



Floorify nv
Kruisboommolenweg 30
8800 ROESELARE

Your notice of
 08-10-2020

Your reference

Date
 19-11-2020

Analysis Report 20.06206.01

Required tests :

Centexbel

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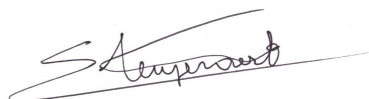
Determination of the elemental composition (screening)

Determination of the composition using XRF-screening

LCMS screening (Reach SVHC)

Determination of the emission profile by thermal extraction.

Sample id	Information given by the client	Date of receipt
T2021897	Floorify vinyl planks & tiles	08-10-2020



Stijn Steuperaert
 Order responsible

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 The results of the analysis cover the received samples. Centexbel is not responsible for the representativeness of the samples.
 In assessing compliance with the specifications, we did not take into account the uncertainty on the test results.



Reference: T2021897 - Floorify vinyl planks & tiles

Reach SVHC conclusion

The results for the analysis on specific elements and substances show that the sample does not contain any of the compounds mentioned on the Reach candidate list of 25-06-2020 (substances of very high concern), in concentrations > 0.1 mass%.



Reference: T2021897 - Floorify vinyl planks & tiles

Determination of the elemental composition (screening)

Date of ending the test 19-11-2020
Standard used Centexbel
Sample preparation Mineralization using concentrated acids in a microwave.
Determination ICP-OES quantitative measurement of specified elements with 1-point calibration

Results

Determination of B (boron)

Metals	Reporting limit mg/kg	Concentration mg/kg
B (boron)	20.0	< 20.0

The result of the Boron determination indicates compounds* of the REACH SVHC list (25-06-2020) are not present in the samples in concentrations >0.1 %

*boric acid, disodium tetraborate- anhydrous; tetraboron disodium heptaoxide- hydrate, diboron trioxide, sodiumperoxometaborate, sodiumperborate, disodium octaborate

Reference: T2021897_01s - FFloorify vinyl planks & tiles_Top & bottom

Determination of the composition using XRF-screening

Date of ending the test 19-11-2020
Method used Centexbel
Sample preparation Cutting, weighing + determination of thickness, presentation under vacuum
Determination X-rays fluorescence. Screening of the elements from sodium (11) up to uranium (92) using an EDX detector.
Semi-quantitative measurements are performed using Uniquant based on a fundamental parameter method.

Results

Reporting limit (mass %) 0.01

Matrix PVC

Element	Mass %	Mass %
As	≤ 0.010	≤ 0.010
Co	≤ 0.010	≤ 0.010
Cr	≤ 0.010	≤ 0.010
Pb	≤ 0.010	≤ 0.010
Sn	0.024	≤ 0.010
Br	≤ 0.010	≤ 0.010
Zr	≤ 0.010	≤ 0.010
Al	≤ 0.010	≤ 0.010
Si	2.9	≤ 0.010
Cd	≤ 0.010	≤ 0.010

Px=phosphor; Sx=sulphur

Specific screening for elements indicating possible presence of Reach SVHC compounds (25-06-2020)*

The results for the specific elements show that the sample does not contain the (mainly inorganic) compounds* on the Reach candidate list (substances of very high concern), in concentrations >0.1 mass%.

* diarsenic tri- et pentoxide, arsenic acid, calcium arsenate, leadhydrogenarsenate, triethylarsenate, cobaltdiacetate, cobaltsulphate, cobaltdichloride, cobaltcarbonate, cobaltdinitrate, cadmium, cadmium oxide, cadmium chloride, cadmium sulphide, cadmium fluoride, cadmium sulphate, cadmium nitrate, cadmium hydroxide, cadmium carbonate, potassium chromate and dichromate, sodium chromate and dichromate, chromiumtrioxide, ammoniumdichromate, strontiumchromate, , chromic and dichromic acid, oligomers of chromic and dichromic acid, pentazincchromate octahydroxide, dichromium tris(chromate), potassium hydroxyoctaoxidizincatedichromate, lead, lead chromate and pigments based on lead chromate, Orange lead (lead tetroxide), Pyrochlore antimony lead yellow, Lead monoxide, Trilead bis(carbonate)dihydroxide, leaddinitrate
leadoxidesulfate, Lead titanium trioxide, Silicic acid, lead salt, Lead titanium zirconium oxide, Pentalead tetraoxide sulphate, Trilead dioxide phosphonate, Tetralead trioxide sulphate, Lead bis(tetrafluoroborate), Tetraethyllead, Leaddiazide - leadazide, leaddipicrate, leadstypnate, Lead cyanamidate, [Phthalato(2-)]dioxotrillead, Dioxobis(stearato)trilead, Acetic acid lead salt(basic), C16-C18 fatty acid lead salts, Sulfurous acid



lead salt (dibasic), Lead(II) bis(methanesulfonate), Lead di (acetate), HBCDD, DecaBDE, bistributyltin oxide, dibutyltin dichloride, dibutylbis(pentane-2,4-dionato-O,O')tin, aluminosilicate, silicic acid barium salt (lead doped), refractory ceramic fibres, zirconia aluminosilicate refractory ceramic fibres, triethyl phosphate, 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE), 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (MOTE)

Reference: T2021897_02s - Floorify vinyl planks & tiles_Middle

Determination of the composition using XRF-screening

Date of ending the test 30-10-2020
Method used Centexbel
Sample preparation Cutting, weighing + determination of thickness, presentation under vacuum
Determination X-rays fluorescence. Screening of the elements from sodium (11) up to uranium (92) using an EDX detector. Semi-quantitative measurements are performed using Uniquant based on a fundamental parameter method.

Results

Reporting limit (mass %) 0.01

Matrix PVC

Element	Mass %
As	≤ 0.010
Co	≤ 0.010
Cr	≤ 0.010
Pb	≤ 0.010
Sn	≤ 0.010
Br	≤ 0.010
Zr	≤ 0.010
Al	≤ 0.010
Si	≤ 0.098
Cd	≤ 0.010

Px=phosphor; Sx=sulphur

Specific screening for elements indicating possible presence of Reach SVHC compounds (25-06-2020)*

The results for the specific elements show that the sample does not contain the (mainly inorganic) compounds* on the Reach candidate list (substances of very high concern), in concentrations >0.1 mass%.

* diarsenic tri- et pentoxide, arsenic acid, calcium arsenate, leadhydrogenarsenate, triethylarsenate, cobaltdiacetate, cobaltsulphate, cobaltdichloride, cobaltcarbonate, cobaltdinitrate, cadmium, cadmium oxide, cadmium chloride, cadmium sulphide, cadmium fluoride, cadmium sulphate, cadmium nitrate, cadmium hydroxide, cadmium carbonate, potassium chromate and dichromate, sodium chromate and dichromate, chromiumtrioxide, ammoniumdichromate, strontiumchromate, , chromic and dichromic acid, oligomers of chromic and dichromic acid, pentazincchromate octahydroxide, dichromium tris(chromate), potassium hydroxyoctaoxidizincatedichromate, lead, lead chromate and pigments based on lead chromate, Orange lead (lead tetroxide), Pyrochlore antimony lead yellow, Lead monoxide, Trilead bis(carbonate)dihydroxide, leaddinitrate
leadoxidesulfate, Lead titanium trioxide, Silicic acid, lead salt, Lead titanium zirconium oxide, Pentalead tetraoxide sulphate, Trilead dioxide phosphonate, Tetralead trioxide sulphate, Lead bis(tetrafluoroborate), Tetraethyllead, Leaddiazide - leadazide, leaddipicrate, leadstypnate, Lead cyanamidate, [Phthalato(2-)]dioxotrillead, Dioxobis(stearato)trilead, Acetic acid lead salt(basic), C16-C18 fatty acid lead salts, Sulfurous acid



lead salt (dibasic), Lead(II) bis(methanesulfonate), Lead di (acetate), HBCDD, DecaBDE, bistributyltin oxide, dibutyltin dichloride, dibutylbis(pentane-2,4-dionato-O,O')tin, aluminosilicate, silicic acid barium salt (lead doped), refractory ceramic fibres, zirconia aluminosilicate refractory ceramic fibres, triethyl phosphate, 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE), 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (MOTE)



Reference: T2021897 - Floorify vinyl planks & tiles

LCMS screening (Reach SVHC)

Date of ending the test	03-11-2020
Standard used	Centexbel
Extraction method	Methanol/DMSO ultrasonic extract
Analytical method	LC-MS

Results	
Reporting limit	See table

The method is used to screen for the presence of organic REACH SVHC compounds (25-06-2020)*.

The results for the specific substances show that the sample does not contain the (mainly organic) compounds* on the Reach candidate list (substances of very high concern), in concentrations >0.1 mass%.

* 4-nonylphenols (branched+linear) (NP), Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP), 4-nonylphenols (branched+linear) ethoxylated (NPEO), 4-(1,1,3,3-tetramethylbutyl)phenol (OP), 4-(1,1,3,3-tetramethylbutyl)phenol ethoxylated (OPEO), Heptylphenol (branched + linear) (HP), RP-HP (with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear), 4-tert-butylphenol (pTBP), Bisphenol A (BPA), p-(1,1, - dimethylpropyl)phenol (PTAP), Pentadecafluorooctanoic acid (PFOA), (C9-C14) perfluorocarboxylicacids (PFA's), Pefluorononanoic acid (+Na and NH₄ salts) (PFNA), Pefluorodecanoic acid (+Na and NH₄ salts) (PFDA), Perfluorohexane-1-sulfonic acid and its salts (PFHxS), 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acryl halides (HFPO-DA), Perfluorobutane sulfonic acid (PFBS) and its salts, Ammonium pentadecafluorooctanoate (APFO), Azodicarbonamide (ADCA), Imidazoline-2-thiol, C.I. Direct Red 28, C.I. Direct Black 38, 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320), 2,4 di-tert butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327), 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328), 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350), 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one (Irgacure 907), 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone (Irgacure 369), Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA), butyl 4-hydroxybenzoate, 2-methylimidazole, 1-vinylimidazole



Components	C (%)
NP	< 0.0010
NPEO	< 0.010
OP	< 0.010
OPEO	< 0.010
HP	< 0.0010
PTBP	< 0.010
BPA	< 0.010
PTAP	< 0.010
PFOA	< 0.010
PFA's	< 0.010
PFNA	< 0.010
PFDA	< 0.010
PFHxS	< 0.010
HFPO-DA	< 0.010
PFBS	< 0.010
APFO	< 0.010
ADCA	< 0.010
Imidazoline-2-thiol	< 0.010
C.I. Direct Red 28	< 0.010
C.I. Direct Black 38	< 0.010
UV 320	< 0.010
UV 327	< 0.010
UV 328	< 0.010
UV 350	< 0.010
Irgacure 907	< 0.010
Irgacure 369	< 0.010
TMA	< 0.010
Butyl4-hydroxybenzoate	< 0.010
2-methylimidazole	< 0.010
1-vinylimidazole	< 0.010

Reference: T2021897 - Floorify vinyl planks & tiles

Determination of the emission profile by thermal extraction.

Date of ending the test	30-10-2020
Method used	Centexbel
Sample preparation	One or more 1 cm diameter samples are heated in a glass tube at a fixed temperature under an inert gas flow. The gas flow is lead over a tenax filled tube where volatile organic compounds (VOC's) are trapped. The tenax tube with the VOC's is thermally desorbed. Released VOC's are cryo trapped and injected into a GCMS.
Temperatuur	120°C
Time	30'
Analytical method	Gas chromatography with Agilent MSD detector

Results

As conditions 120°C and 30' were used. These relate to the conditions used eg in VDA 278 to evaluate fogging behaviour of plasticisers. For the more volatile VOC's semi-quantitative results (µg/g) can be obtained while for the heavier VOC's and SVOC's it is a screening method for their presence. If present in higher concentrations only part of the products have already evaporated (results as ng/min.g).

Specific screening for substances indicating possible presence of Reach SVHC compounds (25-06-2020)*

The results for the specific substances show that the sample does not contain the compounds* on the Reach candidate list (substances of very high concern), in concentrations >0.1 %.

* Anthracene, anthracene oils, anthracene pastes, benzo(a) pyrene, benzo(a)anthracene, fluoranthene, benzo(k)fluoranthene, phenanthrene, pyrene, chrysene, benzo(ghi)perylene, pitch coal tar (high temp), dibutylphthalate (DBP), diisobutylphthalate (DiBP), Bis(2-methoxyethyl) phthalate (DMEP), benzylbutylphthalate (BBP), bis-(2-ethylhexyl)phthalate (DEHP), 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DHIP), 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP), 1,2-benzenedicarboxylic acid, C6-C8-C10-alkylesters with $\geq 0.3\%$ of dihexyl phthalate (Di(C6-C10)alkylphthalate esters, diisopentylphthalate (DIPP), N-pentyl-isopentylphthalate, dipentylphthalate (DPP), dipentylphthalate (branched, linear), dihexylphthalate (DHP), dicyclohexyl phthalate (DCHP), dihexylphthalate (branched, linear), diisohexyl phthalate, Cyclohexane-1,2-dicarboxylic anhydrides (Hexahydrophthalic anhydrides - HHPA), Hexahydromethylphthalic anhydrides (MHHPA), 3-benzylidene camphor; 3-BC, 2,2-bis(4'-hydroxyphenyl)-4-methylpentane, 2,4-dinitrotoluene, 2,4-diaminotoluene, 4,4'- Diaminodiphenylmethane (MDA), Formaldehyde- oligomeric reaction products with aniline, o-Anisidine, o-Toluidine, 4,4' -methylenedi-o-toluidine, 2,2'-dichloro-4,4'-methylenedianiline, diamonidiphenylether and its salts, p-aminoazobenzene, p-cresidine, o-aminoazotoluene, biphenyl-4-ylamine, 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine hexabromocyclododecane (HBCDD), trischloroethylphosphate, trixylylphosphate, Dechlorane Plus, C10-C13 chloroalkanes, Phenolphthalein, musk xylene, formamide, acrylamide, N-methylacetamide, N,N-dimethylacetamide, N,N'-dimethylformamide, 1-methyl-2-pyrrolidone, trichloroethylene, 1,2,3-trichloropropane, 1,2-dichloroethane, 1-bromopropane, 1,2-Diethoxyethane, EGDME, TEGDME, bis(2-methoxyethyl) ether, Furan, propylene oxide, 2-methoxyethanol, 2-ethoxyethanol, 2-ethoxyethylacetate, 2-methoxyethyl acetate, 4-(1,1,3,3-tetramethylbutyl)phenol, 4-Nonylphenol (branched+linear), Dinoseb, TGIC, β -TGIC, Michler's ketone, Michler's base, C.I. Basic Violet 3, C.I. Solvent Blue 4, C.I. Basic Blue 26, 4,4'-bis(dimethylamino)-4''-(methylamino) trityl alcohol, methoxyacetic acid, dimethylsulphate, diethylsulphate, 1,3-propanesultone, nitrobenzene, karanal, octamethylcyclotetrasiloxane(D4), decamethylcyclopentasiloxane(D5),

dodecamethylcyclohexasiloxane(D6), terphenyl; hydrogenated, ethylenediamine(EDA), Bistributyltinoxide is detected along with the inorganic compounds using XRF

A2006206 T2021897

Flooring mv, Roeselare
Flooring vinyl planks & tiles

Group	MReach	Apparatus Gerstel			
		CAS	tR min	ng/min.g	µg/g (30', 120°C)
X263	Dibutylphthalate (DBP)	84-74-2	36,67	<10	<5
X287	Diisobutylphthalate (DiBP)	84-69-5	35,01	<10	<5
X314	Benzylbutylphthalate (BBP)	85-68-7	45,64	-	-
X288	Bis-(2-ethylhexyl)phthalate (DEHP)	117-81-7	53,93	-	-
X361	Di-n-heptyl phthalate	3648-21-3	53,64	-	-
X334	C6-C8 phthalates, C7 rich (DHIP)	71888-89-6	48,15	-	-
X335	C7-C11 phthalates (DHNUP)	68515-42-4	49,45	-	-
X349	Bis(2-methoxyethyl)phthalate (DMEP)	117-82-8	37,05	-	-
X389	Diisopentylphthalate (DiPP)	605-50-5	38,78	-	-
X390	Dipentylphthalate (DPP)	131-18-0	40,47	-	-
X391	N-pentylisopentylphthalate	776297-69-9	39,60	-	-
X371	Dipentylphthalate isomers	784777-06-0	36,93	-	-
X408	Diethylphthalate (DEP)	84-75-3	44,85	-	-
X557	Diisohexyl phthalate	71850-09-4	43,50	-	-
X409	Diethylphthalates, branched+linear	68515-50-4	42,85	-	-
X417	Di(C6-C10)alkyl phthalate >0,3%DHP	68515-51-5	44,98	-	-
X418	Di(C6/C8/C10)alkyl phthalate >0,3%DHP	68648-93-1	45,00	-	-
X526	Dicyclohexylphthalate	84-61-7	52,58	-	-
X369	Hexahydrophthalic anhydrides	85-42-7	23,18	-	-
X392	Hexahydromethylphthalic anhydrides	25550-51-0	24,85	-	-
X286	Phenanthrene	85-01-8	33,69	-	-
X315	Anthracene	120-12-7	33,93	-	-
X353	Fluoranthene	206-44-0	38,99	-	-
X285	Pyrene	129-00-0	40,10	-	-
X354	Chrysene	218-01-9	50,41	-	-
X355	Benz(a)anthracene	56-55-3	50,05	-	-
X356	Benzo(a)pyrene	50-32-8	60,19	-	-
X531	Benzo(k)fluoranthene	207-08-9	58,41	-	-
X532	Benzo(ghi)perylene	191-24-2	71,23	-	-
X336	Pitch, coal tar, high temp	65996-93-2	39,65	-	-
X313	Short chain chlorinated paraffins	85535-84-8	31,08	-	-
X528	Terphenyl, hydrogenated (cluster)	61788-32-7	37,79	-	-
X278	TCEP (tri(2-chloroethyl)phosphate)	115-96-8	32,52	-	-
X410	Trisylphosphate	25155-23-1	56,10	-	-
X319	Hexabromocyclododecane	3194-55-6	58,08	-	-
X419	Dechlorane plus	13560-89-9	52,55	-	-
X529	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	15087-24-8	36,49	-	-
X347	4-(1,1,3,3-Tetramethylbutyl)phenol	140-66-9	30,20	-	-
X367	4-Nonylphenol (cluster)	104-40-5	31,60	-	-
X330	Formamide	75-12-7	5,87	-	-
X221	Dimethylformamide (DMF)	68-12-2	7,69	-	-
H110	N-methyl-2-pyrrolidone	872-50-4	15,28	-	-
H121	Acrylamide	79-06-1	10,08	-	-
X380	N-methylacetamide	79-16-3	8,69	-	-
X233	N,N-Dimethylacetamide	127-19-5	10,31	-	-
X527	Ethylenediamine	107-15-3	5,35	-	-

A2006206 T2021897

Floorily uv, Roeseleire
 Floorily vinyl planks & tiles

Group	MReach2	Requested	CAS	IR min	Apparatus Gerstel	
					ng/min.g	µg/g (30', 120°C)
X387		o-Toluidine	95-53-4	16,77	-	-
X381		p-Cresidine	120-71-8	22,32	-	-
X382		4-Aminoazobenzene	60-09-3	38,83	-	-
X383		4,4'-Methylenedi-o-toluidine	838-88-0	43,92	-	-
X384		2,4-Diaminotoluene	95-80-7	24,77	-	-
X385		o-Aminoazotoluene	97-56-3	43,43	-	-
X386		Biphenyl-4-ylamine	92-67-1	32,83	-	-
X343		o-Anisidine	90-04-0	19,60	-	-
X317		2,4-Dinitrotoluene	121-14-2	27,89	-	-
X318		5-Tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	35,02	-	-
X311		4,4'-Diaminodiphenylmethane	101-77-9	39,49	-	-
X344		2,2'-Dichloro-4,4'-methylenedianiline	101-14-4	49,73	-	-
X342		Formaldehyde/aniline oligomeric react prods	25214-70-4	38,90	-	-
X388		4,4'-Oxydianiline and its salts	101-80-4	39,30	-	-
X393		Zoldine MS+ (3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine)	143860-04-2	6,60	-	-
X556		2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	43,71	-	-
X370		Dinoseb	88-85-7	34,12	-	-
X372		Methoxyacetic acid	625-45-6	8,77	-	-
X345		1,2-Dichloroethane	107-06-2	5,13	-	-
A143		Trichloroethylene	79-01-6	6,33	-	-
A144		1,2,3-Trichloropropane	96-18-4	11,93	-	-
X374		1-Bromopropane	106-94-5	4,89	-	-
X376		1,2-Diethoxyethane	629-14-1	8,91	-	-
X394		Propyleneoxide	75-56-9	5,60	-	-
X331		2-Methoxyethanol	109-86-4	4,98	-	-
X332		2-Ethoxyethanol	110-80-5	6,56	-	-
I107		2-Ethoxyethylacetate	111-15-9	11,84	-	-
X558		2-Methoxyethyl acetate	110-49-6	9,70	-	-
X348		Bis(2-methoxyethyl)ether	111-96-6	13,16	-	-
X360		1,2-Bis(2-methoxyethoxy)ethane	112-49-2	21,06	-	-
X362		1,2-Dimethoxyethane	110-71-4	5,40	-	-
X377		Furan	110-00-9	3,52	-	-
X378		Diethyl Sulphate	64-67-5	14,40	-	-
X379		Dimethyl Sulphate	77-78-1	9,97	-	-
X346		Phenolphthalein	77-09-8	44,60	-	-
X366		TGIC	2451-62-9	45,55	-	-
X364		Michlers' ketone	90-94-8	59,69	-	-
X365		Michlers' base	101-61-1	45,89	-	-
X363		β-TGIC	59653-74-6	44,45	-	-
X415		1,3-Propanesultone	1120-71-4	18,05	-	-
X416		Karanal	117933-89-8	33,75	-	-
X530		2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	46,86	-	-
X340		Nitrobenzene	98-95-3	16,98	-	-
D209		Octamethylcyclotetrasiloxane	556-67-2	15,60	-	-
I110		Decamethylcyclopentasiloxane	541-02-6	20,23	<10	<5
H119		Dodecamethylcyclohexasiloxane	540-97-6	24,74	-	-



Reference: T2021897 - Floorify vinyl planks & tiles

Determination of the emission profile by thermal extraction.

Date of ending the test	30-10-2020
Method used	Centexbel
Sample preparation	One or more 1 cm diameter samples are heated in a glass tube at a fixed temperature under an inert gas flow. The gas flow is lead over a tenax filled tube where volatile organic compounds (VOC's) are trapped. The tenax tube with the VOC's is thermally desorbed. Released VOC's are cryo trapped and injected into a GCMS.
Analytical method	Gas chromatography with Agilent MSD detector
Results	
Determination limit	0.1 mg/kg (when no overlapping peaks are present lower determination limits can easily be reached)
Identification	For dimethyl fumarate specific ion with mass 113 is used. For positive identification masses 85 and 59 are used.

As conditions 120°C and 30' were used. These relate to the conditions used eg in VDA 278 to evaluate fogging behaviour of plasticisers. For the more volatile VOC's semi-quantitative results (µg/g) can be obtained while for the heavier VOC's and SVOC's it is a screening method for their presence. If present in higher concentrations only part of the products have already evaporated (results as ng/min.g).

	Amount emitted (µg/g)
DMFu	< 0.10