Steiner GmbH & Co. KG
Mr. R.-H. Spies (PhD)
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GERMANY

DAkkS Deutsche Akkreditierungsstelle D-PL-14115-02-00

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

SGS Job file	:	4718643
Order date	:	16/OCT/2018
Order number	:	EB-6013962-S-0255
Sampling	:	by Client or by a third party acting at the Client's direction
condition of the samples	:	appropriate for testing
Sample receiving Date	:	17/OCT/2018
Testing period	:	17/OCT/2018 – 14/NOV/2018
Analytical scope	:	According to client's requirements

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. IEC 62321-5:2013
(5) Determination of 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

Remark: 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. IEC 62321-6:2015

Remark: Please note that acc. to IEC the testing of metals for PBB/PBDE is gratuitous

Test Result(s) : Please refer to next page(s)

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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

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

Sample No.		181026343		
Test Item(s):	Method (refer to)		RL	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)	**-**	-	1000 (Sum of polybrominated diphenyl ether)
Monobromodiphenyl ether		n.d.	50	
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		**-**	-	1000 (Sum of polybrominated biphenyls)
Monobromobiphenyl		n.d.	50	
Dibromobiphenyl		n.d.	50	
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	
Decabromobiphenyl		n.d.	50	

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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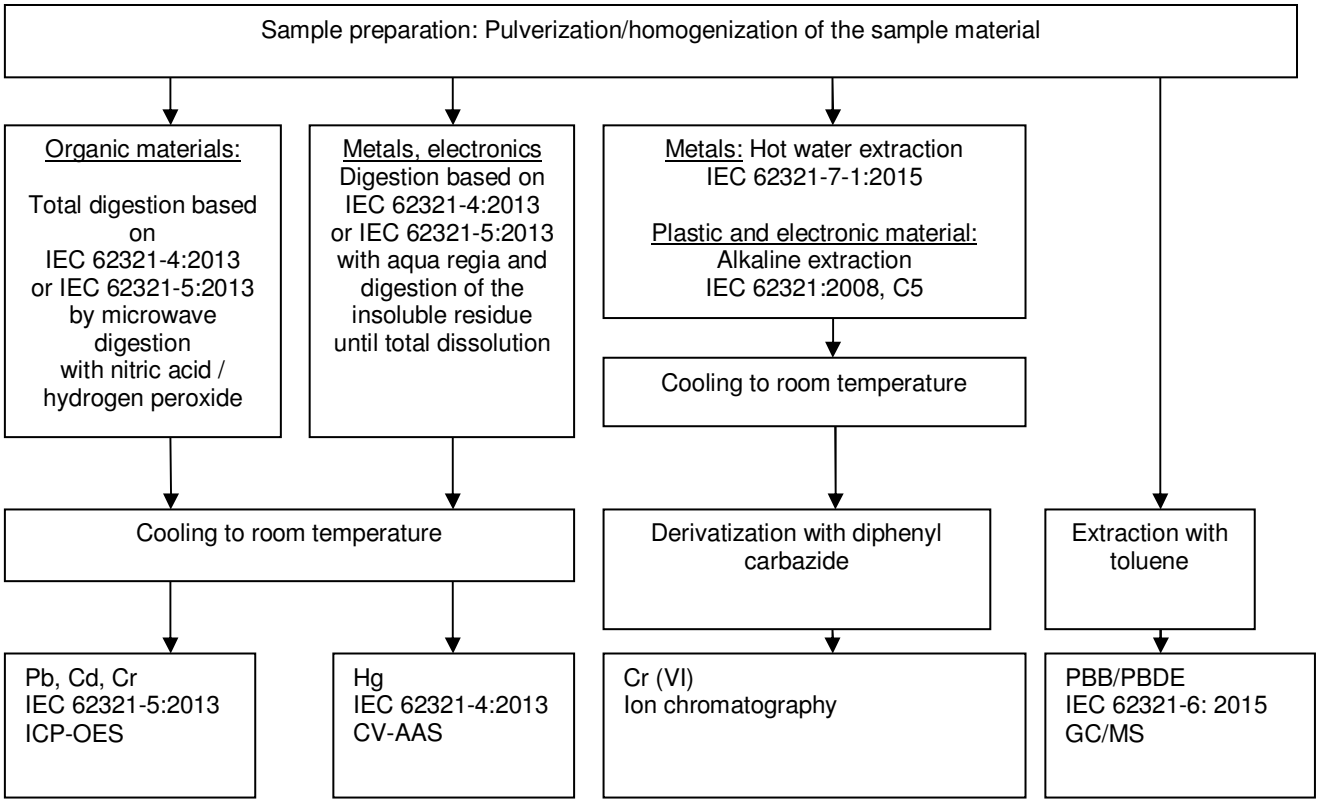
Flow Chart for the working flow of the performed analysis



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Sample Photo(s)

End of test report