times (A_S/A_R) (W_R/W_S)$ 

where

 $A_S$  and  $A_R$  are the areas of the peaks due to  $\alpha$ -cyclodextrin for the sample solution and reference solution, respectively.

 $W_S$  and  $W_R$  are the weights (mg) of the test sample and reference  $\alpha$ cyclodextrin, respectively, after correcting for water content.

## y-cyclodextrin

## **Description/Definition:**

A non-reducing cyclic saccharide consisting of eight  $\alpha$ -1,4-linked D-glucopyranosyl units produced by the action of cyclodextrin glucosyltransferase (CGTase, EC 2.4.1.19) on hydrolysed starch. Recovery and purification of  $\gamma$ -cyclodextrin may be carried out by precipitation of a complex of γ-cyclodextrin with 8-cyclohexadecen-1one, dissolution of the complex with water and n-decane, steam-stripping of the aqueous phase and recovery of gamma-CD from the solution by crystallisation.

Virtually odourless, white or almost white crystalline solid Synonyms:  $\gamma$ -cyclodextrin,  $\gamma$ -dextrin, cyclooctaamylose,

cyclomaltooctaose, y-cycloamylase Chemical name: Cyclooctaamylose

CAS number: 17465-86-0 Chemical formula: (C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>)<sub>8</sub> Assay:  $\geq$  98 % (dry basis)

## **Identification:**

Melting range: Decomposes above 285 °C

Solubility: Freely soluble in water; very slightly soluble in ethanol Specific rotation:  $[\alpha]_D^{25}$ : between + 174° and + 180° (1 % solution)

**Purity:** 

Water: ≤ 11 %

Residual complexant (8-cyclohexadecen-1-one (CHDC)):  $\leq 4 \text{ mg/kg}$ 

- Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
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Residual solvent (n-decane): $\leq 6 \text{mg/kg}$
Reducing substances: $\leq 0.5 \%$ (as glucose)
Sulphated ash: $\leq 0,1 \%$

## **Dextran** preparation produced by Leuconostoc mesenteroides

#### 1. **Powdered form:**

Carbohydrates: 60 % with: (Dextran: 50 %, Mannitol: 0,5 %,

Fructose: 0,3 %, Leucrose: 9,2 %)

Protein: 6.5 % Lipid: 0,5 % Lactic acid: 10 % Ethanol: traces Ash: 13 % Moisture: 10 %

#### 2. Liquid form:

Carbohydrates: 12 % with: (Dextran: 6,9 %, Mannitol: 1,1 %,

Fructose: 1,9 %, Leucrose: 2,2 %)

Protein: 2,0 % Lipid: 0,1 % Lactic acid: 2.0 % Ethanol: 0,5 % Ash: 3,4 % Moisture: 80 %

## Diacylglycerol oil of plant origin

## **Description/Definition:**

Manufactured from glycerol and fatty acids derived from edible vegetable oils, in particular from soybean oil (Glycine max) or rapeseed oil (Brassica campestris, Brassica napus) using a specific enzyme.

## **Acylglycerol Distribution:**

Diacylglycerols (DAG): ≥ 80 %

1,3-Diacylglycerols (1,3-DAG):  $\geq$  50 %

Triacylglycerols (TAG):  $\leq 20 \%$ Monoacylglycerols (MAG):  $\leq 5.0 \%$ 

## Fatty Acid Composition (MAG, DAG, TAG):

Oleic acid (C18:1): 20-65 % Linoleic acid (C18:2): 15-65 % Linolenic acid (C18:3):  $\leq 15 \%$ Saturated fatty acids: ≤ 10 %

## Others:

Acid value:  $\leq 0.5 \text{ mg KOH/g}$ Moisture and volatile:  $\leq 0.1 \%$ Peroxide value (PV):  $\leq 1.0$  meg/kg

Unsaponifiables:  $\leq 2.0 \%$ Trans fatty acids≤ 1,0 %

MAG = monoacylglycerols, DAG = diacylglycerols, TAG =

triacylglycerols

## (DHC)

## **Dihydrocapsiate** | **Description**/**Definition**:

- Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012,
- Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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	Dihydrocapsiate is synthesised by enzyme-catalysed esterification of vanillyl alcohol and 8-methylnonanoic acid. Following the esterification dihydrocapsiate is extracted with n-hexane. Viscous to colourless to yellow liquid Chemical formula: $C_{18}$ $H_{28}$ $O_4$ CAS No: 205687-03-2 <b>Physical-chemical properties:</b> Dihydrocapsiate: $> 94\%$ 8-Methylnonanoic acid: $< 6,0\%$ Vanillyl acohol: $< 1,0\%$ Other synthesis related substances: $< 2,0\%$
Dried extract of Lippia citriodora from cell cultures	1
Echinacea angustifolia extract from cell cultures	<b>Description/Definition:</b> Extract of the roots of <i>Echinacea angustifolia</i> obtained from plant tissue culture which is substantially equivalent to a root extract from <i>Echinacea angustifolia</i> obtained in ethanol-water titrated to 4 % echinacoside.
Echinacea	Description/Definition:
purpurea extract from cell cultures	Dried extract of <i>Echinacea purpurea</i> from cell cultures HTN <sup>®</sup> Vb
Echium plantagineum oil	<b>Description/Definition:</b> Echium oil is the pale yellow product obtained by refining oil extracted from the seeds of <i>Echium plantagineum</i> L. Stearidonic acid: $\geq 10$ % w/w of total fatty acids Trans fatty acids: $\leq 2,0$ % (w/w of total fatty acids) Acid value: $\leq 0,6$ mg KOH/g Peroxide value (PV): $\leq 5,0$ meq O <sub>2</sub> /kg Unsaponifiable content: $\leq 2,0$ % Protein content (total nitrogen): $\leq 20$ μg/ml Pyrrolizidine alkaloids: Not detectable with a detection limit 4,0 μg/kg
Epigallocatechin gallate as a purified extract from green tea leaves (Camellia sinensis)	Description/Definition: A highly purified extract from the leaves of green tea ( <i>Camellia sinensis</i> ( <i>L.</i> ) <i>Kuntze</i> ) in the form of a fine, off-white to pale pink powder. It is composed of a minimum of 90 % epigallo-catechin gallate (EGCG), and has a melting point between approx. 210 and 215 °C Appearance: off-white to pale pink powder Chemical name: polyphenol (-) epigallocatechin-3-gallate Synonyms: epigallocatechin gallate (EGCG) CAS No.: 989-51-5 INCI name: epigallocatechin gallate
a Commission Regul	Molecular mass: 458,4 g/mol

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

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Loss on drying: max 5,0 %

**Heavy metals:** 

Arsenic: max 3,0 ppm Lead: max 5,0 ppm

Assay:

Min. 94 % EGCG (on dry material)

max. 0,1 % caffeine

Solubility: EGCG is fairly soluble in water, ethanol, methanol and

acetone

## L-ergothioneine

## **Definition**

Chemical name (IUPAC): (2S)-3-(2-thioxo-2,3-dihydro-1*H*-imidazol-4-

yl)-2-(trimethylammonio)-Propanoate Chemical formula:  $C_9H_{15}N_3O_2S$ 

Molecular mass: 229,3 Da CAS No.: 497-30-3

Parameter	Specification	Method
Appearance	White powder	Visual
Optical rotation	$[\alpha]_D \ge (+) 122^{\circ}$ $(c = 1, H_2O)^{a)}$	Polarimetry
Chemical purity	≥ 99,5 % ≥ 99,0 %	HPLC [Eur. Ph. 2,2.29] 1H-NMR
Identification	Compliant with the structure C: 47,14 ± 0,4 % H: 6,59 ± 0,4 % N: 18,32 ± 0,4 %	1H-NMR Elemental analysis
Total residual solvents (methanol, ethyl acetate, isopropanol, ethanol)	[Eur. Ph. 01/2008:50400] < 1 000 ppm	Gas chromatography [Eur. Ph. 01/2008:20424]
Loss on drying	Internal standard < 0,5 %	[Eur. Ph. 01/2008:20232]
Impurities	< 0,8 %	HPLC/GPC or 1H-NMR
Heavy metals <sup>b) c</sup>	)	
Lead	< 3,0 ppm	ICP/AES
Cadmium	< 1,0 ppm	(Pb, Cd)
Mercury	< 0,1 ppm	Atomic fluorescence (Hg)

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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${f Microbiological\ specifications}^{b)}$			
Total viable aerobic count (TVAC)	$\leq 1 \times 10^3 \text{ CFU/g}$	[Eur. Ph. 01/2011:50104]	
Total yeast and mould count (TYMC)	$\leq 1 \times 10^2 \text{ CFU/g}$		
Escherichia coli	Absence in 1 g		

Eur. Ph.: European Pharmacopoeia; 1H-NMR: proton nuclear magnetic resonance; HPLC: high-performance liquid chromatography; GPC: gel permeation chromatography; ICP/AES: Inductively coupled plasma atomic emission spectroscopy;

CFU: colony-forming units.

- a) Lit.  $[\alpha]_D = (+) 126.6^\circ (c = 1, H_2O)$
- b) Analyses conducted on each batch
- c) Maximum levels in accordance with Regulation (EC) No 1881/2006

## Ferric Sodium EDTA

## **Description/Definition:**

Ferric Sodium EDTA (ethylenediaminetetraacetic acid) is an odourless free-flowing, yellow to brown powder with a chemical purity of more than 99 % (w/w). It is freely soluble in water.

Chemical formula: C<sub>10</sub>H<sub>12</sub>FeN<sub>2</sub>NaO<sub>8</sub> \* 3H<sub>2</sub>O

Chemical characteristics: pH of 1 % solution: 3,5-5,5

Îron: 12,5-13,5 % Sodium: 5,5 % Water: 12,8 %

Organic matter (CHNO): 68,4 %

EDTA: 65,5-70,5 %

Water insoluble matter:  $\leq 0.1 \%$ Nitrilo-triacetic acid:  $\leq 0.1 \%$ 

## Ferrous ammonium phosphate

## **Description/Definition:**

Ferrous ammonium phosphate is a grey/green fine powder, practically insoluble in water and soluble in dilute mineral acids.

CAS No.: 10101-60-7

Chemical formula: FeNH<sub>4</sub>PO<sub>4</sub> Chemical characteristics:

pH of 5 % suspension in water: 6,8-7,8

Iron (total): ≥ 28 % Iron (II): 22-30 % (w/w) Iron (III): ≤ 7,0 % (w/w) Ammonia: 5-9 % (w/w)

Water:  $\leq 3.0 \%$ 

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

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# Fish peptides from Sardinops sagax

## **Description/Definition:**

The novel food ingredient is a peptide mixture, which is obtained by an alkaline protease-catalysed hydrolysis of fish (*Sardinops sagax*) muscle, subsequent isolation of the peptide fraction by column chromatography, concentration under vacuum and spray drying.

Yellowish white powder

Peptides ( $^1$ ) (short chain peptides, dipeptides and tripeptides with a molecular weight of less than 2 kDa):  $\geq$  85 g/100 g

Val-Tyr (dipeptide): 0,1-0,16 g/100 g

Ash:  $\leq 10 \text{ g}/100 \text{ g}$ Moisture:  $\leq 8 \text{ g}/100 \text{ g}$ 

## (1) Kjeldahl method

## Flavonoids from Glycyrrhiza glabra

## **Description/Definition:**

Flavonoids derived from the roots or rootstock of *Glycyrrhiza glabra* L. are extracted with ethanol followed by further extraction of this ethanolic extract with medium-chain triglycerides. It is a dark-brown coloured liquid, containing 2,5 % to 3,5 % of glabridin.

Moisture: < 0,5 % Ash: < 0,1 %

Peroxide value (PV): < 0,5 meq/kg Glabridin: 2 5-3 5 % of fat

Glabridin: 2,5-3,5 % of fat Glycyrrhizinic acid: < 0,005 %

Fat including polyphenol-type substances: ≥ 99 %

Protein: < 0,1 %

Carbohydrates: not detectable

## Fucoidan extract from the seaweed Fucus vesiculosus

## **Description/Definition:**

Fucoidan from the seaweed *Fucus vesiculosus* is extracted using aqueous extraction in acidic solution and filtration processes without the use of organic solvents. The resulting extract is concentrated and dried to yield the fucoidan extract with the following specifications:

Off-white to brown powder

Odour and Taste: Bland odour and taste Moisture: < 10 % (105 °C for 2 hours) pH value: 4,0-7,0 (1 % suspension at 25 °C)

**Heavy metals:** 

Arsenic (inorganic): < 1,0 ppm

Cadmium: < 3,0 ppm Lead: < 2,0 ppm Mercury: < 1,0 ppm **Microbiological criteria:** 

Total aerobic microbial count: < 10 000 CFU/g

Yeast and mould count: < 100 CFU/g Total enterobacteria count: Absence/g

Escherichia coli: Absence/g Salmonella: Absence/10 g

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Staphylococcus aureus: Absence/g

Composition of the two permitted types of extracts, based on the level of

fucoidan: Extract 1:

Fucoidan: 75-95 % Alginate: 2,0-5,5 %

Polyphloroglucinol: 0,5-15 %

Mannitol: 1-5 %

Natural salts/Free Minerals: 0,5-2,5 % Other carbohydrates: 0,5-1,0 %

Protein: 2,0-2,5 %

Extract 2:

Fucoidan: 60-65 % Alginate: 3,0-6,0 %

Polyphloroglucinol: 20-30 %

Mannitol: < 1,0 %

Natural salts/Free Minerals: 0,5-2,0 % Other carbohydrates: 0,5-2,0 %

Protein: 2,0-2,5 %

## Fucoidan extract from the seaweed Undaria pinnatifida

## **Description/Definition:**

Fucoidan from seaweed *Undaria pinnatifida* is extracted using aqueous extraction in acidic solution and filtration processes without the use of organic solvents. The resulting extract is concentrated and dried to yield the fucoidan extract with the following specifications:

Off-white to brown powder

Odour and Taste: Bland odour and taste Moisture: < 10 % (105 °C for 2 hours) pH value: 4,0-7,0 (1 % suspension at 25 °C)

**Heavy metals:** 

Arsenic (inorganic): < 1,0 ppm

Cadmium: < 3,0 ppm Lead: < 2,0 ppm Mercury: < 1,0 ppm **Microbiology:** 

Total aerobic microbial count: < 10 000 CFU/g

Yeast and mould count: < 100 CFU/g Total enterobacteria count: Absence/g

Escherichia coli: Absence/g Salmonella: Absence/10 g

Staphylococcus aureus: Absence/g

Composition of the two permitted types of extracts, based on the level of

fucoidan: Extract 1:

Fucoidan: 75-95 % Alginate: 2,0-6,5 %

Polyphloroglucinol: 0,5-3,0 %

Mannitol: 1-10 %

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

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Natural salts/Free Minerals: 0,5-1,0 %

Other carbohydrates: 0,5-2,0 %

Protein: 2,0-2,5 %

Extract 2:

Fucoidan: 50-55 % Alginate: 2,0-4,0 %

Polyphloroglucinol: 1,0-3,0 %

Mannitol: 25-35 %

Natural salts/Free Minerals: 8-10 % Other carbohydrates: 0,5-2,0 %

Protein: 1,0-1,5 %

### 2'-

## **Fucosyllactose** (synthetic)

### **Definition:**

Chemical name:  $\alpha$ -L-Fucopyranosyl- $(1\rightarrow 2)$ - $\beta$ -D-galactopyranosyl-

(1→4)- D-glucopyranose Chemical formula:  $C_{18}H_{32}O_{15}$ 

CAS No: 41263-94-9

Molecular weight: 488,44 g/mol

## **Description:**

2'-fucosyllactose is a white to off-white powder that is produced by a

chemical synthesis process.

## **Purity:**

2'-Fucosyllactose:  $\geq$  95 % D-Lactose:  $\leq$  1,0 w/w % L-Fucose:  $\leq$  1,0 w/w %

Difucosyl- D-lactose isomers:  $\leq 1.0$  w/w % 2'-Fucosyl- D-lactulose:  $\leq 0.6$  w/w % pH (20 °C, 5 % solution): 3,2-7,0

Water (%):  $\leq 9.0$  % Ash, sulphated:  $\leq 0.2$  % Acetic acid:  $\leq 0.3$  %

Residual solvents (methanol, 2-propanol, methyl acetate, acetone):

 $\leq$  50,0 mg/kg singly,  $\leq$  200,0 mg/kg in combination

Residual proteins:  $\leq 0.01 \%$ 

## **Heavy Metals:**

Palladium: ≤ 0,1 mg/kg Nickel: ≤ 3,0 mg/kg **Microbiological criteria:** 

Aerobic mesophilic bacteria total count: ≤ 500 CFU/g

Yeasts and Moulds: ≤ 10 CFU/g Residual endotoxins: ≤ 10 EU/mg

### 2'-

# Fucosyllactose (microbial source)

### **Definition:**

Chemical name:  $\alpha$ -L-Fucopyranosyl- $(1\rightarrow 2)$ - $\beta$ -D-galactopyranosyl-

(1→4)-D-glucopyranose Chemical formula:  $C_{18}H_{32}O_{15}$ 

CAS No: 41263-94-9

Molecular weight: 488,44 g/mol

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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### Source:

Genetically modified strain of *Escherichia coli* K-12

## **Description:**

2'-Fucosyllactose is a white to offwhite powder that is produced by a microbial process.

## **Purity:**

2'-Fucosyllactose:  $\geq 90 \%$ D-Lactose:  $\leq 3,0 \%$ L-Fucose:  $\leq 2,0$ 

Difucosyl-D-lactose:  $\leq$  2,0 % 2'-Fucosyl-D-lactulose:  $\leq$  1,0 % pH (20 °C, 5 % solution): 3,0-7,5

Water:  $\leq 9.0 \%$ 

Sulphated ash:  $\leq 2.0 \%$ Acetic acid:  $\leq 1.0 \%$ 

Residual proteins: ≤ 0,01 % Microbiological criteria:

Aerobic mesophilic bacteria total

count: ≤ 3 000 CFU/g Yeasts: ≤ 100 CFU/g Moulds: ≤ 100 CFU/g Endotoxins: ≤ 10 EU/mg

### Source:

Genetically modified strain of *Escherichia coli* BL21

## **Description:**

2'-Fucosyllactose is a white to off white powder and the liquid concentrate (45 %  $\pm$  5 % w/v) aqueous solution is a colourless to slight yellow clear aqueous solution. 2'-Fucosyllactose is produced by a microbiological process.

## **Purity:**

2'-Fucosyllactose: ≥ 90 %

Lactose:  $\leq 5.0 \%$ Fucose:  $\leq 3.0 \%$ 

3-Fucosyllactose: ≤ 5,0 % Fucosylgalactose: ≤ 3,0 % Difucosyllactose: ≤ 5,0 %

Glucose:  $\leq 3.0 \%$ Galactose:  $\leq 3.0 \%$ Water:  $\leq 9.0 \%$  (powder) Ash, sulphated:  $\leq 0.5 \%$  (powder

and liquid)

Residual proteins:  $\leq 0.01 \%$  (powder and liquid)

## **Heavy Metals:**

Lead:  $\leq 0.02$  mg/kg (powder and

liquid);

Arsenic:  $\leq 0.2 \text{ mg/kg}$  (powder and

liquid)

Cadmium:  $\leq 0.1 \text{ mg/kg}$  (powder

and liquid)

Mercury:  $\leq 0.5$  mg/kg (powder and

liquid)

## Microbiological criteria:

Total plate count:  $\leq 10^4$  CFU/g (powder),  $\leq 5\,000$  CFU/g (liquid) Yeasts and Moulds:  $\leq 100$  CFU/g (powder);  $\leq 50$  CFU/g (liquid) Enterobacteriaceae/Coliforms: absence in 11g (powder and liquid) Salmonella: negative/100 g (powder), negative/200 ml (liquid) Cronobacter: negative/100 g (powder), negative/200 ml (liquid)

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Galacto- oligosaccharide			
Glucosamine HCl from Aspergillus niger and genetically modified strain of E. coli K-12	White crystalline odourless powder Molecular formula: $C_6H_{13}NO_5 \cdot HCl$ Relative molecular mass: 215,63 g/mol D-Glucosamine HCl 98,0-102,0 % of reference standard (HPLC) Specific rotation + $70,0^{\circ}$ - + $73,0^{\circ}$		
Glucosamine sulphate KCl from Aspergillus niger and genetically modified strain of E. coli K-12	White crystalline odourless powder Molecular formula: $(C_6H_{14}NO_5)_2SO_4 \cdot 2KCl$ Relative molecular mass: $605,52$ g/mol D-Glucosamine Sulphate 2KCl 98,0-102,0 % of reference standard (HPLC) Specific Rotation +50,0° to +52,0°		
Glucosamine sulphate NaCl from Aspergillus niger and genetically modified strain of E. coli K-12	White crystalline odourless powder Molecular formula: $(C_6H_{14}NO_5)_2SO_4 \cdot 2NaCl$ Relative molecular mass: $573,31$ g/mol D-Glucosamine HCl: $98-102$ % of reference standard (HPLC) Specific Optical Rotation: $+52^{\circ}$ - $+54^{\circ}$		
Guar Gum  a Commission Regu	Description/Definition: Native guar gum is the ground endosperm of seeds from natural strains of guar <i>Cyamopsis tetragonolobus</i> L. Taub. ( <i>Leguminosae</i> family). It consists of a high molecular weight polysaccharide, primarily composed of galactopyranose and mannopyranose units combined ulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in		

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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through glycosidic linkages, which may be described chemically as a galactomannan (galactomannan content not less than 75 %).

Appearance: White to yellowish powder

Molecular weight: Between 50 000 – 8 000 000 Daltons

CAS number: 9000-30-0 Einecs Number: 232-536-8

Purity: As specified by Commission Regulation (EU) No 231/2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council<sup>a</sup> & by Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins<sup>b</sup>.

## Physico-chemical properties:

Powder

Shelf-life: 2 years Colour: White Odour: Light

Average diameter of particles: 60-70µm

Moisture: Max 15 % Viscosity \* at 1 hour —

Viscosity \* at 2 hours: Min 3 600 mPa.s Viscosity \* at 24 hours: Min 4 000 mPa.s Solubility: Soluble in hot and cold water

pH for 10g/L, at 25 °C - 6-7,5

**Flakes** 

Useful life: 1 year

Colour: White/off white with absence or minimal presence of black spots

Odour: Light

Average diameter of particles: 1-10 mm

Moisture: Max 15 %

Viscosity \* at 1 hour: Min 3 000 mPa.s

Viscosity \* at 2 hours — Viscosity \* at 24 hours —

Solubility — Soluble in hot and cold water

pH for 10g/L, at 25 °C - 5-7,5

(\*) The measurements of viscosity are carried out under the following conditions: 1 %, 25 °C, 20 rpm

## Heat-treated milk products fermented with Bacteroides xylanisolvens

## **Description/Definition:**

Heat-treated fermented milk products are produced with *Bacteroides xylanisolvens* (DSM 23964) as starter culture.

Semi-skimmed milk (between 1,5 % and 1,8 % fat) or skimmed milk (0,5 % fat or less) is pasteurised or ultra-heat-treated before starting the fermentation with *Bacteroides xylanisolvens* (DSM 23964). The resulting fermented milk product is homogenised and then heat-treated to inactivate *Bacteroides xylanisolvens* (DSM 23964). The final product

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, n. 1)
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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does not contain viable cells of *Bacteroides xylanisolvens* (DSM 23964) (<sup>1</sup>).

(1) Modified DIN EN ISO 21528-2.

## Hydroxytyrosol

## **Description/Definition:**

Hydroxytyrosol is a pale yellow viscous liquid obtained by chemical

synthesis

Molecular formula: C<sub>8</sub>H<sub>10</sub>O<sub>3</sub> Molecular weight: 154,6 g/mol

CAS No: 10597-60-1 Moisture ≤ 0,4 % Odour: Characteristic Taste: Slightly bitter

Solubility (water): Miscible with water

pH: 3,5-4,5

Refractive Index: 1,571-1,575

**Purity:** 

Hydroxytyrosol:  $\geq$  99 % Acetic acid:  $\leq$  0,4 %

Hydroxytyrosol acetate: ≤ 0,3 %

Sum of homovanillic acid, iso-homovanilic acid, and 3-

methoxy-4hydroxyphenylglycol:  $\leq 0.3 \%$ 

**Heavy Metals** 

Lead: ≤ 0,03 mg/kg Cadmium: ≤ 0,01 mg/kg Mercury: ≤ 0,01 mg/kg **Residual Solvents** 

Ethyl acetate:  $\leq$  25,0 mg/kg Isopropanol:  $\leq$  2,50 mg/kg Methanol:  $\leq$  2,00 mg/kg Tetrahydrofuran:  $\leq$  0,01 mg/kg

## Ice Structuring Protein type III HPLC 12

## **Description/Definition:**

The Ice Structuring Protein (ISP) preparation is a light-brown liquid produced by submerged fermentation of a genetically-modified strain of food-grade baker's yeast (*Saccharomyces cerevisiae*) in which a synthetic gene for the ISP has been inserted into the yeast's genome. The protein is expressed and secreted into the growth medium where it is separated from the yeast cells by micro-filtration and concentrated by ultra-filtration. As a result, the yeast cells are not transferred into the ISP preparation as such or under an altered form. The ISP preparation consists of native ISP, glycosylated ISP and proteins and peptides from the yeast and sugars as well as acids and salts commonly found in food. The concentrate is stabilised with 10 mM citric acid buffer.

Assay:  $\geq 5$  g/l active ISP

pH: 2,5-3,5 Ash: ≤ 2,0 %

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

DNA: Not detectable

## **Aqueous extract** of dried leaves of Ilex guayusa

## **Description/Definition:**

Dark brown liquid. Aqueous extracts of dried leaves of *Ilex guayusa*.

## **Composition:**

Protein: < 0.1 g/100 mlFat: < 0.1 g/100 ml

Carbohydrate: 0,2-0,3 g/100 ml Total sugars: < 0.2 g/100 mlCaffeine: 19,8-57,7 mg/100 ml Theobromine: 0,14-2,0 mg/100 ml Chlorogenic acids: 9,9-72,4 mg/100ml

## Isomaltooligosaccharide

## **Powder:**

Solubility (water) (%): > 99Glucose (% dry basis):  $\leq 5.0$ 

Isomaltose + DP3 to DP9 (% dry basis):  $\geq$  90

Moisture (%):  $\leq 4.0$ 

Sulphated ash(g/100 g):  $\leq 0.3$ 

**Heavy metals:** Lead (mg/kg):  $\leq 0.5$ Arsenic (mg/kg):  $\leq 0.5$ 

Syrup:

Dried solids (g/100 g): > 75 Glucose (% dry basis):  $\leq 5.0$ 

Isomaltose + DP3 to DP9 (% dry basis):  $\geq$  90

pH: 4 - 6

Sulphated ash(g/100 g):  $\leq 0.3$ 

**Heavy metals:** Lead (mg/kg):  $\leq 0.5$ Arsenic (mg/kg):  $\leq 0.5$ 

## **Isomaltulose**

## **Description/Definition:**

A reducing disaccharide that consists of one glucose and one fructose moiety linked by an alpha-1,6-glycosidic bond. It is obtained from sucrose by an enzymatic process. The commercial product is the monohydrate. Appearance: Virtually odourless, white or almost white

crystals with a sweet taste

Chemical name: 6-O-α-D-glucopyranosyl-D-fructofuranose,

monohydrate

CAS No.: 13718-94-0

Chemical formula: C<sub>12</sub>H<sub>22</sub>O<sub>11</sub> · H<sub>2</sub>O

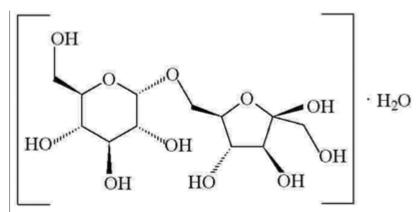
Structural formula

Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012,

Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)



Formula weight: 360,3 (monohydrate)

**Purity:** 

Assay:  $\geq$  98 % on the dry basis

Loss on drying:  $\leq 6.5 \%$  (60 °C, 5 hours)

Heavy metals: Lead:  $\leq 0.1 \text{ mg/kg}$ 

Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in FNP 5(1), 'Instrumental methods'

(1) Food and Nutrition Paper 5 Rev. 2 — Guide to specifications for general notices, general analytical techniques, identification tests, test solutions and other reference materials (JECFA), 1991, 322 pp., English, ISBN 92-5-102991-1.

## Lactitol

## **Description/Definition:**

Crystalline powder or colourless solution manufactured via catalytic hydrogenation of lactose. Crystalline products occur in anhydrous, monohydrate and dihydrate forms. Nickel is used as a catalyst.

Chemical name: 4-O-β-D-Galactopyranosyl-D-glucitol

Chemical formula: C<sub>12</sub>H<sub>24</sub>O<sub>11</sub> Molecular weight: 344,31 g/mol

CAS No: 585-86-4

**Purity:** 

Solubility (in water): Very soluble in water Specific rotation  $\left[\alpha\right]_{D}^{20} = +13^{\circ}$  to  $+16^{\circ}$ 

Assay:  $\geq$  95 % d.b (d.b — expressed on the dry weight basis)

Water:  $\le 10,5 \%$ 

Other polyols:  $\leq$  2,5 % d.b Reducing sugars:  $\leq$  0,2 % d.b Chlorides:  $\leq$  100 mg/kg d.b Sulphates:  $\leq$  200 mg/kg d.b Sulphated ash:  $\leq$  0,1 % d.b Nickel:  $\leq$  2,0 mg/kg d.b

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Arsenic:  $\leq$  3,0 mg/kg d.b Lead:  $\leq$  1,0 mg/kg d.b

## Lacto-Nneotetraose (synthetic)

## **Definition:**

Chemical name:  $\beta$ -D-Galactopyranosyl- $(1\rightarrow 4)$ -2-acetamido-2-deoxy- $\beta$ -D-glucopyranosyl- $(1\rightarrow 3)$ - $\beta$ -D-galactopyranosyl- $(1\rightarrow 4)$ - D-

glucopyranose

Chemical formula: C<sub>26</sub>H<sub>45</sub>NO<sub>21</sub>

CAS No: 13007-32-4

Molecular weight: 707,63 g/mol

## **Description:**

Lacto-*N*-neotetraose is a white to off-white powder. Produced by a chemical synthesis process and is isolated by crystallisation.

## **Purity:**

Assay (water free):  $\geq 96 \%$ 

D-Lactose:  $\leq 1,0 \%$ 

Lacto-N-triose II:  $\leq 0.3 \%$ 

Lacto-N-neotetraose fructose isomer: ≤ 0,6 %

pH (20 °C, 5 % solution): 5,0-7,0

Water:  $\leq 9.0 \%$ 

Ash, sulphated:  $\leq 0.4 \%$ Acetic acid:  $\leq 0.3 \%$ 

Residual solvents (methanol, 2-propanol, methyl acetate, acetone):

 $\leq$  50 mg/kg singly,  $\leq$  200 mg/kg in combination

Residual proteins: ≤ 0,01 % Palladium: ≤ 0,1 mg/kg Nickel: ≤ 3,0 mg/kg Microbiological criteria:

Aerobic mesophilic bacteria total count: ≤ 500 CFU/g

Yeasts: ≤ 10 CFU/g Moulds: ≤ 10 CFU/g

Residual endotoxins: ≤ 10 EU/mg

# Lacto-Nneotetraose (microbial source)

## **Definition:**

Chemical name:  $\beta$ -D-Galactopyranosyl- $(1\rightarrow 4)$ -2-acetamido-2-deoxy- $\beta$ -D-glucopyranosyl- $(1\rightarrow 3)$ - $\beta$ -D-galactopyranosyl- $(1\rightarrow 4)$ -D-glucopyranose

Chemical formula: C<sub>26</sub>H<sub>45</sub>NO<sub>21</sub>

CAS No: 13007-32-4

Molecular weight: 707,63 g/mol

## Source:

Genetically modified strain of Escherichia coli K-12

## **Description:**

Lacto-*N*-neotetraose is a white to off-white powder that is produced by a microbiological process. Lacto-*N*-neotetraose is isolated by crystallisation.

## **Purity:**

Assay (water free):  $\geq 92 \%$ 

D-Lactose: ≤ 3,0 %

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Lacto-N-triose II:  $\leq 3.0 \%$ 

para-Lacto-N-neohexaose: ≤ 3,0 %

Lacto-N-neotetraose fructose isomer: ≤ 1,0 %

pH (20 °C, 5 % solution): 4,0-7,0

Water:  $\leq 9.0 \%$ 

Ash, sulphated:  $\leq 0.4 \%$ 

Residual solvents (methanol):  $\leq 100 \text{ mg/kg}$ 

Residual proteins:  $\leq 0.01 \%$  Microbiological criteria:

Aerobic mesophilic bacteria total count: ≤ 500 CFU/g

Yeasts:  $\leq 10 \text{ CFU/g}$ Moulds:  $\leq 10 \text{ CFU/g}$ 

Residual endotoxins: ≤ 10 EU/mg

## Lucerne leaf extract from *Medicago sativa*

## **Description/Definition:**

The Lucerne (*Medicago sativa* L.) is processed within 2 hours after harvest. It is chopped and crushed. By passing through an oleaginous-type press, the Lucerne provides a fibrous residue and press juice (10 % of dry matter). The dry matter of this juice contains about 35 % of crude protein. The press juice (pH 5,8-6,2) is neutralised. Preheating and vapour injection allows coagulation of proteins associated with carotenoid and chlorophyll pigments. The protein precipitate is separated by centrifugation and thereafter dried. After adding ascorbic acid the Lucerne protein concentrate is granulated and stored in inert gas or in cold storage.

## **Composition:**

Protein: 45-60 % Fat: 9-11 %

Free carbohydrates (soluble fibre): 1-2 % Polysaccharides (insoluble fibre): 11-15 %

including cellulose: 2-3 %

Minerals: 8-13 % Saponins: < 1,4 %

Isoflavones:  $\leq 350 \text{ mg/kg}$ Coumestrol:  $\leq 100 \text{ mg/kg}$ Phytates:  $\leq 200 \text{ mg/kg}$ L-canavanine:  $\leq 4,5 \text{ mg/kg}$ 

## Lycopene

## **Description/Definition:**

Synthetic lycopene is produced by the Wittig condensation of synthetic intermediates commonly used in the production of other carotenoids used in food. Synthetic lycopene consists of  $\geq 96$  % lycopene and minor quantities of other related carotenoid components. Lycopene is presented either as a powder in a suitable matrix or an oily dispersion. The colour is dark red or red-violet. Antioxidative protection has to be assured.

Chemical name: Lycopene

CAS No.: 502-65-8 (all-trans lycopene)

Chemical formula: C<sub>40</sub>H<sub>56</sub>

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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	Formula weight: 536,85 Da
Lycopene from Blakeslea trispora	<b>Description/Definition:</b> The purified lycopene from <i>Blakeslea trispora</i> consists of $\geq 95$ % lycopene and $\leq 5$ % other carotenoids. It is presented either as a powder in a suitable matrix or an oily dispersion. The colour is dark red or redviolet. Anti-oxidative protection has to be assured. Chemical name: Lycopene CAS No.: 502-65-8 (all trans lycopene) Chemical formula: C <sub>40</sub> H <sub>56</sub> Formula weight: 536,85 Da
Lycopene from tomatoes	<b>Description/Definition:</b> The purified lycopene from tomatoes ( <i>Lycopersicon esculantum</i> L.) consists of ≥ 95 % lycopene and ≤ 5 % other carotenoids. It is presented either as a powder in a suitable matrix or an oily dispersion. The colour is dark red or red-violet. Anti-oxidative protection has to be assured. Chemical name: Lycopene CAS No.: 502-65-8 (all trans lycopene) Chemical formula: $C_{40}H_{56}$ Formula weight: 536,85 Da
Lycopene oleoresin from tomatoes	Description/Definition: Lycopene oleoresin from tomatoes is obtained by solvent extraction of ripe tomatoes ( <i>Lycopersicon esculentum Mill.</i> ) with subsequent removal of the solvent. It is a red to dark brown viscous, clear liquid. Total lycopene: 5-15 % Thereof trans-lycopene: 90-95 % Total carotenoids (calculated as lycopene): 6,5-16,5 % Other carotenoids: 1,75 % (Phytoene/phytofluene/β-carotene): (0,5-0,75/0,4-0,65/0,2-0,35 %) Total tocopherols: 1,5-3,0 % Unsaponifiable matter: 13-20 % Total fatty acids: 60-75 % Water (Karl Fischer): ≤ 0,5 %
Magnesium citrate malate	Description/Definition:  Magnesium citrate malate is a white to yellowish-white, amorphous powder.  Chemical formula: $Mg_5(C_6H_5O_7)_2(C_4H_4O_5)_2$ Chemical name: Pentamagnesium di-(2-hydroxybutanedioate)-di-(2-hydroxypropane-1,2,3-tricarboxylate)  CAS No.: 1259381-40-2  Molecular weight: 763,99 Daltons (anhydrous)  Solubility: Freely soluble in water (about 20 g in 100 ml)  Description of the physical state: Amorphous powder  Assay magnesium: 12,0-15,0 %  Loss on drying (120 °C/4 hours): ≤ 15 %  Colour (solid): White to yellowish-white

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Colour (20 % aqueous solution): Colourless to yellowish Appearance (20 % aqueous solution): Clear solution

pH (20 % agueous solution): Approx. 6,0

#### **Impurities:**

Chloride:  $\leq 0.05 \%$ Sulphate:  $\leq 0.05 \%$ Arsenic:  $\leq 3.0$  ppm Lead:  $\leq 2.0$  ppm Cadmium:  $\leq 1$  ppm Mercury:  $\leq 0.1$  ppm

#### Magnolia Bark Extract

#### **Description/Definition:**

Magnolia bark extract is obtained from the bark of the plant *Magnolia officinalis* L. and produced with supercritical carbon dioxide. The bark is washed and oven dried to reduce moisture content before being crushed and extracted with supercritical carbon dioxide. The extract is dissolved in medical-grade ethanol and re-crystallised to yield magnolia bark extract.

Magnolia bark extract is mainly composed of two phenolic compounds, magnolol and honokiol.

Appearance: Light brownish powder

**Purity:** 

Magnolol:  $\geq 85,2 \%$ Honokiol:  $\geq 0,5 \%$ 

Magnolol & Honokiol: ≥ 94 %

Total Eudesmol: ≤ 2 % Moisture: 0,50 %

**Heavy metals:** 

Arsenic (ppm):  $\leq 0.5$ Lead (ppm):  $\leq 0.5$ 

Methyl eugenol (ppm):  $\leq 10$ Tubocurarine (ppm):  $\leq 2.0$ Total Alkaloid (ppm):  $\leq 100$ 

#### Maize-germ oil high in unsaponifiable matter

#### **Description/Definition:**

Maize-germ oil high in unsaponifiable matter is produced by vacuum distillation and it is different from refined maize-germ oil in the concentration of the unsaponifiable fraction (1,2 g in refined maize-germ oil and 10 g in 'maize-germ oil high in unsaponifiable matter').

#### **Purity:**

Unsaponifiable matter: > 9,0 g/100 g

Tocopherols:  $\geq 1.3$  g/100 g α-tocopherol (%): 10-25 % β-tocopherol (%): < 3.0 % γ-tocopherol (%): < 8.8 % δ-tocopherol (%): < 7.0 %

Sterols, triterpenic alcohols, methylsterols: > 6,5 g/100 g

Fatty acids in triglycerides:

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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palmitic acid: 10,0-20,0 % stearic acid: < 3,3 % oleic acid: 20,0-42,2 % linoleic acid: 34,0-65,6 % linolenic acid: < 2,0 % Acid value:  $\leq$  6,0 mg KOH/g

Peroxide value (PV):  $\leq 10 \text{ mEq O}_2/\text{kg}$ 

**Heavy metals:** 

Iron (Fe): < 1 500 μg/kg Copper (Cu): < 100 μg/kg

**Impurities:** 

Polycyclic aromatic hydrocarbons (PAH) Benzo(a)pyrene: < 2 μg/kg Treatment with active carbon is required to ensure that polycyclic aromatic hydrocarbons (PAH) are not enriched in the production of 'maize-germ oil high in unsaponifiable matter'

#### Methylcellulose

#### **Description/Definition:**

Methyl cellulose is cellulose obtained directly from natural strains of fibrous plant material and partially etherified with methyl groups.

Chemical name: Methyl ether of cellulose

Chemical formula: The polymers contain substituted anhydroglucose units with the following general formula:

C6H7O2(OR1)(OR2)(OR3) where R1, R2, R3 each may be one of the following:

— Н

— CH<sub>3</sub> or

- CH<sub>2</sub>CH<sub>3</sub>

Molecular weight: Macromolecules: from about 20 000 (n about 100) up to about 380 000 g/mol (n about 2 000)

Assay: Content not less than 25 % and not more than 33 % of methoxyl groups (-OCH $_3$ ) and not more than 5 % of hydroxyethoxyl groups (-OCH $_2$ CH $_2$ OH)

Slightly hygroscopic white or slightly yellowish or greyish odourless and tasteless, granular or fibrous powder.

Solubility: Swelling in water, producing a clear to opalescent, viscous, colloidal solution. Insoluble in ethanol, ether and chloroform. Soluble in glacial acetic acid.

#### **Purity:**

Loss on drying:  $\leq 10 \%$  (105 °C, 3 hours)

Sulphated Ash:  $\leq 1.5$  % determined at  $800 \pm 25$  °C

pH:  $\geq$  5,0 and  $\leq$  8,0 (1 % colloidal solution)

**Heavy metals:** 

Arsenic:  $\leq 3.0 \text{ mg/kg}$ Lead:  $\leq 2.0 \text{ mg/kg}$ Mercury:  $\leq 1.0 \text{ mg/kg}$ Cadmium:  $\leq 1.0 \text{ mg/kg}$ 

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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(6S)-5- Description/Definition:

methyltetrahydrofoliamical name: N-[4-[[[(6S)-2-amino-1,4,5,6,7,8-hexahydro-5-methyl-4-

acid,

oxo-6-pteridinyl]methyl]amino]benzoyl]-L-glutamic acid, glucosamine

**glucosamine** sa

salt Chemical formula: C<sub>32</sub>H<sub>51</sub>N<sub>9</sub>O<sub>16</sub>

Molecular weight: 817,80 g/mol (anhydrous)

CAS No.: 1181972-37-1

Appearance: Creamy to light-brown powder

**Purity:** 

Diastereoisomeric purity: At least 99 % of (6S)-5-methyltetrahydrofolic

acid

Glucosamine assay: 34-46 % in dry basis

5-Methyltetrahydrofolic acid assay: 54-59 % in dry basis

Water:  $\leq 8.0 \%$  **Heavy metals:** Lead:  $\leq 2.0 \text{ ppm}$ Cadmium:  $\leq 1.0 \text{ ppm}$ Mercury:  $\leq 0.1 \text{ ppm}$ Arsenic:  $\leq 2.0 \text{ ppm}$ Boron:  $\leq 10 \text{ ppm}$ 

Microbiological criteria:

Total aerobic microbial count: ≤ 100 CFU/g

Yeasts and moulds: ≤ 100 CFU/g *Escherichia coli*: Absence in 10g

#### Monomethylsilan Deichription/Definition:

(Organic Silicon)

Chemical name: Silanetriol, 1-methyl-

Chemical formula: CH<sub>6</sub>O<sub>3</sub>Si Molecular weight: 94,14 g/mol

CAS No: 2445-53-6

**Purity:** 

Organic Silicon (monomethylsilanetriol) preparation (aqueous solution):

Acidity (pH): 6,4-6,8 Silicon: 100-150 mg Si/l

Heavy metals: Lead:  $\leq 1,0~\mu g/l$ Mercury:  $\leq 1,0~\mu g/l$ Cadmium:  $\leq 1,0~\mu g/l$ Arsenic:  $\leq 3,0~\mu g/l$ 

**Solvents:** 

Methanol:  $\leq 5.0$  mg/kg (residual presence)

Mycelial extract from Shiitake

mushroom (Lentinula edodes)

#### **Description/Definition:**

The novel food ingredient is a sterile aqueous extract obtained from the mycelium of *Lentinula edodes* cultivated in a submerged fermentation. It is a light brown, slightly turbid liquid.

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Lentinan is a  $\beta$ -(1-3)  $\beta$ -(1-6)-D-glucan which has a molecular weight of approximately  $5 \times 10^5$  Daltons, a degree of branching of 2/5 and a triple helical tertiary structure.

#### Purity/Composition of the mycelial extract from Lentinula edodes:

Moisture: 98 % Dry matter: 2 %

Free glucose: < 20 mg/ml Total protein(<sup>1</sup>): < 0,1 mg/ml

N-containing constituents( $^2$ ): < 10 mg/ml

Lentinan: 0.8 - 1.2 mg/ml

(1) Bradford method

(2) Kjeldahl method

# Noni fruit juice (*Morinda citrifolia*)

#### **Description/Definition:**

Noni fruits (fruits of *Morinda citrifolia* L.) are pressed. The obtained juice is pasteurised. An optional fermentation step before or after the pressing may occur.

Rubiadin: ≤ 10 μg/kg Lucidin: ≤ 10 μg/kg

#### Noni fruit juice powder (Morinda citrifolia)

#### **Description/Definition:**

Seeds and skin of the sun-dried fruits of *Morinda citrifolia* are separated. The obtained pulp is filtered to separate juice from the flesh. Desiccation of the produced juice occurs in one or two ways:

Either by atomisation using maize maltodextrins, this mixture is obtained by keeping the rates of inflow of the juice and maltodextrins constant Or by zeodratation or drying and then mixing with an excipient, this process allows the juice to be dried initially and then mixed with maltodextrins (same amount as used in atomisation).

#### Noni fruit puree and concentrate (Morinda citrifolia)

#### **Description/Definition:**

The fruits of *Morinda citrifolia* are harvested by hand. Seeds and skin may be separated mechanically from the pureed fruits. After pasteurisation, the puree is packaged in aseptic containers and stored under cold conditions.

Morinda citrifolia concentrate is prepared from M. citrifolia puree by treatment with pectinolytic enzymes (50–60 °C for 1-2 h). Then the puree is heated to inactivate the pectinases and then immediately cooled. The juice is separated in a decanter centrifuge. Afterwards the juice is collected and pasteurised, prior to being concentrated in a vacuum evaporator from a brix of 6 to 8 to a brix of 49 to 51 in the final concentrate.

#### **Composition:**

Puree:

Moisture: 89-93 % Protein: < 0,6 g/100 g

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Fat:  $\leq 0.4 \text{ g}/100 \text{ g}$ Ash: < 1.0 g/100 g

Total carbohydrates: 5-10 g/100 g

Fructose: 0,5-3,82 g/100 g Glucose: 0,5-3,14 g/100 g Dietary fibre: < 0,5-3 g/100 g

5,15-dimethylmorindol (1):  $\leq 0,254 \,\mu\text{g/ml}$ 

Lucidin (1): Not detectable Alizarin (1): Not detectable Rubiadin (1): Not detectable

**Concentrate:** 

Moisture: 48-53 % Protein: 3-3,5 g/100 g Fat: < 0,04 g/100 g Ash: 4,5-5,0 g/100 g

Total carbohydrates: 37-45 g/100 g

Fructose: 9-11 g/100 g Glucose: 9-11 g/100 g Dietary fibre: 1,5-5,0 g/100 g

5,15-dimethylmorindol ( $^1$ ):  $\leq 0,254 \,\mu\text{g/ml}$ 

(1) By an HPLC-UV method developed and validated for the analysis of anthraquinones in Morinda citrifolia puree and concentrate. Limits of detection: 2,5 ng/ml (5,15 dimethylmorindol); 50,0 ng/ml (lucidin); 6,3 ng/ml (alizarin) and 62,5 ng/ml (rubiadin).

# Noni leaves (Morinda citrifolia)

#### **Description/Definition:**

After cutting, the leaves of *Morinda citrifolia* are subject to drying and roasting steps. The product has a particle size ranging from broken leaves to coarse powder with fines. It is of greenish brown to brown colour.

#### **Purity/Composition:**

Moisture: < 5,2 % Protein: 17- 20 % Carbohydrate: 55-65 %

Ash: 10-13 % Fat: 4-9 %

Oxalic acid: < 0,14 % Tannic acid: < 2,7 %

5,15-dimethylmorindol: < 47 mg/kg Rubiadin: non detectable,  $\le$  10 µg/kg Lucidin: non detectable,  $\le$  10 µg/kg

#### Noni fruit powder (Morinda citrifolia)

#### **Description/Definition:**

Noni fruit powder is made from pulped noni (*Morinda citrifolia L.*) fruits by freeze-drying. Fruits are pulped and seeds are removed. After freeze-drying during which water is removed from noni fruits, the remaining noni pulp is milled to a powder and encapsulated.

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

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**Purity/Composition** Moisture: 5,3-9 % Protein: 3,8-4,8 g/100 g Fat: 1-2 g/100 g Ash: 4,6-5,7 g/100 g

Total carbohydrates: 80-85 g/100 g

Fructose: 20,4-22,5 g/100 g Glucose: 22-25 g/100 g Dietary fibre: 15,4-24,5 g/100 g

5,15-dimethylmorindol ( $^1$ ):  $\leq 2,0 \,\mu g/ml$ 

By an HPLC-UV method developed and validated for the  $(^{1})$ analysis of anthraquinones in Morinda citrifolia fruit powder. Limits of detection: 2,5 ng/ml (5,15 dimethylmorindol)

#### Odontella aurita microalgae

Silicon: 3,3 %

Crystalline silica: max 0,1-0,3 % as impurity

#### Oil enriched with phytosterols/ phytostanols

#### **Description/Definition:**

Oil enriched with phytosterols/phytostanols is composed of an oil fraction and a phytosterol fraction.

#### **Acylglycerol Distribution:**

Free fatty acids (expressed as oleic acid):  $\leq 2.0 \%$ 

Monoacylglycerols (MAG):  $\leq 10 \%$ Diacylglycerols (DAG): ≤ 25 %

Triacylglycerols (TAG): Making up the balance

### **Phytosterol fraction:**

 $\beta$ -sitosterol:  $\leq 80 \%$ β-sitostanol: ≤ 15 % campesterol: ≤ 40 % campestanol:  $\leq 5.0 \%$ stigmasterol: ≤ 30 % brassicasterol ≤ 3,0 %

other sterols/stanols:  $\leq 3.0 \%$ 

#### Others:

Moisture and volatile:  $\leq 0.5 \%$ Peroxide value (PV): < 5,0 meg/kg

Trans fatty acids: ≤ 1 %

Contamination/Purity (GC-FID or equivalent method) of phytosterols/

phytostanols:

Phytosterols and phytostanols extracted from sources other than vegetable oil suitable for food have to be free of contaminants, best ensured by a purity of more than 99 %.

#### Oil extracted from squids

Acid value:  $\leq 0.5 \text{ KOH/g oil}$ 

Peroxide value (PV):  $\leq 5 \text{ meq O}_2/\text{kg oil}$ 

p-Anisidine value:  $\leq 20$ Cold test at 0 °C:  $\leq$  3 hours Moisture:  $\leq 0.1 \%$  (w/w)

Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012,

Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Unsaponifiable matter:  $\leq 5,0 \%$ Trans fatty acids:  $\leq 1,0 \%$ Docosahexaeonic acid:  $\geq 20 \%$ Eicosapentaenoic acid:  $\geq 10 \%$ 

#### Pasteurised fruit-based preparations produced using high-pressure treatment

Parameter	Target	Comments
Fruit storage before high- pressure treatment	Minimum 15 days at – 20 °C	Fruit harvested and stored in conjunction with good/hygienic agricultural and manufacturing practices
Fruit added	40 % to 60 % of thawed fruit	Fruit homogenised and added to other ingredients
рН	3,2 to 4,2	
<sup>o</sup> Brix	7 to 42	Assured by added sugars
$a_{\mathrm{w}}$	< 0,95	Assured by added sugars
Final storage	60 days maximum	Edquistalentaxistorange regimen for conventionally processed product

### Phosphated maize starch

#### **Description/Definition:**

Phosphated maize starch (phosphated distarch phosphate) is a chemically modified resistant starch derived from high amylose starch by combining chemical treatments to create phosphate cross-links between carbohydrate residues and esterified hydroxyl groups.

The novel food ingredient is a white or nearly white powder.

CAS No: 11120-02-8

Chemical formula:  $(C_6H_{10}O_5)_n [(C_6H_9O_5)_2PO_2H]x [(C_6H_9O_5)PO_3H_2]y$ 

n = number of glucose units; x, y = degrees of substitutionThe chemical characteristics of phosphated distarch phosphate:

Loss on drying: 10-14 %

pH: 4,5-7,5

Dietary fibre: ≥ 70 %

Starch: 7-14 % Protein: ≤ 0,8 % Lipids: ≤ 0,8 %

Residual bound phosphorus:  $\leq 0.4$  % (as phosphorus) 'high amylose

maize' as source

#### PhosphatidylserinDescription/Definition:

#### from fish phospholipids

The novel food ingredient is yellow to brown powder.

Phosphatidylserine is obtained from fish phospholipids by an enzymatic

transphosphorylation with the amino acid L-serine.

Specification of the phosphatidylserine product manufactured from fish phospholipids:

Moisture: < 5,0 % Phospholipids: ≥ 75 %

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- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Phosphatidylserine: ≥ 35 %

Glycerides: < 4,0 % Free L-serine: < 1,0 % Tocopherols: < 0,5 % (1)

Peroxide value (PV):  $\leq 5.0 \text{ meq O}_2/\text{kg}$ 

(1) Tocopherols may be added as antioxidants according to Commission Regulation (EU) No 1129/2011

#### PhosphatidylserinDescription/Definition:

#### from soya phospholipids

The novel food ingredient is off-white to light yellow powder. It is also available in liquid form with a clear brown to orange colour. The liquid form contains medium chain triacylglycerides (MCT) as a carrier. It contains lower levels of Phosphatidylserine due to the fact that it includes significant amounts of oil (MCT).

Phosphatidylserine from soya phospholipids is obtained through enzymatic transphosphatidylation of high-phosphatidylcholine soybean lecithin with the amino acid L-serine. Phosphatidylserine consists of a glycerophosphate skeleton conjugated with two fatty acids and L-serine via a phosphodiester linkage.

### Characteristics of Phosphatidylserine from soya phospholipids:

Powder form:

Moisture: < 2.0 %Phospholipids:  $\ge 85 \%$ Phosphatidylserine:  $\ge 61 \%$ 

Glycerides: < 2,0 % free L-serine: < 1,0 % Tocopherols: < 0,3 % Phytosterols: < 0,2 %

Liquid form:
Moisture: < 2,0 %
Phospholipids: ≥ 25 %
Phosphatidylserine: ≥ 20 %
Glycerides: not applicable
free L-serine: < 1,0 %
Tocopherols: < 0,3 %
Phytosterols: < 0,2 %

#### Phospholipid product containing equal amounts of

#### **Description/Definition:**

The product is manufactured through enzymatic conversion of soy lecithin. The phospholipid product is a highly concentrated, yellow-brown powder form of phosphatidylserine and phosphatidic acid at an equal level.

#### phosphatidylserin specification of the product:

and phosphatidic acid Moisture:  $\leq 2.0 \%$ 

Total phospholipids:  $\geq 70 \%$ Phosphatidylserine:  $\geq 20 \%$ Phosphatidic acid:  $\geq 20 \%$ 

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- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Glycerides:  $\leq 1,0 \%$ Free L-serine:  $\leq 1,0 \%$ Tocopherols:  $\leq 0,3 \%$ Phytosterols:  $\leq 2,0 \%$ 

Silicon dioxide is used with a maximum content of 1,0 %

## Phospholipides from egg yolk

85 % and 100 % pure Phospholipides from egg yolk

#### Phytoglycogen

**Description:** White to off-white powder which is an odourless, colourless, flavourless polysaccharide derived from non-GM sweet corn using conventional food processing techniques

**Definition:** Glucose polymer  $(C_6H_{12}O_6)n$  with linear linkages of  $\alpha(1-4)$  glycosidic bonds branched every 8 to 12 glucose units by  $\alpha(1-6)$  glycosidic bonds

### **Specifications:**

Carbohydrates: 97 %

Sugars: 0,5 % Fibre: 0,8 % Fat: 0,2 % Protein: 0,6 %

#### Phytosterols/ phytostanols

#### **Description/Definition:**

Phytosterols and phytostanols are sterols and stanols that are extracted from plants and may be presented as free sterols and stanols or esterified with food grade fatty acids.

**Composition** (with GC-FID or equivalent method):

 $\beta$ -sitosterol: < 81% $\beta$ -sitostanol: < 35%campesterol: < 40%campestanol: < 15%stigmasterol: < 30%brassicasterol: < 3,0%other sterols/stanols: < 3,0%

**Contamination/Purity** (GC-FID or equivalent method):

Phytosterols and phytostanols extracted from sources other than vegetable oil suitable for food have to be free of contaminants, best ensured by a purity of more than 99 % of the phytosterol/phytostanol ingredient.

#### Plum kernel oil

#### **Description/Definition:**

Plum kernel oil is a vegetable oil obtained by cold pressing of plum (*Prunus domestica*) kernels.

#### **Composition:**

Oleic acid (C18:1): 68 % Linoleic acid (C18:2): 23 %

γ-Tocopherol:80 % of total tocopherols β-Sitosterol: 80-90 % of total sterols Triolein: 40-55 % of triglycerides

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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	Cyanhydric acid: maximum 5 mg/kg oil
Potato proteins (coagulated) and hydrolysates thereof	Dry substance: $\geq 800 \text{ mg/g}$ Protein (N * 6,25): $\geq 600 \text{ mg/g}$ (dry substance) Ash: $\leq 400 \text{ mg/g}$ (dry substance) Glycoalkaloid (total): $\leq 150 \text{ mg/kg}$ Lysinoalanine (total): $\leq 500 \text{ mg/kg}$ Lysinoalanine (free): $\leq 10 \text{ mg/kg}$
Prolyl oligopeptidase (enzyme preparation)	Specification of the enzyme: Systematic name: Prolyl oligopeptidase Synonyms: Prolyl endopeptidase, proline-specific endopeptidase, endoprolylpeptidase Molecular weight: 66 kDa Enzyme Commission number: EC 3.4.21.26 CAS number: 72162-84-6 Source: A genetically modified strain of Aspergillus niger (GEP-44) Description: Prolyl oligopeptidase is available as an enzyme preparation containing approximately 30 % maltodextrin. Specifications of the enzyme preparation of prolyl oligopeptidase: Activity: > 580 000 PPI(¹)/g (> 34,8 PPU(²)/g) Appearance: Microgranulate Colour: Off-white to orange yellowish. The colour may change from batch to batch Dry Matter: > 94 % Glutten: < 20 ppm Heavy metals: Lead: ≤ 1,0 mg/kg Arsenic: ≤ 1,0 mg/kg Mcrobiological criteria: Total aerobic plate count: ≤ 10³ CFU/g Sulphite reducing anaerobes: ≤ 30 CFU/g Enterobacteriaceae: < 10 CFU/g Salmonella: Absence in 25 g Staphylococcus aureus: Absence in 10 g Pseudomonas aeruginosa: Absence in 10 g Listeria monocytogenes: Absence in 25 g Antimicrobial activity: Absent Mycotoxins: Below limits of detection: Aflatoxin B1, B2, G1, G2 (< 0,25 μg/kg), total Aflatoxins (< 2,0 μg/kg), Ochratoxin A (< 0,20 μg/kg), T-2 Toxin (< 5 μg/kg), Zearalenone (< 2,5 μg/kg), Fumonisin B1 and B2 (< 2,5 μg/kg)

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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#### (2) PPU – Prolyl Peptidase Units or Proline Protease Units

#### Protein extract from pig kidneys

#### **Description/Definition:**

The protein extract is obtained from homogenised pig kidneys through a combination of salt precipitation and high speed centrifugation. The obtained precipitate contains essentially proteins with 7 % of the enzyme diamine oxidase (enzyme nomenclature E.C. 1.4.3.22) and is resuspended in a physiologic buffer system. The obtained pig kidney extract is formulated as encapsulated enteric coated pellets to reach the active sites of digestion.

Basic Product:

Specification: pig kidney protein excerpt with natural content of Diamin

oxidase (DAO):

Physical condition: liquid

Colour: brownish

Appearance: slightly turbid solution

pH value: 6,4-6,8

Enzymatic activity: > 2 677 kHDU DAO/ml (DAO REA (DAO

Radioextractionassay)) **Microbiological criteria:** 

Brachyspira spp.: negative (Real Time PCR)

*Listeria monocytogenes*: negative (Real Time PCR)

*Staphylococcus aureus*: < 100 CFU/g

Influenza A: negative (Reverse Transcription Real Time PCR)

*Escherichia coli*: < 10 CFU/g

Total aerobic microbiological count: < 10<sup>5</sup> CFU/g

Yeasts/moulds count: < 10<sup>5</sup> CFU/g

Salmonella: Absence/10g

Bile salt resistant enterobacteriaceae: < 10<sup>4</sup> CFU/g

**Final product:** 

Specification pig kidney protein excerpt with natural content of DAO

(E.C. 1.4.3.22) in an enteric coated formulation:

Physical condition: solid Colour: yellow gray Appearance: micropellets

Enzymatic activity: 110-220 kHDU DAO/g pellet (DAO REA (DAO

Radioextractionassay))

Acid stability 15 min 0,1M HCl followed by 60 min Borat pH = 9.0: > 68

kHDU DAO/g pellet (DAO REA (DAO Radioextractionassay))

Humidity: < 10 %

Staphylococcus aureus: < 100 CFU/g

*Escherichia coli*: < 10 CFU/g

Total aerobic microbiological count: < 10<sup>4</sup> CFU/g Total combined yeasts/moulds count: < 10<sup>3</sup> CFU/g

Salmonella: Absence/10g

Bile salt resistant enterobacteriaceae:  $< 10^2$  CFU/g

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#### Rapeseed oil high in unsaponifiable matter

#### **Description/Definition:**

Rapeseed oil high in unsaponifiable matter' is produced by vacuum distillation and it is different from refined rapeseed oil in the concentration of the unsaponifiable fraction (1 g in refined rapeseed oil and 9 g in 'rapeseed oil high in unsaponifiable matter'). There is a minor reduction of triglycerides containing monounsaturated and polyunsaturated fatty acids.

#### **Purity:**

Unsaponifiable matter: > 7,0 g/100 g

Tocopherols: > 0.8 g/100 g α-tocopherol (%): 30-50 % γ-tocopherol (%): 50-70 % δ-tocopherol (%): < 6.0 %

Sterols, triterpenic alcohols, methylsterols: > 5,0 g/100 g

#### Fatty acids in triglycerides:

palmitic acid: 3-8 % stearic acid: 0,8-2,5 % oleic acid: 50-70 % linoleic acid: 15-28 % linolenic acid: 6-14 % erucic acid: < 2,0 %

Acid value:  $\leq$  6,0 mg KOH/g

Peroxide value (PV):  $\leq 10 \text{ mEq O}_2/\text{kg}$ 

#### **Heavy metals:**

Iron (Fe): < 1 000 μg/kg Copper (Cu): < 100 μg/kg

#### **Impurities:**

Polycyclic aromatic hydrocarbons (PAH) Benzo(a)pyrene: < 2 μg/kg Treatment with active carbon is required to ensure that polycyclic aromatic hydrocarbons (PAH) are not enriched in the production of 'rapeseed oil high in unsaponifiable matter.

#### Rapeseed Protein

#### **Definition:**

Rapeseed protein is an aqueous protein-rich extract from rapeseed press cake originating from non-genetically modified *Brassica napus* L. and *Brassica rapa* L.

#### **Description:**

White to off-white, spray dried powder

Total protein:  $\geq 90 \%$ Soluble protein:  $\geq 85 \%$ Moisture:  $\leq 7,0 \%$ Carbohydrates:  $\leq 7,0 \%$ 

Fat:  $\leq 2.0 \%$ Ash:  $\leq 4.0 \%$ Fibre:  $\leq 0.5 \%$ 

Total glucosinolates: ≤ 1 mmol/kg

**Purity:** 

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- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Total phytate:  $\leq 1,5 \%$ Lead:  $\leq 0,5 \text{ mg/kg}$ Microbiological criteria:

Yeast and mould count: ≤ 100 CFU/g Aerobic bacteria count: ≤ 10 000 CFU/g Total coliform count: ≤ 10 CFU/g

Total coliform count: ≤ 10 CFU/g Escherichia coli: Absence in 10 g Salmonella: Absence in 25 g

#### Transresveratrol

#### **Description/Definition:**

**Synthetic***Trans*-resveratrol is off-white to beige crystals.

Chemical name: 5-[(E)-2-(4-hydroxyphenyl)ethenyl]benzene-1,3-diol

Chemical formula: C<sub>14</sub>H<sub>12</sub>O<sub>3</sub> Molecular weight: 228,25 Da

CAS No: 501-36-0

**Purity:** 

*Trans*-resveratrol: ≥ 98 %-99 %

Total by-products (related substances):  $\leq 0.5 \%$ 

Any single related substance:  $\leq 0.1 \%$ 

Sulphated ash:  $\leq 0.1 \%$ Loss on drying:  $\leq 0.5 \%$ 

Heavy metals: Lead:  $\leq 1,0$  ppm Mercury:  $\leq 0,1$  ppm Arsenic:  $\leq 1,0$  ppm Impurities:

Diisopropylamine: ≤ 50 mg/kg

*Microbial source*: A genetically modified strain of *Saccharomyces* 

cerevisiae

Appearance: Off-white to slight yellow powder

Particle size: 100 % less than 62,23 µm

Trans-resveratrol content: Min. 98 % w/w (dry weight basis)

Ash: Max. 0,5 % w/w Moisture: Max. 3 % w/w

### Rooster comb extract

#### **Description/Definition:**

Rooster comb extract is obtained from *Gallus gallus* by enzymatic hydrolysis of rooster comb and by subsequent filtration, concentration and precipitation steps. The principal constituents of rooster comb extract are the glycosaminoglycans hyaluronic acid, chondroitin sulphate A and dermatan sulphate (chondroitin sulphate B). White or almost white hygroscopic powder.

Hyaluronic acid: 60-80 % Chondroitin sulphate A: \le 5.0 %

Dermatan sulphate (chondroitin sulphate B):  $\leq 25 \%$ 

pH: 5,0-8,5 **Purity:** 

Chlorides: ≤ 1,0 %

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Nitrogen:  $\leq 8.0 \%$ 

Loss on drying: (105 °C for 6 hours):  $\leq 10 \%$ 

Heavy metals:

Mercury:  $\leq 0.1$  mg/kg Arsenic:  $\leq 1.0$  mg/kg Cadmium:  $\leq 1.0$  mg/kg Chromium:  $\leq 10$  mg/kg Lead:  $\leq 0.5$  mg/kg

Microbiological criteria:

Total viable aerobic count:  $\leq 10^2$  CFU/g

Escherichia coli: Absence in 1 g Salmonella: Absence in 1 g

Staphylococcus aureus: Absence in 1 g Pseudomonas aeruginosa: Absence in 1g

# Sacha Inchi oil from *Plukenetia* volubilis

#### **Description/Definition:**

Sacha inchi oil is a 100 % cold pressed vegetable oil obtained from the seeds of *Plukenetia volubiis* L. It is a transparent, fluid (liquid) and shiny oil at room temperature. It has a fruity, light, green vegetable taste without undesirable flavours.

Aspect, limpidity, shine, colour: Fluid at room temperature, clean, shiny vellow gold

Odour and taste: Fruity, vegetable without non acceptable taste or odour **Purity:** 

Water and Volatiles: < 0,2 g/100 g

Impurities insoluble in hexane: < 0,05 g/100 g

Oleic acidity: < 2.0 g/100 g

Peroxide value (PV):  $\leq 15 \text{ meq O}_2/\text{kg}$ 

Trans fatty acids: < 1,0 g/100 g

Total unsaturated fatty acids: > 90 %

Omega 3 alpha linolenic acid (ALA): > 45 %

Saturated fatty acids: < 10 % No trans fatty acids (< 0,5 %)

No erucic acid (< 0,2 %)

More than 50 % of tri-linolenin and di-linolenin-triglycerides

Phytosterols composition and level No cholesterol (< 5.0 mg/100 g)

#### **Salatrims**

#### **Description/Definition:**

Salatrim is the internationally recognised acronym for (short and long chain acyl triglyceride molecules). Salatrim is prepared by non-enzymatic inter-esterification of triacetin, tripropionin, tributyrin, or their mixtures with hydrogenated canola, soybean, cottonseed, or sunflower oil. Description: Clear, slightly amber liquid to a light coloured waxy solid at room temperature. Free of particulate matter and of foreign or rancid odour.

Glycerol ester disribution: Triacylglycerols: > 87 %

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- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Diacylglycerols: ≤ 10 % Monoacylglycerols: ≤ 2,0 % Fatty acid composition: MOLE % LCFA (long chain fatty acids): 33-70 %

MOLE % SCFA (short chain fatty acids): 30-67 % Saturated long chain fatty acids: < 70 % by weight

Trans fatty acids:  $\leq 1.0 \%$ 

Free fatty acids as oleic acid:  $\leq 0.5 \%$ 

Triacylglycerol profile:

Triesters (short/long of 0,5 to 2,0):  $\geq$  90 %

Triesters (short/long = 0):  $\leq 10 \%$ Unsaponifiable material:  $\leq 1.0 \%$ 

Moisture:  $\leq 0.3 \%$ Ash:  $\leq 0.1 \%$ 

Colour:  $\leq 3.5 \text{ Red (Lovibond)}$ Peroxide value (PV):  $\leq 2.0 \text{ Meq/Kg}$ 

#### Schizochytrium sp. oil rich in **DHA and EPA**

Acid value:  $\leq 0.5 \text{ mg KOH/g}$ 

Peroxide value (PV):  $\leq 5.0$  meg/kg oil

Oxidative stability: All food products containing Schizochytrium sp. oil rich in DHA and EPA should demonstrate oxidative stability by appropriate and recognised national/international test methodology (e.g. AOAC)

Moisture and volatiles:  $\leq 0.05 \%$ 

Unsaponifiables:  $\leq 4.5 \%$ Trans-fatty acids:  $\leq 1 \%$ DHA content:  $\geq 22.5 \%$ EPA content: ≥ 10 %

#### Schizochytrium sp. (ATCC PTA-9695) oil

Peroxide value (PV):  $\leq 5.0$  meq/kg oil

Unsaponifiables:  $\leq 3.5 \%$ Trans-fatty acids:  $\leq 2.0 \%$ Free fatty acids:  $\leq 0.4 \%$ 

Docosapentaenoic acid (DPA) n-6:  $\leq$  7,5 %

DHA content: ≥ 35 %

#### Schizochytrium sp. oil

Acid value:  $\leq 0.5 \text{ mg KOH/g}$ 

Peroxide value (PV):  $\leq 5.0$  meq/kg oil Moisture and volatiles:  $\leq 0.05 \%$ 

Unsaponifiables: < 4.5 % Trans-fatty acids:  $\leq 1.0 \%$ DHA content:  $\geq 32.0 \%$ 

#### Schizochytrium sp. (T18) oil

Acid value:  $\leq 0.5 \text{ mg KOH/g}$ 

Peroxide value (PV):  $\leq 5.0$  meg/kg oil Moisture and volatiles:  $\leq 0.05 \%$ Unsaponifiables:  $\leq 3.5 \%$ 

Trans-fatty acids:  $\leq 2.0 \%$ Free fatty acids:  $\leq 0.4 \%$ 

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DHA content:  $\geq 35 \%$ 

## Fermented soybean extract

#### **Description/Definition:**

Fermented soybean extract is an odourless milk-white coloured powder. It is comprised of 30 % fermented soybean extract powder and 70 % resistant dextrin (as carrier) from corn-starch, which is added during the processing. Vitamin  $K_2$  is removed during the manufacturing process. Fermented soybean extract contains nattokinase isolated from natto, a foodstuff produced by the fermentation of non-genetically modified soybeans (*Glycine max* (L.)) with a selected strain of *Bacillus subtilis* var. natto.

Nattokinase activity: 20 000 -28 000 Fibrin degradation unit/ $g(^1)$ 

Identity: Confirmable

Condition: No offensive taste or smell

Loss on drying:  $\leq 10 \%$ Vitamin  $K_2$ :  $\leq 0.1 \text{ mg/kg}$ 

Heavy metals: Lead: ≤ 5,0 mg/kg Arsenic: ≤ 3,0 mg/kg Microbiological criteria:

Total viable aerobic count:  $\leq 10^3 \text{ CFU}(^3)/\text{g}$ 

Yeast and mould:  $\leq 10^2$  CFU/g

Coliforms: ≤ 30 CFU/g

Spore-forming bacteria: ≤ 10 CFU/g Escherichia coli: Absence/25 g Salmonella: Absence/25 g Listeria: Absence/25 g

(1) Assay method as described by Takaoka et al. (2010).

#### Spermidinerich wheat germ extract (*Triticum* aestivum)

#### **Description/Definition:**

Spermidine-rich wheat germ extract is obtained from non-fermented, non-sprouting wheat germs (*Triticum aestivum*) by the process of solid-liquid extraction targeting specifically, but not exclusively polyamines.

Spermidine: 0,8-2,4 mg/g Spermine: 0,4-1,2 mg/g

Spermidine trichloride  $< 0.1 \mu g/g$ 

Putrescine: < 0,3 mg/g Cadaverine: < 0,1 μg/g

**Mycotoxins:** 

Aflatoxins (total): < 0,4 μg/kg **Microbiological criteria:** 

Total aerobic bacteria: < 10 000 CFU/g Yeast and moulds: < 100 CFU/g Escherichia coli: < 10 CFU/g Salmonella: Absence/25g

Listeria monocytogenes: Absence/25g

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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#### **Sucromalt**

#### **Description/Definition:**

Sucromalt is a complex mixture of saccharides which is produced from sucrose and a starch hydrolysate by means of an enzymatic reaction. In this process, glucose units are attached to saccharides from the starch hydrolysate by means of an enzyme produced by the bacterium *Leuconostoc citreum* or by means of a recombinant strain of the production organism *Bacillus licheniformis*. The resulting oligosaccharides are characterised by the presence of  $\alpha$ -(1 $\rightarrow$ 6) and  $\alpha$ -(1 $\rightarrow$ 3) glycosidic compounds. The overall product is syrup, in addition to these oligosaccharides, contains mainly fructose but also the disaccharide leucrose and other disaccharides.

Total solids: 75-80 % Moisture: 20-25 % Sulphatase: Max 0,05 %

pH: 3,5-6,0

Conductivity < 200 (30 %)

Nitrogen < 10 ppm Fructose: 35-45 % d.w. Leucrose: 7-15 % d.w.

Other disaccharides: Max 3 % Higher saccharides: 40-60 % d.w

### Sugar cane fibre

#### **Description/Definition:**

Sugar Cane Fibre is derived from the dry cell wall or fibrous residue remaining after expression or extraction of sugar juice from sugar cane, of the Saccharum genotype. It consists primarily of cellulose and hemicellulose.

The production process consists of several steps, including: chipping, alkaline digestion, removal of lignins and other non-cellulosic components, bleaching of purified fibres, acid washing and neutralization.

Moisture:  $\leq$  7,0 % Ash:  $\leq$  0,3 %

Total Dietary Fibre (AOAC) dry basis (all insoluble):  $\geq 95\%$  of which: Hemicellulose (20-25%) and cellulose (70-75%)

Silica (ppm): ≤ 200 Protein: 0,0 % Fat: Trace pH: 4-7

**Heavy metals:** 

Mercury (ppm):  $\leq 0,1$ Lead (ppm):  $\leq 1,0$ Arsenic (ppm):  $\leq 1,0$ Cadmium (ppm):  $\leq 0,1$ **Microbiological criteria:** 

Yeast and moulds (CFU/g):  $\leq 1~000$ 

Salmonella: Absence

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Listeria monocytogenes: Absence

### **Sunflower oil** extract

#### **Description/Definition:**

The sunflower extract is obtained by a concentration factor of 10 of the unsaponifiable fraction of refined sunflower oil extracted from the seeds of the sunflower, *Helianthus Annuus* L.

#### **Composition:**

Oleic acid (C18:1): 20 % Linoleic acid (C18:2): 70 % Unsaponifiable matter: 8,0 %

Phytosterols: 5,5 % Tocopherols: 1,1 %

#### Dried Tetraselmis chuii microalgae

#### **Description/Definition:**

The dried product is obtained from the marine microalgae *Tetraselmis chuii*, belonging to the *Chlorodendraceae* family, cultivated in sterile sea water in closed photobioreactors insulated from the outside air.

#### **Purity/Composition:**

Identified by means of nuclear marker rDNA 18 S (sequence analysed no less than 1 600 base pairs) in the National Centre for Biotechnology

information (NCBI) database: Not less than 99,9 %

Humidity: ≤ 7,0 % Proteins: 35-40 % Ashes: 14-16 %

Carbohydrates: 30-32 %

Fibre: 2-3 % Fat: 5-8 %

Saturated fatty acids: 29-31 % of total fatty acids

Monounsaturated fatty acids: 21-24 % of total fatty acids Polyunsaturated fatty acids: 44-49 % of total fatty acids

Iodine:  $\leq 15 \text{ mg/kg}$ 

### Therapon barcoo/Scortum

#### **Description/Definition:**

Scortum/*Therapon barcoo* is a species of fish in the family Terapontidae. It is an endemic fresh water species from Australia. It is now reared in fish farms.

Taxonomic Identification: Class: Actinopterygii > order: Perciformes >

family: Terapontidae > genus: *Therapon* or *Scortum barcoo* 

Composition of fish flesh:

Protein (%): 18-25 Moisture (%): 65-75 Ash (%): 0,5-2,0

Energy (KJ/Kg): 6000-11500 Carbohydrates (%): 0,0

Fat (%): 5-15

Fatty acids (mg FA/g fillet): Σ PUFA n-3: 1,2-20,0 Σ PUFA n-6: 0,3-2,0 PUFA n-3/n-6: 1,5-15,0

- a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).
- b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Total omega 3 acids: 1,6-40,0 Total omega 6 acids: 2,6-10,0

#### **D-Tagatose**

#### **Description/Definition:**

Tagatose is produced by isomerization of galactose by means of chemical or enzymatic conversion, or by epimerization of fructose by means of enzymatic conversion. These are single-step conversions.

Appearance: White or almost white crystals

Chemical name: D-tagatose Synonym: D-*lyxo*-Hexulose CAS number: 87-81-0 Chemical formula: C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> Formula weight: 180,16 (g/mol)

**Purity:** 

Assay:  $\geq$  98 % on a dry weight basis Loss on drying:  $\leq$  0,5 % (102 °C, 2 hours)

Specific Rotation:  $[\alpha]_D^{20}$ : -4 to  $-5.6^\circ$  (1 % aqueous solution)(1)

Melting range: 133–137 °C

**Heavy metals:** 

Lead:  $\leq 1.0 \text{ mg/kg(*)}$ 

- (\*) Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in FNP 5. 'Instrumental methods'(1).
- (1) Food and nutrition paper 5 Rev 2 Guide to specifications for general notices, general analytical techniques, identification tests, test solutions and other reference materials (JECFA) 1991, 307 p.; English ISBN 92-5-102991-1

### Taxifolin-rich extract

#### **Description:**

Taxifolin-rich extract from the wood of Dahurian Larch (*Larix gmelinii* (Rupr.) Rupr) is a white to pale-yellow powder that crystallizes from hot aqueous solutions.

#### **Definition:**

Chemical name: [(2R,3R)-2-(3,4 dihydroxyphenyl)-3,5,7-trihydroxy-2,3-dihydrochromen-4-one, also called (+) trans (2R,3R)- dihydroquercetin]

Chemical formula: C<sub>15</sub>H<sub>12</sub>O<sub>7</sub> Molecular mass: 304,25 Da CAS No: 480-18-2

Specifications:
Physical parameter
Moisture: ≤ 10 %
Compound analysis

Taxifolin (m/m):  $\geq 90.0$  % of the dry weight

*Heavy Metals, Pesticide* Lead: ≤ 0,5 mg/kg

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Arsenic:  $\leq 0.02 \text{ mg/kg}$ Cadmium:  $\leq 0.5 \text{ mg/kg}$ Mercury:  $\leq 0.1 \text{ mg/kg}$ 

Dichlorodiphenyltrichloroethane (DDT):  $\leq 0.05 \text{ mg/kg}$ 

Residual solvents Ethanol: < 5 000 mg/kg Microbiological criteria

Total Plate Count (TPC):  $\leq 10^4$  CFU/g

Enterobacteria:  $\leq 100/g$ 

Yeast and Mould : ≤ 100 CFU/g Escherichia coli: Absence/1 g Salmonella: Absence/10 g

Staphylococcus aureus: Absence/1 g

Pseudomonas: Absence/1g

## Usual range of components of the Taxifolin-rich extract (as per dry substance)

Extract component	Content, usual observed range (%)
Taxifolin	90 – 93
Aromadendrin	2,5 – 3,5
Eriodictyol	0,1 – 0,3
Quercetin	0,3 – 0,5
Naringenin	0,2 - 0,3
Kaempferol	0,01 – 0,1
Pinocembrin	0,05 - 0,12
Unidentified flavonoids	1 – 3
Water(*)	1,5

(\*) Taxifolin in its hydrated form and during the drying process is a crystal. This results on the inclusion of water of crystallisation in a quantity of 1,5 %.

#### **Trehalose**

#### **Description/Definition:**

A non-reducing disaccharide that consists of two glucose moieties linkes by an  $\alpha$ -1,1-glucosidic bond. It is obtained from liquefied starch or from sucrose by a multistep enzymatic process. The commercial product is the dihydrate. Virtually odourless, white or almost white crystals with a sweet taste

Synonyms:  $\alpha$ , $\alpha$ -trehalose

Chemical name: α-D-glucopyranosyl-α-D-glucopyranoside, dihydrate CAS No.: 6138-23-4 (dihydrate)

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Chemical formula: C<sub>12</sub>H<sub>22</sub>O<sub>11</sub> · 2H<sub>2</sub>O (dihydrate)

Formula weight: 378,33 (dihydrate) Assay: ≥ 98 % on the dry basis

Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in FNP 5 (1), 'Instrumental methods'

#### Method of assay:

Principle: trehalose is identified by liquid chromatography and quantified by comparison to a reference standard containing standard trehalose Preparation of sample solution: weigh accurately about 3 g of dry sample into a 100 ml volumetric flask and add about 80 ml of purified, deionised water. Bring sample to complete dissolution and dilute to mark with purified deionised water. Filter through a 0,45 micron filter Preparation of standard solution: dissolve accurately weighed quantities

Preparation of standard solution: dissolve accurately weighed quantities of dry standard reference trehalose in water to obtain a solution having known concentration of about 30 mg of trehalose per ml.

Apparatus: liquid chromatography equipped with a refractive index detector and integrating recorder

Conditions:

Column: Shodex Ionpack KS-801 (Showa Denko Co.) or equivalent

length: 300 mmdiameter: 10 mmtemperature: 50 °C

Mobile phase: water flow rate: 0,4 ml/min Injection volume: 8 µl

Procedure: inject separately equal volumes of the sample solution and the standard solution into the chromatograph.

Record the chromatograms and measure the size of response of the trehalose peak

Calculate the quantity, in mg, of trehalose in 1 ml of the sample solution by the following formula:

% trehalose =  $100 \times (R_U/R_S) (W_S/W_U)$ 

where

 $R_S$  = peak area of trehalose in the standard preparation  $R_U$  = peak area of trehalose in the sample preparation  $W_S$  = weight in mg of trehalose in the standard preparation

 $W_{IJ}$  = weight of dry sample in mg

#### **Characteristics:**

Identification:

Solubility: Freely soluble in water, very slightly soluble in ethanol Specific rotation:  $\left[\alpha\right]_D^{20} = +179^{\circ}$  (5 % aqueous solution, dihydrate),

+199° (5 % aqueous solution, anhydrous substance)

Melting point: 97 °C (dihydrate)

**Purity:** 

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Loss on drying:  $\leq 1,5 \%$  (60 °C, 5h)

Total ash:  $\leq 0.05 \%$ **Heavy metals:** Lead:  $\leq 1.0 \text{ mg/kg}$ 

#### **UV** treated mushrooms (Agaricus bisporus)

#### **Description/Definition:**

Commercially grown Agaricus bisporus to which UV light treatment is applied to harvested mushrooms.

UV radiation: a process of radiation in ultraviolet light within the wavelength of 200-800 nm.

#### Vitamin D<sub>2</sub>:

Chemical name: (3B,5Z,7E,22E)-9,10-secoergosta-5,7,10(19),22-

tetraen-3-ol

Synonym: Ergocalciferol

CAS No: 50-14-6

Molecular weight: 396,65 g/mol

**Contents:** 

Vitamin  $D_2$  in the final product: 5-10 µg/100 g fresh weight at the

expiration of shelf life

#### **UV-treated** baker's yeast (Saccharomyces cerevisiae)

#### **Description/Definition:**

Baker's yeast (Saccharomyces cerevisiae) is treated with ultraviolet light to induce the conversion of ergosterol to vitamin D<sub>2</sub> (ergocalciferol). Vitamin D<sub>2</sub> content in the yeast concentrate varies between 1 800 000-3

500 000 IU vitamin D/100 g (450-875 μg/g).

Tan-coloured, free-flowing granules

Vitamin D<sub>2</sub>:

Chemical name: (5Z,7E,22E)-3S-9,10-secoergosta-5,7,10(19),22-

tetraen-3-ol

Synonym: Ergocalciferol CAS No.: 50-14-6

Molecular weight: 396,65 g/mol

Microbiological criteria for the yeast concentrate:

Coliforms:  $\leq 10^3/g$ *Escherichia coli*: ≤ 10/g Salmonella: Absence in 25g

#### **UV-treated** bread

#### **Description/Definition:**

UV-treated bread is yeast leavened bread and rolls (without toppings) to which a treatment with ultraviolet radiation is applied after baking in order to convert ergosterol to vitamin D<sub>2</sub> (ergocalciferol).

UV radiation: A process of radiation in ultraviolet light within the wavelength of 240-315 nm for maximum of 5 seconds with energy input of  $10-50 \text{ mJ/cm}^2$ .

Vitamin D<sub>2</sub>:

Chemical name: (5Z,7E,22E)-3S-9,10-secoergosta-5,7,10(19),22-

tetraen-3-ol

Synonym: Ergocalciferol

- Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012,
- Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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CAS No: 50-14-6

Molecular weight: 396,65 g/mol

**Contents:** 

Vitamin  $D_2$  (ergocalciferol) in the final product: 0,75-3  $\mu$ g/100 g( $^1$ )

Yeast in dough: 1-5 g/100 g (2)

(1) EN 12821, 2009, European Standard.

(2) Recipe calculation.

### UV-treated milk

#### **Description/Definition:**

UV-treated milk is cow's milk (whole and semi-skimmed) to which a treatment with ultraviolet (UV) radiation via turbulent flow is applied after pasteurisation. The treatment of the pasteurised milk with UV radiation results in an increase in the vitamin D<sub>3</sub> (cholecalciferol) concentrations by conversion of 7-dehydrocholesterol to vitamin D<sub>3</sub>. UV radiation: A process of radiation in ultraviolet light within the wavelength of 200-310 nm with energy input of 1 045 J/l.

#### Vitamin D<sub>3</sub>:

Chemical name: (1S,3Z)-3-[(2E)-2-[(1R,3aS,7aR)-7a-methyl-1-[(2R)-6-methylheptan-2-yl]-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]-4-methylidenecyclohexan-1-ol

Synonym: Cholecalciferol

CAS No: 67-97-0

Molecular weight: 384,6377 g/mol

**Contents:** 

Vitamin  $D_3$  in the final product:

Whole milk( $^{1}$ )0,5-3,2 µg/100 g( $^{2}$ )

Semi-skimmed milk(1):  $0,1-1,5 \mu g/100 g(^2)$ 

- (1) As defined by Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007 (OJ L 347, 20.12.2013, p. 671).
- (<sup>2</sup>) HPLC

# Vitamin K<sub>2</sub> (menaquinone)

This novel food is produced by a synthetic or microbiological process. Vitamin  $K_2$  (2-methyl-3-all-trans-polyprenyl-1,4-naphthoquinones), or the menaquinone series, is a group of prenylated naphthoquinone derivatives. The number of isoprene residues, where 1 isoprene unit consists of 5 carbons comprising the side chain, is used to characterise the menaquinone homologues containing primarily MK-7 and to a smaller extent MK-6.

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, n. 1)

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Vitamin  $K_2$  (menaquinones) series with menaquinone-7 (MK-7)(n = 6) being  $C_{46}H_{64}O_2$ , menaquinone-6 (MK-6)(n = 5) being  $C_{41}H_{56}O_2$  and menaquinone-4 (MK-4)(n = 3) being  $C_{31}H_{40}O_2$ .

Chemical Name: (all-E)-2-(3,7,11,15,19,23,27-

Heptamethyl-2,6,10,14,18,22,26-octacosaheptaenyl)-3-methyl-1,4-

naphtalenedione

CAS Number: 2124-57-4 Molecular formula: C<sub>46</sub>H<sub>64</sub>O<sub>2</sub> Molecular weight: 649 g/mol

2-methyl-1,4-naphthoquinone (menadione moiety)

#### Specification of synthetic Vitamin $K_2$ (menaquinone-7)

Appearance: Yellow powder

Purity: Max 6,0 % cis-isomer, max 2,0 % other impurities

Content: 97-102 % Menaquinone-7 (including at least 92 % all-trans

Menaquinone-7)

## Specifications of microbiologically produced Vitamin $K_2$ (menaquinone-7)

Source: Bacillus subtilis spp. natto and Bacillus licheniformis

Appearance: Yellow powder or oil suspension

### Wheat bran extract

#### **Description/Definition:**

White crystalline powder obtained by enzymatic extraction from *Triticum* 

aestivum L. bran, rich in arabinoxylan oligosaccharides

Dry matter: Min. 94 %

Arabinoxylan oligosaccharides: Min 70 % of dry matter

Average degree of polymerisation of arabinoxylan oligosaccharides: 3-8 Ferulic acid (bound to arabinoxylan oligosaccharides): 1-3 % of dry

matter

Total poly/oligosaccharides: Min 90 %

Protein: Max 2 % of dry matter Ash: Max 2 % of dry matter **Microbiological parameters:** 

Mesophilic bacteria – total count: Max 10 000/g

Yeasts: Max 100/g

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Fungi: Max 100/g

Salmonella: Absence in 25g Bacillus cereus: Max 1000/g

Clostridium perfringens: Max 1000/g

#### Yeast betaglucans

#### **Description/Definition:**

Beta-glucans are complex, high molecular mass (100-200 kDa) polysaccharides, found in the cell wall of many yeasts and cereals. The chemical name for 'yeast beta-glucans' is (1-3),(1-6)- $\beta$ -D-glucans. Beta-glucans consist of a backbone of  $\beta$ -1-3-linked glucose residues that are branched by  $\beta$ -1-6-linkages, to which chitin and mannoproteins are linked by  $\beta$ -1-4-bonds.

Beta-glucans are isolated from yeast Saccharomyces cerevisiae.

The tertiary structure of the glucan cell wall of *Saccharomyces cerevisiae* consists of chains of  $\beta$ -1,3-linked glucose residues, branched by  $\beta$ -1,6-linkages, forming a backbone to which are linked chitin via  $\beta$ -1,4-bonds,  $\beta$ -1,6-glucans and some mannoproteins.

This novel food is available in three different forms: soluble, insoluble and insoluble in water, but dispersible in many liquid matrices.

#### Chemical characteristics yeast (*Saccharomyces cerevisiae*) betaglucans:

#### **Soluble form:**

Total carbohydrates: > 75 % Beta-glucans (1,3/1,6): > 75 %

Ash: < 4,0 % Moisture: < 8,0 % Protein: < 3,5 % Fat: < 10 % **Insoluble form:** 

Total carbohydrates: > 70 % Beta-glucans (1,3/1,6): > 70 %

Ash: ≤ 12 % Moisture: < 8,0 % Protein: < 10 % Fat: < 20 %

#### **Insoluble in water, but dispersible in many liquid matrices:**

(1,3)-(1,6)- $\beta$ -D-Glucans: > 80 %

Ash: < 2,0 % Moisture: < 6,0 % Protein: < 4,0 % Total fat: < 3,0 %

Microbiological data for insoluble in water, but dispersible in many

liquid matrices:

Total plate count: < 1 000 CFU/g Enterobacteriaceae: < 100 CFU/g Total coliforms: < 10 CFU/g

Yeast: < 25 CFU/g Mould: < 25 CFU/g

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b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Salmonella: Absence in 25 g Escherichia coli: Absence in 1 g *Bacillus cereus*: < 100 CFU/g

Staphylococcus aureus: Absence in 1 g

Heavy metals for insoluble in water, but dispersible in many liquid

matrices:

Lead: < 0.2 mg/gArsenic: < 0.2 mg/gMercury: < 0.1 mg/gCadmium: < 0.1 mg/g

#### Zeaxanthin

#### **Description/Definition:**

Zeaxanthin is a naturally occurring xanthophyll pigment, it is an oxygenated carotenoid.

The synthetic zeaxanthin is presented either as a spray-dried powder of gelatin or starch base ('beadlets') with added  $\alpha$ -tocopherol and ascorbyl palmitate or as a corn oil suspension with added α-tocopherol. Synthetic zeaxanthin is produced by a multi-step chemical synthesis from smaller molecules.

Orange-red crystalline powder with little or no odour.

Chemical formula: C<sub>40</sub>H<sub>56</sub>O<sub>2</sub>

CAS No: 144-68-3

Physical-chemical properties: Loss on drying: < 0.2 %*All*-trans zeaxanthin: > 96 % Cis-zeaxanthin: < 2,0 %

Molecular weight: 568,9 daltons

Other carotenoids: < 1,5 % Triphenylphosphine oxid (CAS No 791-28-6): < 50 mg/kg

### Zinc L-pidolate

#### **Description/Definition:**

Zinc L-pidolate is a white to off-white powder, with characteristic odour. International non-proprietary name (INN): L-pyroglutamic acid, Zinc salt Synonyms: Zinc 5-oxoproline, Zinc pyroglutamate, Zinc pyrrolidone

carboxylate, Zinc PCA, L-Zinc pidolate

CAS No.: 15454-75-8

Molecular formula: (C<sub>5</sub> H<sub>6</sub> NO<sub>3</sub>)<sub>2</sub> Zn Relative anhydrous molecular mass: 321,4 Appearance: White to slightly white powder

**Purity:** 

Zinc L-pidolate (purity):  $\geq$  98 % pH (10 % aqueous sol.): 5,0-6,0 Specific rotation: 19,6°- 22,8°

Water:  $\leq 10.0 \%$ Glutamic acid: < 2,0 %

**Heavy metals:** Lead:  $\leq 3.0 \text{ ppm}$ Arsenic:  $\leq 2.0$  ppm

Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012,

Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

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Cadmium: ≤ 1,0 ppm Mercury: ≤ 0,1 ppm **Microbiological criteria:** 

Total viable mesophilic count: ≤ 1 000 CFU/g

Yeasts and moulds:  $\leq 100 \text{ CFU/g}$ 

Pathogen: Absence

a Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council (OJ L 83, 22.3.2012, p. 1).

b Commission Implementing Regulation (EU) 2015/175 of 5 February 2015 laying down special conditions applicable to the import of guar gum originating in or consigned from India due to contamination risks by pentachlorophenol and dioxins (OJ L 30, 6.2.2015, p. 10).

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023. (See end of Document for details)

- (1) OJ L 327, 11.12.2015, p. 1.
- (2) Regulation (EC) No 258/97 of the European Parliament and of the Council of 27 January 1997 concerning novel foods and novel food ingredients (OJ L 43, 14.2.1997, p. 1).
- (3) Commission Implementing Regulation (EU) 2017/2470 of 20 December 2017 establishing the Union list of novel foods in accordance with Regulation (EU) 2015/2283 of the European Parliament and of the Council on novel foods (OJ L 351, 30.12.2017, p. 72).
- (4) Commission Implementing Decision (EU) 2016/375 of 11 March 2016 authorising the placing on the market of lacto-N-neotetraose as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 70, 16.3.2016, p. 22).
- (5) Letter of 8 May 2015 (https://ec.europa.eu/food/sites/food/files/safety/docs/novel-food authorisation 2015 auth-letter krill-oil en.pdf)
- (6) Commission Decision 2009/827/EC of 13 October 2009 authorising the placing on the market of Chia seed (*Salvia hispanica*) as novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 294, 11.11.2009, p. 14).
- (7) Commission Implementing Decision 2014/423/EU of 1 July 2014 authorising the placing on the market of citicoline as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 196, 3.7.2014, p. 24).
- (8) Commission Decision 2009/345/EC of 22 April 2009 authorising the placing on the market of Vitamin K<sub>2</sub> (menaquinone) from *Bacillus subtilis* natto as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 105, 25.4.2009, p. 16).
- (9) Commission Implementing Decision 2011/762/EU of 24 November 2011 authorising the placing on the market of yeast beta-glucans as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 313, 26.11.2011, p. 41).
- (10) Commission Decision 2004/333/EC of 31 March 2004 authorising the placing on the market of yellow fat spreads, salad dressings, milk type products, fermented milk type products, soya drinks and cheese type products with added phytosterols/phytostanols as novel foods or novel food ingredients under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 105, 14.4.2004, p. 40).
- (11) Commission Decision 2008/968/EC of 12 December 2008 authorising the placing on the market of arachidonic acid-rich oil from *Mortierella alpina* as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L 344, 20.12.2008, p. 123).

#### **Status:**

Point in time view as at 31/12/2020.

#### **Changes to legislation:**

There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2018/1023.