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Non Food

Taunusstein, 05.07.2024

Test-report no. 6952486

Original Sample ID	Sample Description	Sample Receipt Date
240409662	PVC Film Kralton	24/04/2024

General Information

SGS-Client's ID	: 10229549
SGS-Customer-Order	: 6981518
Ordering date	: 23/04/2024
Testing period	: 26/04/2024 – 02/07/2024
Order No.	: -
Testing scope	: Test according to client's requirements

Assessment

Overall assessment	see test results
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This test report was electronically created and released:

	Date	Name	Function	Department
Created	03.07.2024	i.A. Patrizia Rottensteiner	Customer Service Assistant	Connectivity & Products
Released	05.07.2024	i.A. Florian Volkmar	Project Manager	Connectivity & Products

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Summary of results

Test	Result
Determination of volatile organic compounds (VOCs) acc. to the requirements of the French VOC label (Decree No. 2011-321) and DIN EN ISO 16000-11 (2006-06).	see test results

Note:

Conclusions on pass/fail are based on the test result from the actual sampling of the received sample(s).

Conclusions are based on the relevant requirements; measurement uncertainties are not taken into account. Only results above the relevant detection limit are taken into account for the calculation of sums.

Test was conducted on composite of random parts of the item as per client's request and the test result is the overall result.

The composite sampling method is based on the client's special request and could be a modification from the testing standard.

For 2-composite mix with results exceeding one half of the relevant requirements or 3-composite mix with results exceeding one third of the relevant requirements, the composite sample may have the possibility of one or more components that can lead to a failure result, it is recommended to test on individual basis.

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Photo documentation



List of sample parts

Comp. no	Component-ID	Sample-Description	Original Sample ID
1	-	PVC Film Kralton	240409662

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Analytical results**Determination of volatile organic compounds (VOCs) acc. to the requirements of the French VOC label (Decree No. 2011-321) and DIN EN ISO 16000-11 (2006-06)****Order content:**

The emission of VOC (volatile organic compounds) and aldehydes including CMR substances for the classification of the emission class according to the French decree no. 2011-321 of 23 March 2022 and the decree of 19 April 2011 shall be determined.

Test preparation:

Sample preparation is carried out according to DIN EN ISO 16000-11 (2006-06).

The sample (PVC film) with a product area of 0,4m² (670mm x 600mm) was placed in the test chamber.

Test conditions:

The emission test is carried out according to DIN EN ISO 16000-9 (2008-04) with sampling on the 3rd and 28th day.

Temperature:	23 ± 1°C
Rel. air humidity:	50 ± 5%
Exposition period:	28 days
Air change rate:	0.5 ± 0.05 [h]
Area of product:	0.4 [m ²]
Test chamber size:	1.0 [m ³]
Loading factor:	0.4 [m ² /m ³]
Area specific air flow rate q:	1,25 [m ³ /m ² *h]

The measurement of VOCs is carried out according to DIN ISO 16000-6 (2022-03) using Tenax TA and GC-MS/FID analysis. The quantification of the individual compounds is carried out substance-specifically. The total TVOC is calculated as toluene equivalent (TE) in the range C6 (hexane) to C16 (hexadecane). The limit of quantitation is between 0,5 - 10µg/m³ depending on the chemical structure of the compound. The expanded measurement uncertainties of the individual compounds are in the range of 25% - 40%. The emission of form- and acetaldehyde was carried out according to DIN ISO 16000-3 (2023-12), sampling on DNPH and measuring by HPLC. The LOQ is 0,002 mg/m³. The expanded measurement uncertainty for formaldehyde is 22% and for acetaldehyde 25%. To check the limit of quantification of benzene and trichloroethene, samples are also taken from an activated carbon tube, extracted with carbon disulfide in accordance with VDI 2100 Blatt 2 and measured by GC/MS. The quantitation limit is 1µg/m³ per component. The expanded measurement uncertainty is 25 % per component.

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Results:

According to the French Decree No. 2011-321 of March 23, 2011 and the Decree of April 19, 2011 on the labeling of building products, wall and floor coverings, and paints and varnishes with respect to their emissions of volatile pollutants, the two scenarios "wall" and "roof or floor" are given for samples. The results are given without taking the measurement uncertainty. The results are based on different loading factors defined for each scenario.

Sample: 240409662 (subsample 1) - Results scenario "Roof and Floor":

The emission test was carried out according to the "Roof and Floor" scenario with a loading factor of 0,4m²/m³.

Substance	Concentration after 28 days [µg/m ³]	Class of Emission
Formaldehyde	< 2	A+
Acetaldehyde	< 2	A+
Toluene	< 1	A+
Tetrachloroethene	< 1	A+
Xylenes	< 1	A+
1.2.4-Trimethylbenzene	< 1	A+
1.4-Dichlorobenzene	< 1	A+
Ethylbenzene	< 1	A+
2-Butoxyethanol	< 1	A+
Styrene	< 1	A+
TVOC (TE)	< 20	A+
CMR substances (carcinogenic, mutagenic, toxic for reproduction)		
Benzene	< 1	A+
Trichloroethene	< 1	A+
Dibutyl phthalate	< 1	A+
Diethylhexyl phthalate	< 1	A+

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Sample: 240409662 (subsample 1) - Results scenario "Wall":

The loading factor LWall 1,0m²/m³ was used to calculate the concentration for the scenario "Wall".

Substance	Concentration after 28 days [µg/m ³]	Class of Emission
Formaldehyde	< 2	A+
Acetaldehyde	< 2	A+
Toluene	< 1	A+
Tetrachloroethene	< 1	A+
Xylenes	< 1	A+
1.2.4-Trimethylbenzene	< 1	A+
1.4-Dichlorobenzene	< 1	A+
Ethylbenzene	< 1	A+
2-Butoxyethanol	< 1	A+
Styrene	< 1	A+
TVOC (TE)	< 20	A+
CMR substances (carcinogenic, mutagenic, toxic for reproduction)		
Benzene	< 1	A+
Trichloroethene	< 1	A+
Dibutyl phthalate	< 1	A+
Diethylhexyl phthalate	< 1	A+

Note:

The Limit values according to the label classification. The Emission classes A+ to C are determined on the basis of emissions in the test chamber after 28 days.

Substance	Classification [µg/m ³]			
	C	B	A	A+
Formaldehyde	> 120	< 120	< 60	< 10
Acetaldehyde	> 400	< 400	< 300	< 200
Toluene	> 600	< 600	< 450	< 300
Tetrachloroethene	> 500	< 500	< 350	< 250
Xylenes	> 400	< 400	< 300	< 200
1.2.4-Trimethylbenzene	> 2000	< 2000	< 1500	< 1000
1.4-Dichlorobenzene	> 120	< 120	< 90	< 60
Ethylbenzene	> 1500	< 1500	< 1000	< 750
2-Butoxyethanol	> 2000	< 2000	< 1500	< 1000
Styrene	> 500	< 500	< 350	< 250
TVOC (TE)	> 2000	< 2000	< 1500	< 1000

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CMR substances (carcinogenic, mutagenic, toxic for reproduction)

Benzene	-	-	-	< 1
Trichloroethene	-	-	-	< 1
Dibutyl phthalate	-	-	-	< 1
Diethylhexyl phthalate	-	-	-	< 1

*** End of test report ***

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