



No. 4718643-05

Date: 14/NOV/2018

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Steiner GmbH & Co. KG Mr. R.-H. Spies (PhD) Jägersgrund 1 57339 Erndtebrück GERMANY



The following samples were submitted and identified by/on behalf of the client as

SGS Job file Order date Order number Sampling condition of the samples Sample receiving Date Testing period Analytical scope		4718643 16/OCT/2018 EB-6013962-S-0255 by Client or by a third party acting at the Client's of appropriate for testing 17/OCT/2018 17/OCT/2018 – 14/NOV/2018 According to client's requirements	direction				
Sample No		Sample designation	Sample material				
181026343		Sample 5 Al-coated Polyphenylenesulphide (PPS) film	Metallized plastic film				
Test requested	:	In accordance with the RoHS Directive 2011/65/EU and subsequent amendments					
Test Method(s)		 (1) Determination of Cadmium by ICP-OES, acc. IEC 62321-5:2013 (2) Determination of Lead by ICP-OES, acc. IEC 62321-5:2013 (3) Determination of Mercury by CV-AAS, acc. IEC 62321-4:2013 					
		(4) Determination of Chromium by ICP-OES, acc.(5) Determination of Chromium (VI) acc. IEC 6232	Chromium by ICP-OES, acc. IEC 62321-5:2013 Chromium (VI) acc. IEC 62321:				
		 A) (metal samples) Determination after extraction with hot water and derivatisation with 1,5-diphenyl-carbazide based on IEC 62321-7-1:2015 (metal samples), ion chromatography B) (non-metallic samples) Determination after alkaline extraction and derivatisation with 1,5-diphenyl-carbazide based on IEC 62321, Ed1, 2008, C5 (polymer and electronic samples), ion chromatography 					
		<u>Remark:</u> Due to its highly reactive nature the concentration of CrVI in a corrosion-protection changes drastically with time and storage conditions. The results obtained by IEC 62321-7-1:2015 can therefore only give an indication of the presence/absence of Cr(VI) within the limitations of the method at the time of testing.					
		(6) Determination of PBB/PBDE by GC/MS, acc. I <u>Remark</u> : Please note that acc. to IEC the testing of metals for					
Test Result(s)	:	Please refer to next page(s)					

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SGS INSTITUT FRESENIUS GmbH | Im Maisel 14 D-65232 Taunusstein t+49 6128 744 - 0 f+49 6128 744 - 130 www.institut-fresenius.sgsgroup.de

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Conclusion

: Based on the performed tests on submitted sample(s), the test results of Lead, Mercury, Cadmium, hexavalent Chromium, Polybrominated Biphenyls(PBB) and Polybrominated Diphenyl Ethers (PBDE) **comply** with the limits as set by RoHS Directive 2011/65/EU, Annex 2 and subsequent amendments

SGS INSTITUT FRESENIUS GmbH

11ll i.A

Dr. Tobias Müller / cg Projektleiter / Project Manager Consumer and Retail Tel. +49 (0)6128 / 744 - 399

hh Lahn i.A

Annkatrin Kuhl Projektleiterin / Project Manager Consumer and Retail Tel. +49 (0)6128 / 744 - 280





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Test results by chemical method (Unit: mg/kg)

Sample No.		181026343		
Test Item(s):	Method (refer to)		<u>RL</u>	RoHS Limit
Cadmium(Cd)	(1)	n.d.	1	100
Lead (Pb)	(2)	n.d.	10	1000
Mercury (Hg)	(3)	n.d.	0,5	1000
Chromium, hexavalent (Cr(VI))	(5 B)	n.d.	1	1000
Sum of PBDEs	(6)	-	-	
Monobromodiphenyl ether		n.d.	50	1000 (Sum of polybrominated diphenyl ether)
Dibromodiphenyl ether		n.d.	50	
Tribromodiphenyl ether		n.d.	50	
Tetrabromodiphenyl ether		n.d.	50	
Pentabromodiphenyl ether		n.d.	50	
Hexabromodiphenyl ether		n.d.	50	
Heptabromodiphenyl ether		n.d.	50	
Octabromodiphenyl ether		n.d.	50	
Nonabromodiphenyl ether		n.d.	50	
Decabromodiphenyl ether		n.d.	50	
Sum of PBBs		-	-	
Monobromobiphenyl		n.d.	50	
Dibromobiphenyl		n.d.	50	1000 (Sum of polybrominated biphenyls)
Tribromobiphenyl		n.d.	50	
Tetrabromobiphenyl		n.d.	50	
Hexabromobiphenyl		n.d.	50	
Pentabromobiphenyl		n.d.	50	
Heptabromobiphenyl		n.d.	50	
Octabromobiphenyl		n.d.	50	
Nonabromobiphenyl		n.d.	50	1
Decabromobiphenyl		n.d.	50	1

Note : mg/kg = ppm

n.d.= not Detected

RL = Report Limit

n.a.= not analyzed

**= elevated reporting limit due to matrix interferences





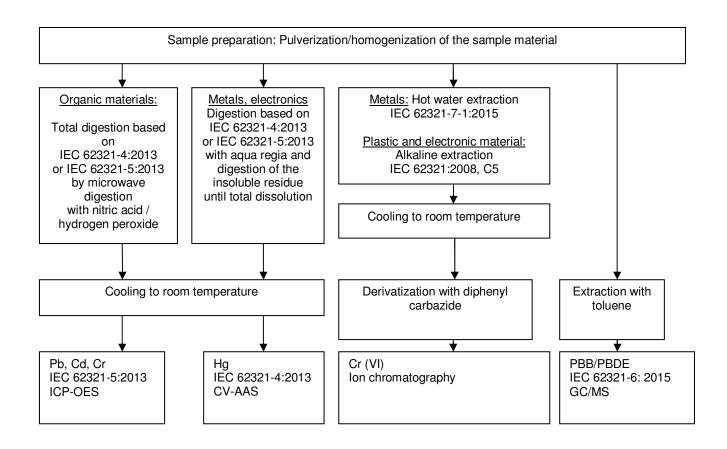
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Flow Chart for the working flow of the performed analysis







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Sample Photo(s)



End of test report

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