

4MSI Common Approach on Organic Materials in Contact with Drinking Water

Part B – Positive Lists of Substances

Adopted by the 4MSI Joint Management Committee

3rd Revision
12 August 2020

Introduction

An essential element of the regulatory arrangements for control of the hygienic performance of organic products in contact with Drinking Water (PDW's) is the examination and approval of the substances used for the production of these products. The goal of the 4MS Initiative is to have a Positive List of substances that are permitted for the production of organic materials, which is accepted by all MS's. This is in addition to the substances authorized for use in food contact materials (FCM) according to Regulation (EU) No. 10/2011, as these are included as permissible for use in PDW's.

Candidate substances for the Positive List are the substances on the existing national Positive Lists in use in France, Germany and the Netherlands, and which had been collated earlier in the "Combined List". The substances on the Combined List can be transferred to the Core List (the 4MSI Positive List of confirmed substances) after they have been reviewed by 4MSI.

Core List (list of confirmed substances)

The 4MS Initiative has agreed procedures for the evaluation of organic substances in use in products in its Common Approach on Organic Materials part A, "Methodologies for Testing and Accepting Starting Substances to be Included in the Positive List", first published in December 2011, last revised in August 2020. The Common Approach sets out the process to be followed for the assessment and acceptance of substances. Substances approved by this procedure are included in the 4MSI Positive List or "Core List". In addition, substances from the Combined List for which a favorable EFSA opinion, or other adequate information was available, are transferred to the Core List. Therefore, the Core List contains only confirmed substances. The Core List is found in Annex A.

Combined List (list of substances under review)

The first version of the Combined List was published in 2011. It is a compilation of substances that appeared on the national positive lists and which not appear on the Union List of Regulation (EU) No. 10/2011. Pigments and colorants currently permitted in the MS's are not included in the Combined List. The Combined List is periodically updated by removing substances that have been evaluated and are transferred to the Core List and by adding substances that were erroneously not included in the first version of the list in 2011, or have been evaluated on a national level in the transitional period. The Combined List is found in Annex B.

Obsolete List (list of obsolete substances)

Substances from the Combined List that are not known to be used anymore in certified or approved PDW's have been transferred onto the 'Obsolete List'. In situations where it appears that a substance has inadvertently been miss-classified as being 'obsolete', then this substance can be returned to the Combined List. Substances that are on the Obsolete List will eventually be deleted. The List of Obsolete substances is found in Annex C.

Actions required by Industry

Should Industry notice substances on the Obsolete List, which they still use in certified or approved products, Industry can inform the relevant MS, making reference to the certificate or approval. The substance will be returned to the Combined List.

In a previous version of this document it was announced that Industry would be asked to submit dossiers for re-evaluation of substances on the Combined-List and that deadlines would be added to the list. However, in the upcoming revision of the European Drinking water Directive, it is stated that harmonized minimum requirements for materials in contact with water have to be established. This would also include the compilation of a European Positive List of starting substances. Pending these developments, the 4MSI will not start a systematic re-evaluation process for substances that are on the Combined List.

Annex A - Core List (list of confirmed substances)

Core List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification
-	-	monomers and other starting substances according to plastic regulation 10/2011		yes		monomer	1/20 SML		QM/QMA or other limits as in 10/2011
-	-	additives according to plastic regulation 10/2011	yes			additive	1/20 SML		QM/QMA or other limits as in 10/2011
-	-	pigments				pigment			- A 0.1 µg/L solution in water, tested on colour, should result in ">10 mg/L Pt/Co", using the same method as is prescribed for measurement of colour in migrationwater, and - Substance has to comply with purity requirements for colorants and pigments
-	-	solvents	yes				0.0001		Must be removed during the production process
-	-	polymers according to PL's (i.e. all starting substances have to be listed in the PL's that apply to DWP), with a MW above 1000 Da	yes			polymeric additive	MTC's of all starting substances apply		QM/QMA or other limits as in 10/2011
-	9005-82-7	amylose	yes		coatings	initiator			
37520	2634-33-5	1,2-benzisothiazol-3(2H)-one	yes		rubber, silicone	antifoaming, biocide in can preservation	0.025		no antimicrobial effects on the surface of the end product
	119-53-9	benzoin	yes		coatings	polymerisation production aids	0.0025		
-	7637-07-2	boron trifluoride	yes		plastics, rubber	catalyst		0.10 0.15	MTC(T) expressed as boron; MTC(T) expressed as fluoride
40430	109-63-7	boron trifluoride etherate	yes		plastics	catalyst		0.10 0.15	MTC(T) expressed as boron; MTC(T) expressed as fluoride
40594	75-65-0	tert-butanol	yes		coatings	solvent	0.5		
-	25085-50-1	4-tert-butylphenol formaldehyde resin (oligomers Mw < 1000 Da: max. 25%; methylol groups: max. 16%)		yes	rubber	crosslinking agent	0.0025 0.75 0.050		4-tert butylphenol formaldehyde xylene
41200	7789-75-5	calcium fluoride	yes		plastics			0.15	MTC(T) expressed as fluoride
-	8007-24-7	cashew nut shell liquid, distilled (> 90% cardanol)		yes	coatings	hardener	0.0025		not for use as reactive diluent
14450/1	-	castor oil fatty acids, dehydrated							

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14453	61790-39-4	castor oil fatty acids, hydrogenated		yes	coatings	monomer			
14505	9004-35-7	cellulose acetate		yes	coatings	monomer			
14512	9004-39-1	cellulose acetate propionate		yes	coatings	monomer			
43760	26172-55-4	5-chloro-2-methyl-2H-isothiazol-3-one	yes		coatings, silicone		0.0005		only to be used as in-can preservative; no antimicrobial effects on the surface of the end product
43730	55965-84-9	5-chloro-2-methyl-2H-isothiazol-3-one (CAS 26172-55-4) and 2-methyl-2H-isothiazol-3-one (CAS 2682-20-4), mixture (3:1)	yes		coatings	in can preservation	0.0075		only to be used as in-can preservative; no antimicrobial effects on the surface of the end product
-	21679-31-2	chromium(III)acetylacetonate	yes		plastics	adhesion		0.005	MTC(T) expressed as chromium
-	10025-73-7	chromium(III)chloride	yes		plastics	catalyst		0.005	MTC(T) expressed as chromium
-	11118-57-3	chromium oxide	yes		plastics	catalyst		0.005	MTC(T) expressed as chromium
-	7681-65-4	copper(I)iodide	yes					0.05 0.2	MTC(T) expressed as iodine MTC(T) expressed as copper
47080	110-05-4	di-tert-butyl peroxide		yes	plastics, rubber	crosslinker, aids to polymerization, vulcanisation agent	0.0001 0.5 0.015		peroxide tert-butanol methyl tert-butyl ether
66620	75-09-2	dichloromethane	yes		rubber, coatings	solvent			
48030	112-34-5	diethylene glycol monobutyl ether (DEGBE)	yes		coatings, silicone	solvent		0.15	MTC(T) for sum of (di)ethyleneglycol, monoalkyl (C1,C2,C4,C6) ethers and acetic acid, 2-ethoxyethyl ester
49160	127-19-5	dimethylacetamide	yes		plastics	solvent	0.0025		
56320	1323-83-7	distearic acid, diester with glycerol	yes		plastics				
53255	100-41-4	ethylbenzene	yes		coatings, silicone	solvent	0.03		
53600	60-00-4	ethylenediamine tetra acetic acid (EDTA)			plastics, rubber, lubricants	additive	0.06		
16993	111-76-2	ethyleneglycol monobutyl ether	yes	yes	coatings, silicone	solvent		0.15	MCT(T) for sum of (di)ethyleneglycol, monoalkyl (C1,C2,C4,C6) ethers and acetic acid, 2-ethoxyethyl ester
16999	112-25-4	ethyleneglycol monohexyl ether		yes	coatings	solvent		0.15	MCT(T) for sum of (di)ethyleneglycol, monoalkyl (C1,C2,C4,C6) ethers and acetic acid, 2-ethoxyethyl ester

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17175	68938-15-8	fatty acids, coco hydrogenated		yes	coatings	monomer			
18115 / 57520	31566-31-1	glycerol monostearate	yes	yes	rubber, coatings, silicone	processing aid, additive			
59330	110-54-3	n-hexane, incl. structural isomers up to 40% (cyclohexane <3%) EC-No.: 925-29-5	yes			solvent	0.25		MTC does not need to be verified when process temperature > 100 °C
-	1333-74-0	hydrogen	yes		rubber	polymer modifier			
-	93685-81-5 (13475-82-6)	isododecane (main isomer: 2,2',4,6,6'-pentamethylheptane)	yes		plastics	phlegmatiser for organic peroxides	0.0025		
63240	8006-54-0	lanolin (pharmacoepia grade)	yes		coatings				
-	25182-44-9	methacrylic acid, chromium (III) salt		yes	plastics	aids to polymerization, adhesion promoter for fillers		0.005 0.3	MTC(T) expressed as chromium, MTC(T) expressed as methacrylic acid
21827/6 6655	78-93-3	methyl ethyl ketone	yes	yes	coatings, silicone	solvent	0.25		
66725	108-10-1	methyl isobutyl ketone (4-methylpentan-2-one)	yes		coatings, silicone	solvent	0.25		
22190	2163-42-0	2-methylpropane-1,3-diol		yes	coatings	monomer	0.25		
-	7782-44-7	oxygen	yes	yes	plastics	catalyst			
-	27619-97-2	perfluorohexylethylsulfonic acid	yes		plastics, coatings	emulsifier	0.0001		
-	1187-93-5	perfluoromethylperfluorovinylether		yes	rubber	comonomer	0.0001		
23125	103-71-9	phenyl isocyanate		yes	coatings	monomer		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety
23173	1314-56-3	phosphoric anhydride	yes	yes	coatings	monomer/ catalyst			
79550	9014-85-1	polyethyleneglycol-2,4,7,9-tetramethyl-5-decyn-4,7-diol ether	yes		coatings				Only to be used for sintered PTFE coatings
80160	37349-34-1	polyglyceryl-5 stearate	yes		coatings, silicone				
-	9046-10-0	polyoxypropylene diamine (POPDA) (average Mw≥230 Da; purity: min. 80% POPDA)		yes	coatings	hardener	0.0025		

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23680/81280	9002-89-5	polyvinyl alcohol	yes	yes	plastics, rubber	emulsion polymerization aid, thickener, solvent			manufactured by sintering
-	12136-45-7	potassium oxide	yes		plastics	other additive			
24440	9000-59-3	shellac		yes	coatings	monomer			
-	2098907-70-9	siloxane and silicone, dimethyl, hydroxy-terminated (Mw>7400 Da), ethers with C16-C18-fatty acids esters with pentaerythritol	yes		rubber	polymeric additive			The polymer may contain 'siloxane and silicone, dimethyl, hydroxy-terminated (Mw>7400 Da)', fatty acids, and 'C16-C18-fatty acids ester of pentaerythritol' as impurities
-	7681-49-4	sodium fluoride	yes		plastics	antioxidant		0.15	MTC(T) expressed as fluor
-	1313-59-3	sodium oxide	yes						
-	-	stone wool (EC-No. 926-099-9)	yes		rubber	filler	-		Diameter > 1 µm (average diameter 5 30 µm)
-	7782-99-2	sulfurous acid	yes			additive		0.5	expressed as SO ₂
93420	7646-78-8	tin(IV)chloride	yes		coatings				
93540	108-88-3	toluene			rubber, coatings, silicone	dispersive	0.06		the MTC is higher than the odour threshold
-	101-37-1	triallylcyanurate			rubber	cross linker	0.0025		
25573	16938-22-0	2,2,4-trimethylhexane-1,6 diisocyanate		yes	coatings	monomer		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety
25574	15646-96-5	2,4,4-trimethylhexane-1,6-diisocyanate		yes		monomer		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety
-	3048-64-4	5-vinyl-2-norbornene		yes	rubber	comonomer	0.0025		
95870	-	wheat protein	yes						
26370, 95945	1330-20-7	xylene	yes		coatings, silicone	dispersive agent/solvent	0.05		the MTC is higher than the odour threshold
96180	-	zinc dust	yes		coatings	filler		0.25	MTC(T) expressed as zinc
96200	55799-16-1	zinc hydroxyphosphite	yes		coatings	filler		0.25	MTC(T) expressed as zinc
96240	1314-13-2	zinc oxide	yes		rubber, lubricants	filler, vulcanisation agent		0.25	MTC(T) expressed as zinc

Annex B - Combined List (list of substances under review)

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	37187-22-7	acetylacetone peroxide	yes		plastics		0.0001			NL
	17501-44-9	acetyl acetic acid, zirconium salt	yes		silicone	catalyst-hardener			DE: [1]	DE
	-	acrylic acid, esters with alcohols, monohydric, aliphatic, saturated, C1-C18		yes	coatings	monomer	0.3		MTC expressed as acrylic acid	NL
32920	-	adipic acid, esters with alcohols, monohydric, aliphatic, primary, saturated, (C6-C12)	yes	yes	plastics	plasticizer				NL
-	-	addition products of trivinylcyclohexane and alpha, omega-dihydrogen-polyhydrogenmethyldimethylsiloxanes		yes	silicone	monomer			DE: maximum quantities 10 % [1]	DE
12520	-	alkadienes (C3-C8)		yes	coatings	monomer			QM = 1 mg/kg in EP	NL
		alkoxysilanes with functional groups, e.g. vinyl, methacryl, amino or glycidyl groups	yes		plastics	adhesion promoters for fillers			DE: max. 0.5 %, based on the filler, or max. 0.3 %, based on the plastic component	DE
		alkylarylsulfonic acid	yes		plastics	emulgator			DE: max. 3%	DE
	63449-41-2	alkyl(C8-C18)dimethylbenzylammonium chloride	yes		lubricants					DE
-	-	alkyl(C8-C18)benzene sulfonates, sodium salts		yes	rubber	emulsifier		1.5	MTC(T) for the sum of sodium salts of alkyl(C8-C18)benzene sulfonates, alkyl(C8-C18)naphthalene sulfonates, alkyl(C8-C18)sulfates and alkyl(C8-C18)sulfonates	FR, NL
-	-	alkyl(C8-C18)naphthalene sulfonates, sodium salts		yes	rubber	emulsifier		1.5	MTC(T) for the sum of sodium salts of alkyl(C8-C18)benzene sulfonates, alkyl(C8-C18)naphthalene sulfonates, alkyl(C8-C18)sulfates and alkyl(C8-C18)sulfonates	FR, NL
		alkyl(C1-C8)-silicic acid or orthosilicic acid with aliphatic monohydric alcohols (C2-C4) and the monomethyl ether of ethanediol (methylglycol) and their condensation products, esters of		yes	silicone	crosslinking agent			DE: max. use level 3 % [1]	DE
	54326-11-3	aluminium hydroxide benzoate stearate		yes	lubricants	thickener				DE
34800	-	amide of aliphatic carboxylic acids, C8-C22	yes		silicone	emulgator			DE: max. use level 1.5% [1]	DE, FR
34960	-	3-aminocrotonic acid, esters with butyleneglycol	yes		coatings					FR
35040	-	3-aminocrotonic acid, esters with mono- or dihydric alcohols	yes		coatings					FR
-	1760-24-3	[3-(2-aminoethyl)aminopropyl]trimethoxysilane	yes	yes	plastics, coatings		0.0001			NL
-	-	aramid fiber	yes		rubber	filler, polymeric additive			DE: limited acceptance	DE
	95-33-0	benzothiazyl-2-cyclohexylsulfenamide		yes	rubber	crosslinking agent	NL: 0.0025		DE: limited acceptance and additional requirements for S-cross-linking [2]	DE, FR, NL

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	4979-32-2	benzothiazyl-2-dicyclohexylsulfenamide		yes	rubber	crosslinking agent			DE:limited acceptance and additional requirements for S-cross-linking [2]	DE
38600	78-63-7	2,5-bis(tert-butylperoxy)-2,5-dimethylhexane		yes	plastics, rubber, coatings	vulcanisation agent, aids to polymerization	0.0001		DE: no peroxide on product surface, limited acceptance	DE, FR, NL
-	1068-27-5	2,5-bis(tert-butylperoxy)-2,5-dimethyl-3-hexyne		yes	plastics	aids to polymerization	0.0001			DE, NL
38615 38625	25155-25-3 {2212-81-9 & 2781-00-2}	1,3-(and/or 1,4)-bis(tert-butylperoxyisopropyl)benzene		yes	plastics, rubber	vulcanisation agent, aids to polymerization	0.0001		DE: no peroxide on product surface, limited acceptance	DE, FR, NL
39920	85-60-9	bis(2-methyl-4-hydroxy-5-tert-butylphenyl)butane	yes		rubber	antioxidant	0.015			NL
-	101-67-7	bis(4-octylphenyl)amine; (= 4,4'-dioctyldiphenylamine)	yes		rubber	aging protection products	0.0025		DE: limited acceptance and additional requirements for PAA and sec. amines [2]	DE, NL
12976	39817-09-9	bisphenol-F-diglycidylether		yes	coatings	resin	0.0025 0.0025 0.0001 0.006		BFDGE and hydrolysis products bisphenol F epichlorhydrine 3-monochloro-propane-1,2-diol	DE, NL
	7726-95-6	bromine		yes	rubber	monomer			DE: limited acceptance	DE
	1338-23-4	2-Butanone peroxide		yes	plastics		0.0001			NL
-	95-31-8	N-tert-butyl-2-benzothiazolesulfenamide		yes	rubber	crosslinking agent				FR
40640	98-29-3	4-tert-butylcatechol	yes		coatings, silicone					FR
	3457-61-2	tert-butylcumylperoxide	yes		coatings, silicone	aids to polymerization			DE: no peroxide on the product surface [1]	DE, FR
-	17540-75-9	4-sec-butyl-2,6-di-tert-butylphenol	yes		plastics, rubber	processing excipient, antioxidant	NL: 0.0025		DE: limited acceptance	DE, NL
-	88-18-6	2-tert-butylphenol		yes	plastics, coatings		0.0001			NL
	23847-08-4	caprolactamdisulfide	yes		rubber	accelerator		0.75	MTC as caprolactam DE:limited acceptance	DE
42080	1333-86-4	carbon black	yes		rubber	filler			NL: Toluene extractables: maximum 0.15%, determined according to ISO method 6209; DE: benzo(a)pyrene < 0.000001 mg/l, and sum of 4 PAH <000001 mg/l [sum of: benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, and indeno(1,2,3-cd)pyrene]	DE, NL

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42240	-	carbon fibers	yes		plastics, rubber, coatings, silicone	filler			DE: [1]	DE, FR
14560	126-99-8	2-chloro-1,3-butadiene		yes	rubber	monomer	0.0001		DE: limited acceptance	DE
-	-	Condensation products of ethylene oxide with alcohols (C3-C18), phenolalkyl (C4-C9), and their sulphonated, sulphurated or phosphated derivated		yes	rubber					FR
14877	2556-36-7	1,4-cyclohexanediisocyanate		yes	coatings	monomer		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety	DE
		cyclic organopolysiloxane with methylgroups, alone or n-alkyl (C2-C32)-group		yes	lubricants	basic oil			DE: [1]	DE
-	17796-82-6	N-(cyclohexylthio)phthalimide	yes		rubber	accelerator	NL: 0.15		DE: limited acceptance	DE, NL
-	80-15-9	cumene hydroperoxide		yes	plastics, coatings	initiator, catalyst	0.0001			NL
13250	101-77-9	4,4'-diaminodiphenylmethane	yes	yes	coatings	monomer	0.0001			DE, FR, NL
-	68953-84-4	N,N'-diaryl-p-phenylenediamine	yes		rubber		0.0001			NL
46440	94-36-0	dibenzoyl peroxide		yes	plastics, rubber, silicone	aids to polymerization, vulcanisation agent	0.0001		DE: no peroxide on product surface, limited acceptance	DE, FR, NL
47060	171090-93-0	3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid, esters with linear or branched alcohols (C13-C15)	yes		rubber	antioxidant				DE
-	6731-36-8	1,1-di-tert-butylperoxy-3,3,5-trimethylcyclohexane	yes	yes	plastics, rubber	initiator, crosslinking agent	0.0001		DE: no peroxide on the product surface, limited acceptance	DE, NL
-	96-76-4	2,4-di-tert-butylphenol	yes		rubber	processing excipient			DE: limited acceptance	DE
-	128-39-2	2,6-di-tert-butylphenol	yes		rubber	processing excipient			DE: limited acceptance	DE
-	77-58-7	dibutyltin dilaurate	yes		coatings, silicone	catalyst	NL: ND			FR
-	-	α,ω-dicarboxylic acids (C6-C12), aliphatic, unbranched		yes		monomer				NL
-	133-14-2	2,4-dichlorobenzoyl peroxide		yes	coatings, silicone	crosslinking agent	0.0001		DE: no peroxide on the product surface, limited acceptance [1]	DE, FR, NL
15580	1653-19-6	2,3-dichloro-1,3-butadiene		yes	rubber	monomer	0.0001		DE: limited acceptance	DE
-	80-43-3	dicumyl peroxide		yes	plastics, rubber	aids to polymerization, vulcanisation agent	0.0001		DE: no peroxide on the product surface, limited acceptance	DE, FR, NL
15730	77-73-6	dicyclopentadiene		yes	rubber	monomer	NL: 0.0025 DE: 0.0001		DE: limited acceptance	DE, NL

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48050	111-90-0	diethyleneglycol monoethyl ether	yes		coatings	solvent		0.15	MTC(T) for the sum of all of glycolmonoalkylethers	DE
-	140-01-2	diethylenetriaminepentaacetic acid pentasodium salt	yes		plastics	dispersive agent				NL
-	3710-84-7	N,N-diethylhydroxylamine (impurities: diethylamine: max. 0.1%; N-nitrosodiethylamine: max 0,5 mg/kg)	yes		plastics				DE: max. use 0.02%	DE, NL
-	1047-16-1	5,12-dihydroquino(2,3-b)acridine-7,14-dione	yes		plastics, coatings	pigment				NL
-	3437-84-1	diisobutyl peroxide	yes		plastics	initiator	0.0001		NL: max. use: 0.2% DE: max. use: 0.15%; no peroxide on product surface [1]	DE, NL
-	105-74-8	dilauroyl peroxide	yes		plastics	initiator			DE: no peroxide on product surface [1]	DE
-	109-87-5	dimethoxymethane	yes	yes	plastics	monomer, aids to polymerisation				DE, FR, NL
49225	124-40-3	dimethylamine		yes	rubber, coatings	monomer	0.003			DE, FR
16150 / 49235	108-01-0	dimethylaminoethanol	yes		coatings		0.9			FR
-	7005-47-2	2-dimethylamino-2-methyl-1-propanol	yes		plastics					FR
-	895-85-2	di(4-methyl-benzoyl)peroxide		yes	rubber, silicone	vulcanisation agent, crosslinking agent			no peroxide on product surface, limited acceptance	DE
-	53880-86-7	dimethyldiphenylthiuram disulfide		yes	rubber	crosslinking agent			DE: limited acceptance and additional requirements for S-cross-linking [2]	DE
-	115-10-6	dimethyl ether	yes		coatings	propellant	<0.001			DE
49465	68-12-2	N,N-dimethylformamide	yes		plastics, coatings	solvent	0.025			NL
-	70131-67-8	dimethylsiloxane, hydroxy terminated		yes	rubber, lubricants	basic oil			DE: [1]	DE
50080	3806-34-6	dioctadecyl pentaerythritol diphosphite	yes		plastics	stabilizer				FR, NL
-	971-15-3	di-N-pentamethylenethiuram hexasulfide	yes		rubber	accelerator		0.05	MTC(T) in this specific case means that the restriction shall not be exceeded by the sum of the migration levels of all di-N-pentamethylenethiuram sulfides	FR, NL
-	120-54-7	di-N-pentamethylenethiuram tetrasulfide	yes		rubber	accelerator		0.05	MTC(T) in this specific case means that the restriction shall not be exceeded by the sum of the migration levels of all di-N-pentamethylenethiuram sulfides	FR, NL

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	122-39-4	diphenylamine	yes		plastics, rubber	catalyst			max. use level 0.1%	NL
-	68411-46-1	diphenylamine, octylated	yes		rubber	anti-ageing			DE: limited acceptance and additional requirements on primary aromatic amines and secondary amines [2]; FR: QM = 1.5%	DE, FR
51500	102-06-7	N,N-diphenylguanidine		yes	rubber	crosslinking agent	NL: 0.0025		DE: limited acceptance and additional requirement for S-cross-linking [2]	DE, NL
46400	120-78-5	dithiobis(2-benzothiazole) / dibenzothiazyl disulfide		yes	rubber	crosslinking agent		NL: 0.15	MTC(T) for the sum of dithiobis(2-benzothiazole), 2,2'-dibenzothiazyl disulfide, mercaptobenzothiazole, and 2-(4-morpholino)thiobenzothiazole DE: limited acceptance and additional requirements for S-cross-linking [2]	DE, FR, NL
16920	87057-87-2	2-ethylbutane-1,4-diisocyanate		yes	coatings	monomer		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety	DE, FR
16996	110-80-5	ethyleneglycol monoethyl ether	yes	yes	coatings, silicone	monomer, solvent/diluter		0.15	MTC(T) for sum of (di)ethyleneglycol, monoalkyl (C1,C2,C4,C6) ethers and acetic acid, 2-ethoxyethyl ester	DE
17002	109-86-4	ethyleneglycol monomethyl ether	yes	yes	coatings	solvent/diluter		0.15	MCT(T) for sum of (di)ethyleneglycol, monoalkyl (C1,C2,C4,C6) ethers and acetic acid, 2-ethoxyethyl ester	DE
54120	149-57-5	2-ethylhexanoic acid	yes		plastics	stabilizer, lubricant	0.0025			DE, FR, NL
-	17689-77-9	ethyltrisacetoxysilane		yes	silicone	crosslinking agent			DE: [1]	DE
-	28106-30-1	ethylvinylbenzene	yes		plastics			0.0001	MTC(T) for the sum of ethylvinylbenzene and divinylbenzene (FCM No. 405)	NL
-	78-27-3	ethynylcyclohexanol	yes		coatings, silicone	solvent			DE: [1]	DE, FR
-	-	fatty acids (unbranched, saturated and unsaturated, with an even number of carbon atoms, C8-C22, with a maximum content of 2% unsaponifiable matter), as compounds with bis(2-hydroxyethyl)amine	yes	yes	plastics	antistatic, lubricant	1.5			NL
-	-	fatty acids (unbranched, saturated and unsaturated, with an even number of carbon atoms, C8-C22, with a maximum content of 2% unsaponifiable matter), amides of.	yes	yes	plastics, rubber	lubricant, activator				NL

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/ REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	-	fatty acids (unbranched, saturated and unsaturated, with an even number of carbon atoms, C8-C22, with a maximum content of 2% unsaponifiable matter), esterified with alcohols, monohydric, primary, unbranched, saturated, C4-C18, as well as oleyl alcohol	yes	yes	plastics	lubricant				NL
	7782-41-4	fluorine		yes	plastics, coatings	surface treatment	0.015 0.001 0.0003 0.0006		fluoride perfluorbutanoic acid perfluorpentanoic acid perfluorhexanoic acid - Only for surface treatment	DE
-	-	fibers, natural and synthetic, with the exception of asbestos	yes		coatings	filler				FR, NL
13160 22552	9003-36-5	formaldehyde, polymer with 2-(chloromethyl)oxirane and phenol (Novolak glycidyl ether, NOGE) *	yes	yes	coatings	monomer	0.0025 0.0025 0.0001 0.006		NOGE bisphenol F epichlorohydrin 3-monochloro-propane-1,2-diol Only to be used in powder coatings	DE, NL
54970	9003-08-1	formaldehyde-2,4,6-triamino-1,3,5-triazine, copolymer	yes		coatings				DE: only sintered PTFE	FR
-	9006-24-0	formaldehyde-xylene, copolymer	yes		rubber	resin				FR
-	-	glycerol esters with linear fatty acids saturated or not with an even number of carbon C8-C20 and/or adipic acid, citric acid, oxystearin acid and ricinoleic acid	yes		coatings					FR
18370	592-45-0	1,4-hexadiene		yes	rubber	monomer		0.0006	MTCtap as sum for 1,4 and 1,5 hexadiene DE:limited acceptance	DE, NL
18400	592-42-7	1,5-hexadiene		yes	rubber	monomer		0.0006	MTCtap as sum for 1,4 and 1,5 hexadiene; DE:limited acceptance	DE, FR
-	16096-31-4	1,6 hexanediol diglycidyl ether	yes		coatings		0.0001			FR, NL
-	-	hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics, with EC No. 920-750-0, boiling point 90 to 165 °C, log Po/w=2.2-5.2, insoluble in water	yes			solvent			only to be used if the production process temperature is above the boiling point	DE
-	-	hydrocarbons, C7-C9, isoalkanes, with EC No. 921-728-3, boiling point 90 to 150°C, negligible solubility in water	yes			solvent			only to be used if the production process temperature is above the boiling point	DE
		hydrocarbons, C10-14, aromatic content ≤1%,	yes		plastics, coatings	solvent			only to be used if the production process temperature is above the boiling point	NL
-	-	2-hydroxy-2-sulfinato acetic acid, disodium salt (35-60%), 2-hydroxy-2-sulfonato acetic acid, disodium salt (10-60%) and sodium sulfite (0-40%) (mixture)		yes	plastics	aids to polymerization			max use level of 0.5%	DE
-	2226-96-2	4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl	yes		plastics	blocking agent	NL: 0.0025		DE: no peroxide on product surface [1]	DE, NL
62210	55406-53-6	3-iodo-2-propynylbutylcarbamate	yes		rubber, coatings	accelerator				FR

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/ REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
62255	75-28-5	isobutane	yes		lubricants					FR
18970	78-83-1	isobutanol	yes		silicone	solvent			DE: [1]	DE
-	7425-80-1	isobutyl titanate	yes		silicone	catalyst			DE: [1]	DE, FR
64000	3999-01-7	linoleamide	yes		coatings, silicone	catalyst			DE: [1]	DE, FR
65768	149-30-4	2-mercaptobenzothiazole	yes		rubber	accelerator		NL: 0.15	MTC(T) for the sum of dithiobis(2-benzothiazole), 2,2'-dibenzothiazyl disulfide, mercaptobenzothiazole, and 2-(4-morpholino)thiobenzothiazole; DE: limited acceptance and additional requirements to S-crosslinking [2]	DE, FR, NL
19977	60-24-2	2-mercaptoethanol	yes		plastics, rubber	other add.	0.0025			NL
-	68440-24-4	mercaptoethyl tallate	yes		plastics		1.5			NL
-	-	methacrylic acid, esters with alcohols, monohydric, aliphatic saturated, C1-C18		yes	rubber	monomer	0.3		expressed as methacrylic acid	NL
-	115-19-5	methyl-2-butyn-3-ol-2	yes		coatings, silicone	inhibitor			DE: [1]	DE, FR
21754	15520-10-2	2-methyl-1,5-diaminopentane		yes	coatings	hardener	0.005			DE
-	7786-17-6	2,2-methylenebis(4-methyl-6-nonylphenol)	yes		plastics, rubber	antioxidant	0.0001			FR, NL
21823	598-09-4	methylepichlorhydrin		yes	coatings	monomer	0.0001			DE
-	96-29-7	methyl ethyl ketone oxime	yes		coatings	blocking agent	NL: 0.12		DE: only for hot curing coatings	DE, NL
66715	693-98-1	2-methylimidazole	yes		coatings	additive	0.0025			DE
-	534-26-9	2-methylimidazoline	yes		coatings		0.0001			NL
22065	34813-62-2	2-methylpentane-1,5-diisocyanate		yes	coatings	monomer		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety	DE
-	201687-58-3	methyltin-2-mercaptoethyl tallate	yes		plastics		0.009			NL
-	4253-34-3	methyltrisacetoxysilane		yes	silicone	crosslinking agent			DE: [1]	DE
-	-	methyltrisbutanoximosilane		yes	silicone	crosslinking agent			DE: [1]	DE
-	-	methyltriscyclohexylaminosilane		yes	silicone	crosslinking agent			DE: [1]	DE
-	-	methyltris-sec.-butylaminosilane		yes	silicone	crosslinking agent			DE: [1]	DE
-	-	mono- and/or polytitanic acid, butyl ester (butyltitanate, butylpolytitanate), as necessary, with the monoethylether of ethanediol (ethyleneglycol) in the ratio 1:1		yes	silicone	aids to polymerization			DE: [1]	DE
67280	108-90-7	monochlorobenzene	yes		plastics, coatings		0.001			FR, NL
-	-	mono-n-octyltin tris(maleic acid half ester), prepared with C1-C18, primary, unbranched, saturated alcohols		yes	plastics	stabilizer, antioxidant		0.06	expressed as tin; sum of mono-n-octyltin-compounds	NL

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	-	mono-n-octyltin tris[monoalkyl(C1-C18) maleate]	yes		plastics	stabilizer, antioxidant		0.06	expressed as tin; sum of mono-n-octyltin-compounds	NL
67840	-	montanic esters with ethylene glycol and/or 1,3-butanediol and/or glycerol	yes		plastics					NL
-	51240-95-0 / 64742-48-9	neodecaneperoxoic acid, 1,1,3,3-tetramethylbutyl ester	yes		plastics	initiator	0.0001		DE: max use: 0.06%; no peroxide on product surface [1]	DE
-	9084-06-4	naphtalene sulfonic acid-formaldehyde condensation product, sodium salt	yes		plastics rubber	emulgator		0,0001	only sintered products	DE, FR, NL
68140	7697-37-2	nitric acid	yes		plastics, coatings	anticrusting, pH regulator	0,005			FR
-	26530-20-1	2-octyl-2H-isothiazole-3-one	yes		rubber	preservative				FR
69848	-	organopolysiloxanes, containing methylgroups on each silicon atom which can be partially replaced by alkenyl(C2-C32)groups, alkyl (C2-C32)groups, hydroxylgroups, hydrogen, disubstituted alkylamines and/or hydroxylated alkylgroups, acetoxy and/or alkoxy groups and their condensation products with polyethyleneglycol and/or polypropyleneglycol, fluorinated alkylgoups, and phenylgroups	yes	yes	coatings, silicone	monomer, polymeric additive				FR
-	-	organopolysiloxanes, linear and branched, with methyl groups alone and/or n-alkyl(C2-C32)-, and/or phenyl*, and/or vinyl-, and/or hydroxyl-, and/or alkoxy(C1-C4)-, and/or hydrogen-, and/or carboalkoxyalkyl(-(CH2)2-17-C(O)-O-(CH2)0-17CH3)-, and/or hydroxyalkyl(C1-C3)-groups	yes	yes	silicone	monomer, polymeric additive			DE: [1] * may not contain cyclic polysiloxanes that beside the phenyl group bear an hydrogen atom or a methyl group at the same silicon atom	DE
-	-	organopolysiloxanes, linear or branched, as mentioned PM/REF No. 69848, but in addition with up to max. 5 % hydrogen and/or alkoxy(C2-C4) and/or carboalkoxyalkyl (- (CH2)2-17-C(O)-O-(CH2)0-17CH3)- and/or hydroxyalkyl(C1-C3) groups attached to the silicon atom	yes	yes	silicone	monomer, polymeric additive			DE: [1]	DE
-	-	organopolysiloxanes, linear or branched and/or cyclic*, with methyl groups alone and/or with n-alkyl(C2-C32), phenyl* and/or hydroxyl groups attached to the silicon atom, and their condensation products with polyethylene and/or polypropyleneglycol	yes	yes	silicone	monomer, polymeric additive			DE: [1] * may not contain cyclic polysiloxanes that beside the phenyl group bear an hydrogen atom or a methyl group at the same silicon atom	DE
	68083-14-7 73138-88-2 68440-81-3	organopolysiloxanes, linear or branched with methyl- or phenylgroups		yes	plastics, lubricants	basic oil			DE: [1]	DE
76721	9016-00-6 63148-62-9 68037-74-1	organopolysiloxanes, linear or branched with methylgroups	yes	yes	plastics, lubricants	basic oil, anti-foaming agent			DE: [1]	DE, NL

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/ REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	-	organopolysiloxanes with vinyl groups attached to the silicon atom	yes	yes	silicone	monomer, polymeric additive			DE: [1]	DE
-	-	oxides and hydroxides of aluminium, magnesium, silicon, titanium and zinc	yes			filler				NL
71120	8012-95-1 8042-47-5	paraffin oil	yes		plastics, rubber					FR
-	-	paraffin, solid, including synthetic paraffin		yes	plastics, rubber	lubricant, plasticizer			- ultraviolet light absorption of the paraffin meets the requirements	NL
-	614-45-9	peroxybenzoic acid, tert-butyl ester	yes		plastics, coatings		0.0001			NL
-	15520-11-3	peroxydicarbonic acid, bis(4-tert-butylcyclohexyl) ester	yes		plastics, coatings	initiator	0.0001		DE: no peroxide on product surface [1]	DE, NL
-	16111-62-9	peroxydicarbonic acid, bis(2-ethylhexyl) ester	yes		plastics	initiator	0.0001		DE: no peroxide on product surface [1]	DE, NL
-	26322-14-5	peroxydicarbonic acid, dicetyl ester	yes		plastics	initiator	0.0001		DE: no peroxide on product surface [1]	DE, NL
-	53220-22-7	peroxydicarbonic acid, dimyristyl ester	yes		plastics	initiator	0.0001		DE: no peroxide on product surface [1]	DE, NL
-	927-07-1	peroxypivalic acid, tert-butyl ester	yes		plastics		0.0001			NL
-	3006-82-4	peroxy-2-ethylhexanoic acid, tert-butyl ester	yes		plastics, rubber	initiator	0.0001		DE: no peroxide on product surface [1]	DE, NL
-	7775-27-1	peroxydisulfuric acid, disodium salt	yes		plastics		0.0001			NL
-	26748-41-4	peroxyneodecanoic acid, tert-butyl ester	yes		plastics		0.0001			NL
72048	7727-21-1	peroxydisulfuric acid, dipotassium salt	yes		plastics	initiator	0.0001		DE: no peroxide on product surface [1]	DE, NL
-	-	petroleum hydrocarbon resins (cyclopentadiene type), hydrogenated	yes		rubber	resin, additive	FR: 0.15			DE, FR
-	64741-56-6	petroleum residues, vacuum distilled	yes		rubber	resin				FR
-	92062-05-0	petroleum residues, thermal cracked vacuum	yes		rubber	resin				FR
-	68610-06-0	phenols, butylated, isobutylated or octylated	yes		rubber	antioxidant				FR
-	61788-44-1	phenols, styrenated	yes		rubber, coatings	antioxidant			DE: limited acceptance	DE, FR
-	936-49-2	2-phenylimidazol		yes	coatings	hardener	0.0025			DE
23060	104-49-4	1,4-phenylene diisocyanate		yes	coatings	hardener		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety	DE
-	7774-80-3	phenyl-o-tolyl-phenylenediamine	yes		rubber	protecting agent	0.0001			NL
73680	126-73-8	phosphoric acid, tributyl ester	yes		rubber	antifoaming				FR
-	10294-56-1	phosphorous acid	yes		rubber	antioxidant				NL
-	54771-30-1	phosphorous acid, dinonylphenyl bis(nonylphenyl) ester	yes		plastics	plasticizer	0.3			FR, NL
74960	84-61-7	phthalic acid, dicyclohexyl ester	yes		plastics	plasticizer, pigment batches	0.3			DE, FR
-	110-85-0	piperazine	yes		plastics	monomer	0.075		DE: will be deleted in coatings	DE, NL
-	-	platinum complexes	yes		silicone	catalyst			DE: [1]	DE, FR
76461	9003-01-4	polyacrylic acid	yes		rubber					FR

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/ REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
76520	9003-29-6	polybutene	yes	yes	rubber, lubricants	antifoaming, basic oil				DE, FR
76530	68937-10-0	polybutene, hydrogenated		yes	lubricants	basic oil				DE
-	-	polyalcoxyesters of acids, fatty with an even number of carbon (C8-C24)	yes		plastics					FR
76680	68132-00-3	polycyclopentadiene	yes		plastics	resin				FR
76685	68037-01-4	poly 1-decene hydrated		yes	lubricants	basic oil			impurities of hydrocarbons with number of Carbon smaller than 30 not more than 1.5 %, free of naphthene, aromatics and PAH	DE
76690	-	polydienic resin, synthetic		yes		monomer				FR
-	-	polydimethyl siloxanes and polydimethyl silicones, 3-aminopropyl-group terminated, polymers with 1-isocyanato-3-isocyanatomethyl-3,5,5-trimethylcyclohexane	yes	yes	silicone	monomer, polymeric additive			DE: [1] Specific restrictions for 1-isocyanato-3-isocyanatomethyl-3,5,5-trimethylcyclohexane and 1-amino-3-aminomethyl-3,5,5-trimethylcyclohexane according 10/2011	DE
-	-	polydimethyl siloxanes and polydimethyl silicones, 3-aminopropyl-group terminated, polymers with bis(4-isocyanatocyclohexyl)methane	yes	yes	silicone	monomer, polymeric additive			DE: [1] Specific restrictions for bis(4-isocyanatocyclohexyl)methane and bis(4-aminocyclohexyl)methane according to 10/2011	DE
		polyethylene glycol ethers of monohydric aliphatic alcohols (C12-C20) and of alkylphenols (C2-C9)	yes		silicone				DE: [1]	DE
-	- / 9002-98-6	polyethyleneamine and polyethyleneimine	yes		coatings					FR
-	-	polyethylene aminostearamide ethylsulfate	yes		coatings					FR
-	28208-80-2	poly(ethylene-co-acrylic acid), zinc salt		yes	plastics					FR
77360	9005-07-6	polyethyleneglycol dioleate	yes		coatings	additive				DE
-	-	polyethylene oxide (8-14), esterified with lauric acid, oleic acid, ricinoleic acid and/or stearic acid	yes							NL
-	-	polyethylene oxide, molecular weight > 200 (pEO)	yes		plastics	lubricants, other add.				NL
-	-	polyethylene oxide(4-14)ether of octyl- and/or nonylphenol	yes		plastics, rubber	emulgator	0.25			NL
-	-	polyethylene oxide(4-14)ethers of monohydric, primary, unbranched, saturated C12-C18 alcohols	yes		plastics	plasticizer	0.25			NL
80360	9003-27-4	polyisobutene	yes	yes	rubber, lubricants	polymeric additive, basic oil			composition according CR (EU) No. 10/2011, molecular weight >1000Da	DE, FR
-	-	polypropylene oxide, esterified with lauric acid, oleic acid, ricinoleic acid and/or stearic acid	yes							NL
-	-	polysaccharides	yes		rubber	thickener				FR
-	-	poly(styrene-co-maleic anhydride)	yes		plastics					FR

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/ REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	9003-53-6	polystyrene (with pentane as expansion agent)	yes		rubber	resin				FR
81120	-	polyterpenes	yes		lubricants					DE, FR
81160	9002-84-0	polytetrafluoroethylene	yes		lubricants, coatings	polymeric additive	0.0025		MTC for the residual tetrafluoroethylene	DE
95726	25213-24-5	polyvinyl alcohol, manufactured by saponification of polyvinyl acetate, with a degree of saponification >=20%	yes		plastics	suspending agent			max. use: 1%	DE
-	-	polyvinyl alcohol, partially acetylated with < 20% acetyl groups and a K-value of > 40	yes	yes	coatings, silicone	emulgator				DE, FR
81325	25498-06-0	polyvinyl cyclohexane	yes		rubber	coagulating agent				FR
-	-	poly(vinyl methyl ether)	yes		plastics					FR
81870	35674-65-8	N,N"-1,3-propanediyl bis (N'-octadecylurea)	yes		coatings	defoamer		0.025		DE
-	108-32-7	propylene carbonate	yes		lubricants	additive				DE
83530	71011-24-0	quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, chlorides, compounds with bentonite	yes		lubricants	thickener				DE
83560	68953-58-2	quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	yes		lubricants	thickener				DE
-	-	reticulated cationic polyalkyleneamine a) epichlorhydrin polyamide resin made from diaminopropylmethylamine and epichlorhydrin; b) epichlorhydrin polyamide resin made from epichlorhydrin, adipic acid, caprolactam, diethylene triamine and/or ethylene diamine; c) epichlorhydrin polyamide resin made from adipic acid, diethylene triamine and epichlorhydrin or a melt of epichlorhydrin and ammoniac; d) epichlorhydrin polyamide-polyamide resin made from epichlorhydrin, dimethyladipate and diethylene triamine; e) epichlorhydrin polyamide-polyamide resin made from epichlorhydrin, adipamide and diaminopropylmethylamine	yes		plastics					FR
85120	122-62-3	sebacic acid, bis(2-ethylhexyl) ester	yes		plastics	polymeric additive, plasticizer				FR
85280	52829-07-9	sebacic acid, bis(2,2,6,6-tetramethyl-4-piperidyl) ester	yes		plastics, lubricants	lubricant	0.3			FR, NL
	-	sebacic acid, reaction product with stearylamine, neutralised with calciumhydroxide	yes	yes	lubricants	thickener				DE
24445	-	silanols, with at least one hydroxyl group and one or more methyl, vinyl or phenyl groups on every silicon atom		yes	rubber	monomer	0.0001			NL

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/ REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
	68611-44-9	silicium dioxide, reaction product with dimethyldichlorosilane		yes	lubricants	thickener			DE: [1]	DE
69885	68988-56-7	silicium dioxide, reaction product with trimethylchlorosilane and isopropyl alcohol		yes	lubricants	thickener			DE: [1]	DE
		silicone	yes		rubber	polymeric additive			DE: [1]	DE
-	9006-65-9	silicone oils (organopolysiloxanes with methyl and/or phenyl groups)	yes	yes	rubber, coatings, lubricants	polymeric additive, basic oil			DE: [1]	DE, FR
86440	-	sodium aluminate	yes		coatings					FR
61340	149-44-0	sodium hydroxymethanesulfinate	yes		plastics				max use level of 0.07%	DE
21520	1561-92-8	sodium methallyl sulfonate	yes		plastics		0.25			NL
-	-	solvents (boiling point < 150°C) if eliminated in final product	yes		coatings	solvent				FR
		solvents in factory made products	yes				0.0001			DE
-	-	sorbitol esters with linear fatty acids, saturated or not, with an even number of carbon C8-C20	yes	yes	coatings		0.0001			FR
-	-	stearic acid mono or di esters with ethanediol and/or ether bis(2-hydroxyethyl) and/or triethyleneglycol	yes		plastics	stabilizer				FR
-	-	stearoyl-palmitoyl-benzoyl-methane		yes	plastics					FR
-	68442-68-2	styrene, reaction product with diphenylamine	yes		rubber	stabilizer	0.0025		DE: limited acceptance and additional requirements for PAA and sec. Amines [2]	DE, NL
-	126-33-0	sulfolane	yes		plastics	solvent	0.0025			NL
-	7446-09-5	sulfur dioxide	yes		rubber	monomer				FR
-	61790-38-3	tallow acid, hydrogenated	yes		rubber	accelerator				
-	10591-85-2	tetrabenzylthiuram disulfide	yes		rubber	accelerator			DE: limited acceptance and additional requirements for S cross-linking [2]	DE, FR
-	5593-70-4	tetra-n-butyl titanate	yes		plastics, rubber, silicone	accelerator			DE: [1]	DE, FR
-	112484-41-0	tetraethylbutylphenol-formaldehydesin hydrobrominated	yes		rubber	crosslinking agent			DE: limited acceptance	DE
92400	97-77-8	tetraethylthiuram disulfide	yes		plastics, rubber	expanding agent, accelerator		NL: 0.05	MTC(T) for the sum of tetra(alkyl/aryl)thiuram disulfides and tetramethylthiuram monosulfide DE: limited acceptance and additional requirements for S cross-linking [2]	DE, FR, NL
-	811-97-2	1,1,1,2 -tetrafluoroethane	yes		plastics	expanding agent			max. use level 2.2 %	FR
-	3064-73-1	tetraisobutylthiuramdisulfide	yes		rubber			0.05	MTC(T) for the sum of tetra(alkyl/aryl)thiuram disulfides and tetramethylthiuram monosulfide	

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

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92480	38613-77-3	tetrakis(2,4-di-tert-butylphenyl)-2,4'-biphenylene diphosphonite	yes		plastics, rubber	antifoaming	0.9			NL
92685	126-86-3	2,4,7,9-tetramethyl-5-decyne-4,7-diol	yes		rubber	accelerator			max. use level 0.1 %	FR
-	26678-93-3	tetramethylbutylphenol-formaldehydresin	yes		rubber	crosslinking agent			DE: limited acceptance	DE
92720	137-26-8	tetramethylthiuram disulfide	yes		rubber	accelerator		NL: 0.05	MTC(T) for the sum of tetra(alkyl/aryl)thiuram disulfides and tetramethylthiuram monosulfide DE: limited acceptance and additional requirements for S cross-linking [2]	DE, FR, NL
-	97-74-5	tetramethylthiuram monosulfide	yes		rubber	accelerator		NL: 0.05	MTC(T) for the sum of tetra(alkyl/aryl)thiuram disulfides and tetramethylthiuram monosulfide	FR, NL
-	-	titanic acid, esters with isobutanol, n-butanol and the enolate of ethylacetoacetate	yes		silicone	catalyst			DE: [1]	DE
25208	26471-62-5	toluene diisocyanate		yes	coatings	monomer	0.06	ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety	DE, FR
-	104-15-4	p-toluenesulfonic acid	yes		plastics, rubber	accelerator	0.0005			FR, NL
-	93-69-6	o-tolylbiguanidine	yes		rubber	accelerator	FR: 0.0001 NL: 0.0025			FR, NL
25405	1025-15-6	triallyl isocyanurate	yes		rubber	activator	NL: 0.0001		DE: limited acceptance	DE, NL
25445	28807-72-9	tricyclododecane diisocyanate		yes	coatings	hardener		ND (<0.0001)	QM= 1 mg/kg. QM and MTC(T) are both expressed as isocyanate moiety	DE
25915	90-72-2	2,4,6-tri(dimethylaminomethyl)phenol	yes		rubber, coatings	activator	0.0001			NL
-	78-40-0	triethyl phosphate	yes		plastics, coatings		0.375			NL
	26780-96-1	2,2,4-trimethyl-1,2-dihydrochinolin (polymerized)	yes		rubber	aging protection products			DE: limited acceptance	DE
-	-	trivinyl cyclohexane and α,ω -dihydrogenpolyhydrogenmethyldimethyl-siloxanes, addition products of	yes	yes	silicon rubber	monomer, polymeric additive			DE: max. use level 10 % [1]	DE
-	-	urea-formaldehyde condensation products	yes		plastics, coatings	macromolecular agent, polymer, resin, adhesive, hygroscopic agent			intermediate according coating guideline	DE, NL
-	7718-98-1	vanadium chloride	yes		plastics, rubber	catalyst		0.0025	MTC(T) expressed as vanadium	NL
-	11099-11-9	vanadium oxide	yes		plastics, rubber	catalyst		0.0025	MTC(T) expressed as vanadium	DE, NL

Combined List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	-	vinyl esters of monohydric, saturated, aliphatic carboxylic acids, C2-C20		yes	plastics	monomer	0.0025			NL
26230	88-12-0	vinylpyrrolidone	yes		plastics	lubricant				DE, NL
-	14726-36-4	zinc dibenzylthiocarbamate	yes		rubber	accelerator		NL: 0.05	MTC(T) for the sum of all listed zinc-(alkyl/aryl)dithiocarbamates DE: limited acceptance	DE, FR, NL
96160	136-23-2	zinc dibutylthiocarbamate	yes		rubber	accelerator		NL: 0.05	MTC(T) for the sum of all listed zinc-(alkyl/aryl)dithiocarbamates DE: limited acceptance and additional requirements for S cross-linking [2]	DE, FR, NL
96170	14324-55-1	zinc diethylthiocarbamate	yes		rubber	accelerator		NL: 0.05	MTC(T) for the sum of all listed zinc-(alkyl/aryl) dithiocarbamates	FR, NL
-	137-30-4	zinc dimethylthiocarbamate	yes		rubber, coatings	accelerator, preservative		0.05	MTC(T) for the sum of all listed zinc-(alkyl/aryl) dithiocarbamates	NL
-	136-53-8	zinc-di-2-ethylhexanoate	yes		silicone	hardener			QM = 1.5 % DE: [1]	DE, NL
	84604-96-6	zinc diisononyldithiocarbamate	yes		rubber	crosslinking agent			DE: limited acceptance and additional requirements for S cross-linking [2]	DE
96400	53801-45-9	zirconium oxide	yes		plastics, rubber	stabilizer, antioxidant, drying agent	NL: 0.1		MTC is expressed as zirconium	FR, NL

[1] BfR Recommendations may have additional requirements. When the UBA-Guidelines get mandatory evaluation criteria no reference to BfR-Recommendations could be set. Therefore the substances will be checked and the requirements will be set in the mandatory evaluation criteria.

[2] Additional requirements in DE:

Material	Parameter	Restriction
plastics	sum of Primary Aromatic Amines (PAA)	MTC _{tap} = N.D (DL= 0.1 µg/l)
rubber	formaldehyde	MTC _{tap} = 750 µg/l
	sum of PAA (a.o. aniline, o-toluidine)	MTC _{tap} = N.D. (DL = 2 µg/l)
	sum of secondary amines ¹	MTC _{tap} = 250 µg/l
	S-cross-linked	2-mercaptobenzothiazole
N-nitrosamines ²		MTC _{tap} = 0.3 mg/l
coatings	polyurethanes, polyamides and epoxy coatings	sum of PAA MTC _{tap} = N.D (DL= 0.1 µg/l)

Annex C - Obsolete List (list of obsolete substances)

Obsolete List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	3179-56-4	acetyl cyclohexylsulfonyl peroxide	yes		plastics	initiator	0.0001		no peroxid on the product surface	DE, NL
-	25551-14-8	1,1'-azobis(1-cyclohexanecarbonitrile)	yes		plastics	initiator			max. 0.2 %	DE, NL
-	78-67-1	2,2'-azobis(isobutyronitrile)	yes		plastics	initiator				NL
-	2167-23-9	2,2-bis(tert-butylperoxy)butane	yes		plastics	aids to polymerization				DE
38625	2781-00-2	1,4-bis(tert-butylperoxyisopropyl)benzene	yes		plastics	visc. contr. agent	0.0001			NL
40630	2782-40-3	N-butylbenzamide	yes							FR
-	136-51-6	calcium bis(2-ethylhexanoate) (= calcium octoate)	yes		plastics					FR
14587	1204-28-0	4-(chloroformyl)phthalic anhydride		yes	coatings	monomer	0.0025		QMA =0.05 mg/dm ² ; only for PTFE sintered	FR
-	2568-90-3	dibutoxymethane (butylal)	yes		plastics					NL
-	87-97-8	2,6-di-tert-butyl-4-(methoxymethyl)phenol	yes		rubber	protecting agent	0.0001			NL
-	1067-33-0	dibutyltin diacetate	yes		coatings, silicone	catalyst				FR
-	4253-22-9	dibutyltin sulfide	yes				0.002		expressed as tin	NL
-	1717-00-6	1,1-dichloro-1-fluoroethane	yes		plastics, coatings	expanding agent				FR
-	68479-98-1	diethylmethylbenzenediamine	yes							FR
-	109-31-9	dihexyl azelate	yes							FR
48560	36265-41-5	dihydro-1,4-dimethyl-2,6-dicarbododecyloxy-3,5-pyridine	yes		plastics	stabilizer				FR
49040	1115-01-1	9,10-dihydroxystearic acid, methyl ester	yes		plastics	lubricant				FR
49120	3271-22-5	2,4-dimethoxy-6-(1-pyrenyl)-1,3,5-triazine	yes		plastics	azurant				NL
-	793-24-8	N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine	yes		rubber				QM = 1.5%	FR
-	-	dimethyldialkyl(C16 and/or C18)ammoniumacetate	yes		plastics					NL
75840	117-84-0	di-n-octyl phthalate	yes		plastics, rubber, coatings	plasticizer	0.11			NL
-	2432-87-3	di-n-octyl sebacate	yes		plastics, rubber	plasticizer	0.0001			NL
-	-	N,N'-dioleoyl diaminoethane	yes							FR
-	5518-18-3	N,N'-dipalmitoyl diaminoethane	yes		coatings					FR
-	-	N,N'-distearoyl diaminoethane	yes		coatings					FR
-	151-41-7	dodecylsulfate	yes		coatings, silicone					FR
53040	35001-52-6	2-ethoxy-5-tert-butyl-2'-ethyloxalic acid bisanilide	yes		plastics					FR

Obsolete List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

PM/REF No	CAS No	Name	Use as additive or PPA	Use as monomer or other starting substance	Material	Technological function	MTC (mg/l)	MTC(T) [mg/l]	Restrictions and specification	Auth. MS
-	75-04-7	ethylamine	yes		plastics	catalyst				DE, NL
-	143-06-6	hexamethylenediamine carbamate	yes		rubber	accelerator				FR
-	1191-25-9	6-hydroxyhexanoic acid	yes					0.0025	MTC(T) in this specific case means that the restriction shall not be exceeded by the sum of the migration levels of 6-hydroxyhexanoic acid and caprolacton (FCM No 342)	NL
-	59118-78-4	2-mercaptoethyl oleate	yes		plastics	stabilizer, antioxidant	1.5			NL
-	96-45-7	2-mercaptoimidazoline	yes		rubber	accelerator	0.0025			NL
-	96-53-7	2-mercaptothiazoline	yes		rubber	accelerator	0.0001			FR, NL
66000	-	3'-methoxy-4'-hydroxyphenyl-2-indole	yes		plastics	stabilizer				FR
-	4088-22-6	N-methyldioctadecylamine	yes							NL
-	694-91-7	5-methylenebicyclo[2.2.1]hept-2-ene	yes	yes	rubber, coatings	monomer	0.0025			NL
22333	79-11-8	monochloroacetic acid		yes	coatings		0.0025			FR
-	-	monoethanolamine laurylsulfate	yes		coatings					FR
-	102-77-2	morpholiniothio-2-benzothiazole	yes		rubber	accelerator		0.15	MTC(T) in this specific case means that the restriction shall not be exceeded by the sum of the migrations levels of dithiobis(2-benzothiazole), 2,2'-dibenzothiazyl disulfide, mercaptobenzothiazole, and 2-(4-morpholino)thiobenzothiazole	NL
-	-	myristyl polyethylene glycol (3-8) ether with oxyacetic acid		yes	plastics	antistatic				NL
67900	8030-30-6	naphtha	yes		plastics					FR
69120	142-77-8	oleic acid, butyl ester	yes		plastics					NL
-	1912-84-1	oleic acid, tin(II) salt	yes		plastics		0.0025			NL
-	-	2-heptadecyl-4,4-bis (methylenestearate) oxazoline	yes		coatings					FR
70080	80-51-3	4,4'-oxybis(benzene sulfonyl hydrazide)	yes		plastics	blowing agent				FR
70320	629-54-9	palmitamide	yes		coatings, silicone	catalyst				FR
71710	98-77-1	pentamethylenedithiocarbamic acid, piperidine salt	yes		rubber	accelerator				FR
-	13878-54-1	pentamethylenedithiocarbamic acid, zinc salt	yes		rubber	accelerator				FR
-	79-21-0	peracetic acid	yes			initiator				FR
-	107-71-1	peroxyacetic acid, tert-butyl ester	yes		plastics	initiator	0.0001			DE, NL

Obsolete List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

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-	1561-49-5	peroxydicarbonic acid, dicyclohexyl ester	yes		plastics	initiator	0.0001			DE, NL
-	105-64-6	peroxydicarbonic acid, diisopropyl ester	yes		plastics	initiator	0.0001			DE, NL
-	13122-18-4	peroxy(3,5,5-trimethylhexanoic acid), tert-butyl ester	yes		plastics	initiator	0.0001			DE, NL
72105	-	phenols and/or cresols-styrene and/or alpha-methylstyrene and/or C3-C12 olefins, copolymers	yes		rubber		0.0001			NL
-	-	N-phenyl-N'-isohexyl-p-phenylenediamine	yes	yes	rubber	protecting agent	0.0001			NL
72400	132-27-4	2-phenylphenol, sodium salt	yes		rubber	preservative			QM = 0.02%	FR
72560	7144-65-2	3-(2-phenyl)phenoxy-1,2-epoxypropane	yes		plastics					FR
74000	78-42-2	phosphoric acid, tris(2-ethylhexyl) ester	yes		plastics	filler / pigments batches				DE, FR
74800	-	phthalic acid, di-heptyl/nonyl ester	yes		rubber	plasticizer				FR
75040	-	phthalic acid, diesters of hexadecanol and/or octadecanol	yes							FR
75200	3648-61-1	phthalic acid, diheptylic ester	yes		plastics	plasticizer				FR
-	68410-23-1 83487-96-1	polyaminoamide	yes		rubber, coatings	macromolecular agent	0.0001			NL
-	-	polyethylene oxide desorbitan monolaurate	yes		coatings	emulgator				NL
23710	63148-65-2	polyvinyl butyral	yes		plastics					FR
-	11137-59-0	potassium aluminate	yes		rubber	buffering agent				FR
-	74-98-6	propane	yes		plastics	pol.contr. agent				NL
-	-	reaction products of styrene and/or methylstyrene and/or alkenes (C3-C12) with phenol and/or methylphenol	yes		coatings	anchorage agent	0.0025			NL
83650	9008-34-8	resin acids and rosin acids, manganese salts	yes		coatings		0.03			FR
83760	-	ricinoleic acid, amyl ester	yes		plastics					FR
83760	-	ricinoleic acid, butyl ester	yes		plastics					FR
83760	-	ricinoleic acid, ethyl ester	yes		plastics					FR
-	-	rosin, dimerised, esters	yes		plastics					FR
-	-	rosin, hydrogenated, esters	yes		plastics, rubber	plasticizer				FR
86080	10101-52-7	silicic acid, zirconium salt	yes		plastics	lubricant, fillers				DE, FR
-	10026-04-7	silicon tetrachloride	yes		plastics	catalyst				DE, NL
-	-	soybean oil, modified with sulfur	yes		plastics	lubricant				NL
89520	8045-34-9	stearic acid, esters with pentaerythritol	yes		plastics					FR
89600	111-61-5	stearic acid, ethyl ester	yes		plastics					FR
90000	646-13-9	stearic acid, isobutyl ester	yes		plastics					FR
90480	6382-13-4	stearic acid, pentyl ester	yes		coatings					FR
24560	111-63-7	stearic acid, vinyl ester		yes	plastics	monomer				DE

Obsolete List for Organic Materials Coming into Contact with Drinking Water - 12 August 2020

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-	-	styrene (2 mol) condensed with 1 mol of a mixture of phenol and o-, m- en p-cresols, Brookfield viscosity of the end product at 25°C between 1400 and 1700 cP	yes		plastics	polymeric additive	0.0001			NL
-	1634-02-2	tetrabutylthiuram disulfide	yes		rubber	accelerator		0.05	MTC(T) in this specific case means that the restriction shall not be exceeded by the sum of the migrations levels of tetrabutylthiuram disulfide, tetraethylthiuram disulfide, tetramethylthiuram disulfide and tetramethylthiuram monosulfide	NL
92960	111-17-1	thiodipropionic acid	yes		plastics, coatings	antioxidant				FR, NL
-	11130-18-0	titanium chloride	yes		plastics	catalyst				NL
-	7550-45-0	titanium tetrachloride	yes		plastics	other add.				NL
93790	102-82-9	tributylamine	yes		plastics	residue of catalyst	0.0001			DE, NL
-	106-10-5	triethyleneglycol dioctanoate	yes							FR
-	10380-08-2	triphosphoric acid	yes				0.0005			FR, NL
72060	89-03-8	vasaline, pharmaceutical quality		yes	rubber	plasticizer				NL
26290	25013-15-4	vinyltoluene		yes	plastics	monomer/ additive				DE
26215	100-69-6	2-vinylpyridine		yes	rubber	monomer				FR
-	14634-93-6	zinc ethylphenyldithiocarbamate	yes		rubber	accelerator		0.05	MTC(T) in this specific case means that the restriction shall not be exceeded by the sum of all listed zinc-(alkyl/aryl) dithiocarbamates	NL