

Test Report

No. 4040911-02

Date : 09/FEB/2017

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Jauch Quartz GmbH
 Mr. Stefan Durczok
 In der Lache 24
 78056 VS-Schwenningen
 GERMANY



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

SGS Job file : 4040911
 Order date : 23/JAN/2017
 Order number : -
 Sample receiving Date : 30/JAN/2017
 Testing period : 30/JAN/2017 – 09/FEB/2017

Sample No	Sample designation
170100339	JRO32

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 Cr(VI) 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)

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

Signed for and on behalf of
SGS INSTITUT FRESENIUS GmbH


 i.V.
 Wera Leonhard / hi
 Projektleiterin / Project Manager


 i. A.
 Rika Alessa Riebe
 Projektleiterin / Project Manager

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

Sample No.		170100339		
Test Item(s):	Method (refer to)		RL	RoHS Limit
Cadmium(Cd)	(1)	n.d.	10**	100
Lead (Pb)	(2)	n.d.	50**	1000
Mercury (Hg)	(3)	n.d.	0,5	1000
Chromium, hexavalent (Cr(VI))	(5 A)	negative ¹	0,1 µg/cm ²	1000
Sum of PBDEs	(6)	-	-	1000 (Sum of polybrominated diphenyl ether)
Monobromodiphenyl ether		n.a.	50	
Dibromodiphenyl ether		n.a.	50	
Tribromodiphenyl ether		n.a.	50	
Tetrabromodiphenyl ether		n.a.	50	
Pentabromodiphenyl ether		n.a.	50	
Hexabromodiphenyl ether		n.a.	50	
Heptabromodiphenyl ether		n.a.	50	
Octabromodiphenyl ether		n.a.	50	
Nonabromodiphenyl ether		n.a.	50	
Decabromodiphenyl ether		n.a.	50	
Sum of PBBs		-	-	1000 (Sum of polybrominated biphenyls)
Monobromobiphenyl		n.a.	50	
Dibromobiphenyl		n.a.	50	
Tribromobiphenyl		n.a.	50	
Tetrabromobiphenyl		n.a.	50	
Hexabromobiphenyl		n.a.	50	
Pentabromobiphenyl		n.a.	50	
Heptabromobiphenyl		n.a.	50	
Octabromobiphenyl		n.a.	50	
Nonabromobiphenyl		n.a.	50	
Decabromobiphenyl		n.a.	50	

Note : mg/kg = ppm

n.d.= not Detected

RL = Report Limit

n.a.= not analyzed

** = elevated reporting limit due to matrix interferences

¹ The sample is negative for Cr(VI) if Cr(VI) is not detectable (concentration less than 0.10 µg/cm²). The coating is considered a non-Cr(VI) based coating
The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm². The sample coating is considered to contain Cr(VI)
Results between 0.10 µg/cm² and 0.13 µg/cm² are considered to be inconclusive - unavoidable coating variations may influence the determination

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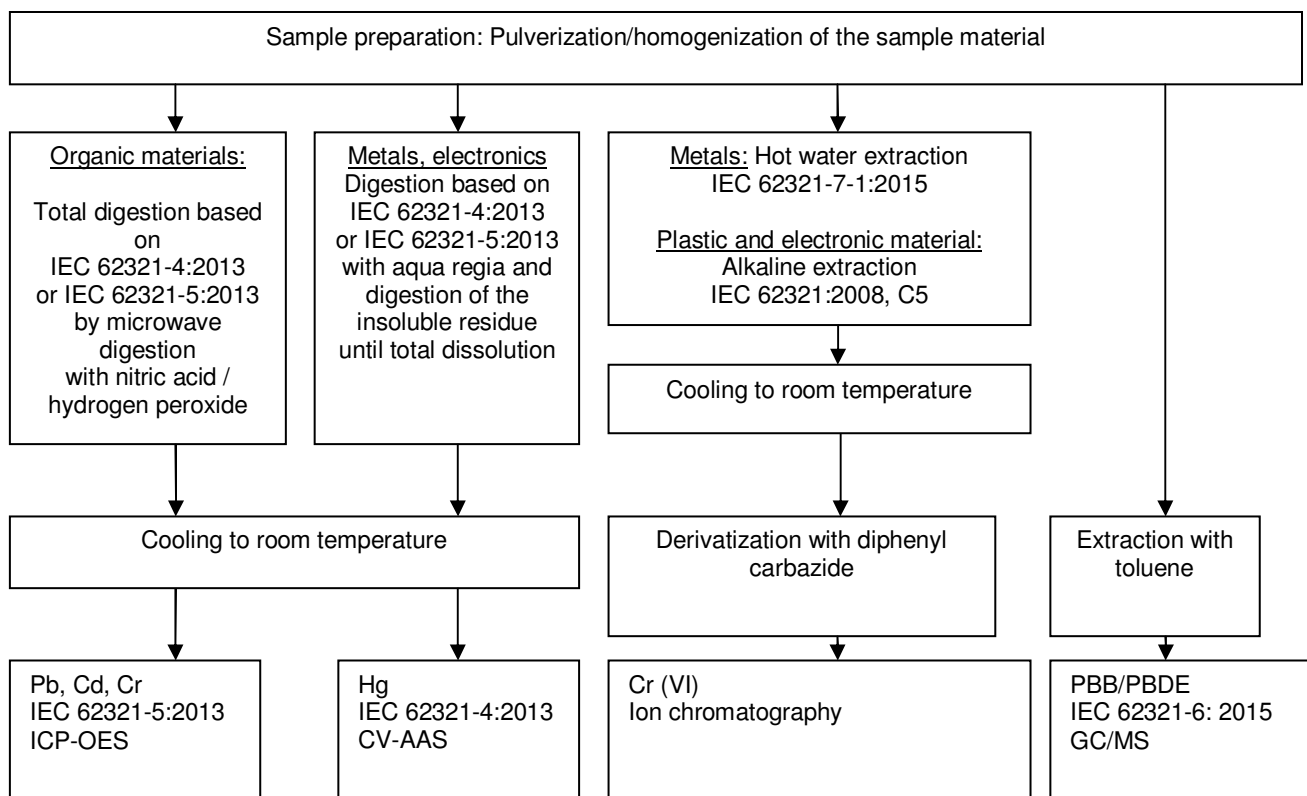
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Flow Chart for the working flow of the performed analysis



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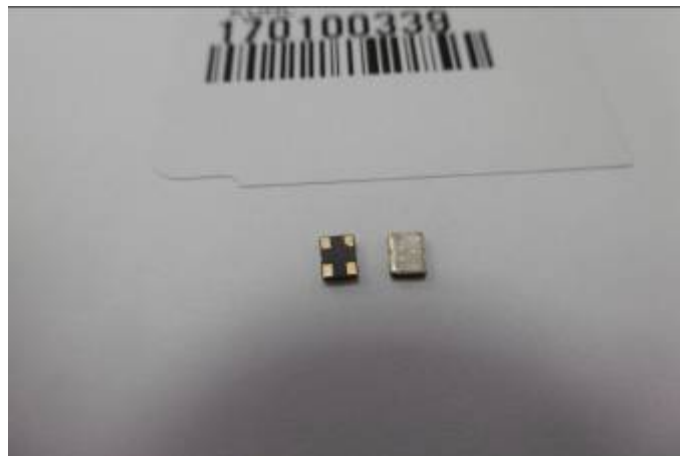
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Sample Photo(s)



End of Report