

Test Report

No. 4754657-10

Date: 17/JAN/2019

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



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

SGS Job file : 4754657
Order date : 15/NOV/2018
Order number : -
Sampling : by Client or by a third party acting at the Client's direction
condition of the samples : appropriate for testing
Sample receiving Date : 19/NOV/2018
Testing period : 19/NOV/2018 – 17/JAN/2019
Analytical scope : According to client's requirements

Sample No	Sample designation	Sample material
181154558	JXG53	electronic component

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 **comply** with the limits as set by RoHS Directive 2011/65/EU, Annex 2 and subsequent amendments

Sample contains lead (Pb).

According to customer's declaration, the sample contains lead-containing glass.

The use of lead is explicitly allowed acc. Directive 2011/65/EU, Annex 3 no. 7cI and an elevated content non objectionable for application as follows:

	Dir. 2018/736 (EU)	
7c. I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	<p>Applies to categories 1-7 and 10 (except applications covered under point 34) and expires on 21 July 2021.</p> <p>For categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments expires on 21 July 2021.</p> <p>For category 8 in vitro diagnostic medical devices expires on 21 July 2023.</p> <p>For category 9 industrial monitoring and control instruments, and for category 11 expires on 21 July 2024.'</p>

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

Sample No.		181154558		
Test Item(s):	Method (refer to)		RL	RoHS Limit
Cadmium(Cd)	(1)	n.d.	1	100
Lead (Pb)	(2)	69800	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.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		-	-	
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

Test Report

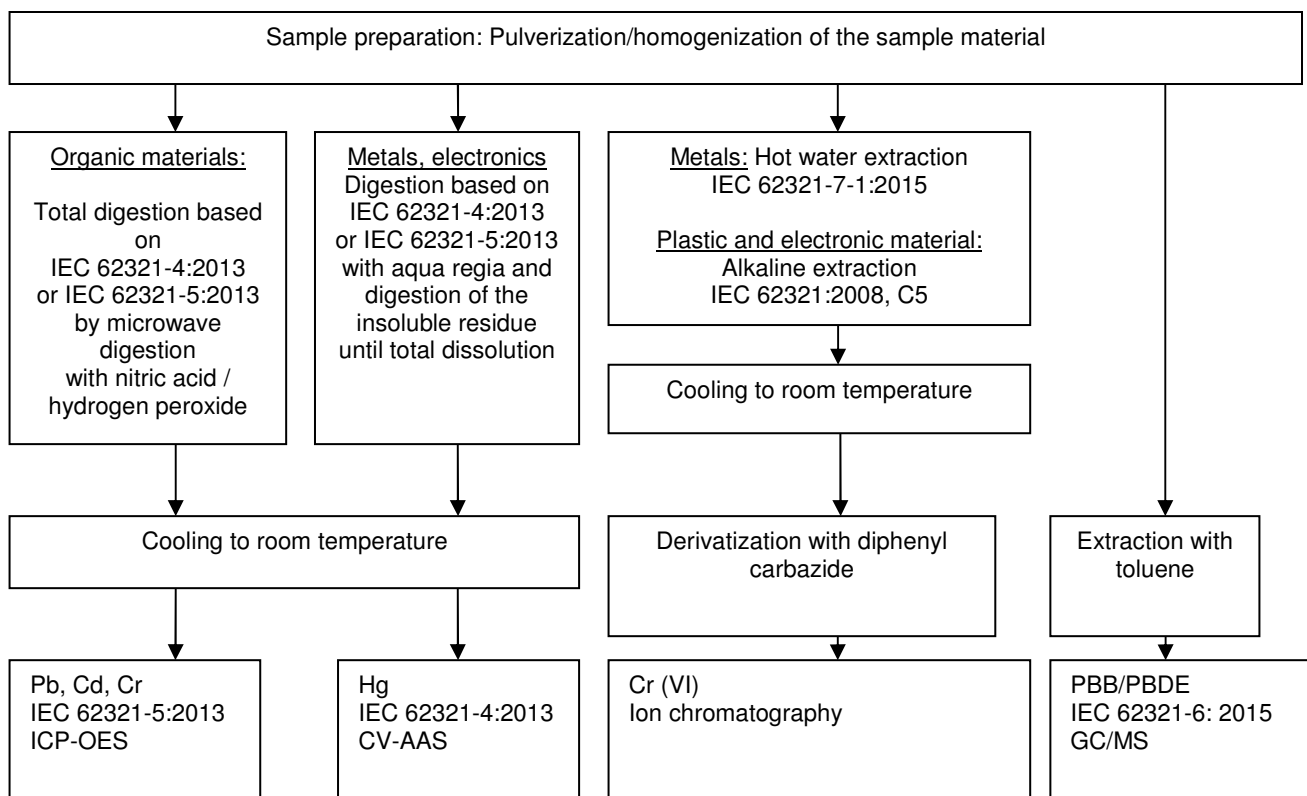
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Flow Chart for the working flow of the performed analysis



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Sample Photo(s)



End of test report

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