

# **Test Report**

No: 10518879(16) A4

Date: 21-Jul-2021

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cab Produkttechnik GmbH & Co. KG Wilhelm-Schickard-Str.14, 76131 Karlsruhe, Germany

The following sample(s) was/were submitted and identified by/on behalf of the client as:

Sample Name	:	R91
Sample Receiving Date Testing Period	:	07-Jul-2021 07-Jul-2021 to 21-Jul-2021
Test Requested	:	Selected test(s) as requested by client.
Test Method	:	Please refer to next page(s)
Test Result(s)	:	Please refer to next page(s).
Conclusion	:	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) <b>comply</b> with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of SGS Testing & Control Services Singapore Pte Ltd

Y.C. Tham Technical Manager, Multi-Lab



Test Location: 30 Boon Lay Way, #02-02, Singapore 609957

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### Test Result(s):

Sample Description : Black Film

Test Item(s):	Unit	Method	Results	MDL	RoHS Limit
Cadmium(Cd)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	1000
Mercury (Hg)	mg/kg	With reference to IEC62321-4 :2013+A1:2017. Analysis was performed by ICP/OES	n.d.	2	1000
Hexavalent Chromium (Cr(VI))	mg/kg	With reference to IEC62321-7-2 :2017. Analysis was performed by UV/Vis Spectrometry	n.d.	8	1000
Sum of PBBs	mg/kg		n.d.	-	1000
Monobromobiphenyl	mg/kg		n.d.	5	-
Dibromobiphenyl	mg/kg		n.d.	5	-
Tribromobiphenyl	mg/kg		n.d.	5	-
Tetrabromobiphenyl	mg/kg		n.d.	5	-
Hexabromobiphenyl	mg/kg		n.d.	5	-
Pentabromobiphenyl	mg/kg		n.d.	5	-
Heptabromobiphenyl	mg/kg		n.d.	5	-
Octabromobiphenyl	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	n.d.	5	-
Nonabromobiphenyl	mg/kg		n.d.	5	-
Decabromobiphenyl	mg/kg		n.d.	5	-
Sum of PBDEs	mg/kg		n.d.	-	1000
Monobromodiphenyl ether	mg/kg		n.d.	5	-
Dibromodiphenyl ether	mg/kg		n.d.	5	-
Tribromodiphenyl ether	mg/kg		n.d.	5	-
Tetrabromodiphenyl ether	mg/kg		n.d.	5	-
Pentabromodiphenyl ether	mg/kg		n.d.	5	-
Hexabromodiphenyl ether	mg/kg		n.d.	5	-
Heptabromodiphenyl ether	mg/kg		n.d.	5	-
Octabromodiphenyl ether	mg/kg		n.d.	5	-
Nonabromodiphenyl ether	mg/kg		n.d.	5	-
Decabromodiphenyl ether	mg/kg		n.d.	5	-

Test Location: 30 Boon Lay Way, #02-02, Singapore 609957

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Co. Reg. No: 199404065N GST Reg. No: MR-8500112-9



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No: 10518879(16) A4

Date: 21-Jul-2021

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Test Result(s):

Sample Description : Black Film

Test Item(s):	Unit	Method	Results	MDL	Limit
BBP (Benzyl butyl phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000
DBP (Di-butyl phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000
DEHP (Di-(2-ethylhexyl) phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000
DIBP (Di-isobutyl Phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000

Note: (1) mg/kg = ppm ; 0.1wt% = 1000ppm

(2) n.d.= Not Detected

(3) MDL = Method Detection Limit

(4) "-" = Not regulated

(5) \* : Exceeds limit

(6) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

(7) IEC 62321 series is equivalent to EN 62321 series.

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP\_ORG\_ID,FSP\_LANG\_ID:1258637,25

Remarks: Sample received was totally dissolved by preconditioning method. Lab Analyst(s): AQ, Joela and SJ

Test Location: 30 Boon Lay Way, #02-02, Singapore 609957

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Date: 21-Jul-2021

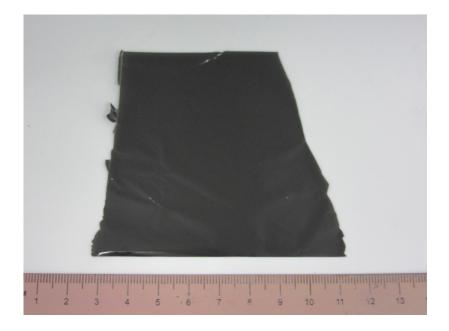
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Sample photo: Sample Description

Black Film

SGS authenticate the photo on original report only

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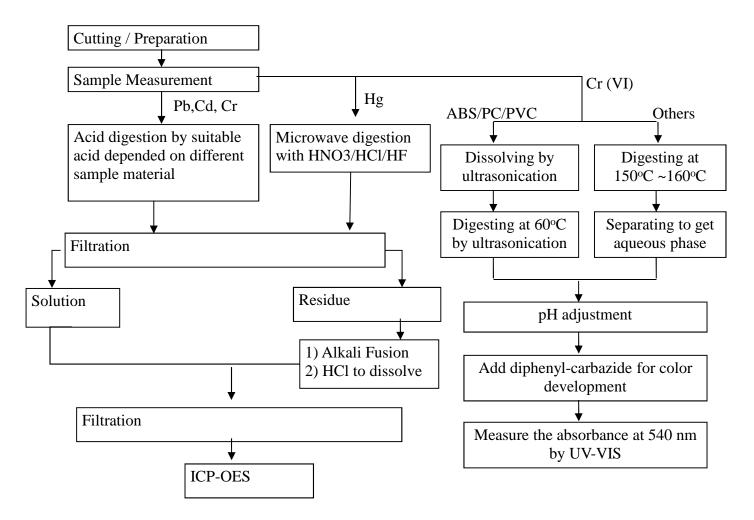
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Date: 21-Jul-2021

## Process Flow of IEC 62321 (Pb, Cd, Hg, Cr & Cr(VI))



Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

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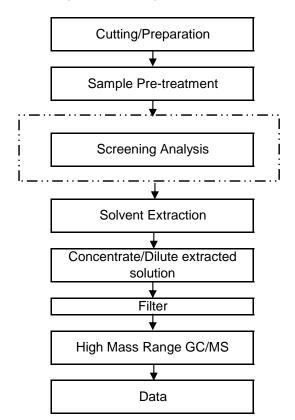
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Date: 21-Jul-2021

### Process Flow of PBBs and PBDEs by GC/MS (IEC 62321)

First Testing Process  $\rightarrow$  Optional screen process ..... Confirmation process ...  $\rightarrow$ 



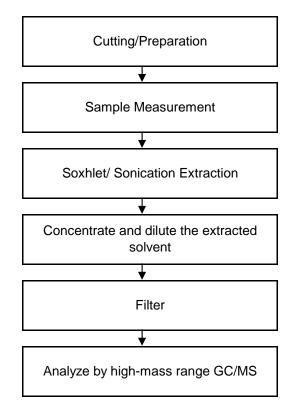
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## Process Flow of Phthalate by GC/MS (IEC 62321)



\*\*\*End of Report\*\*\*

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