Test Report
No: 10557952(7) A3
Date: 19-Apr-2023
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cab Produkttechnik GmbH \& Co. KG
Wilhelm-Schickard-Str. 14
76131 Karlsruhe
Germany
Sample Name : M91

The above sample(s) and information were provided by the client.

| Sample Receiving Date <br> Testing Period | $:$ | 31-Mar-2023 <br> 31-Mar-2023 to 19-Apr-2023 |
| :--- | :--- | :--- |
| 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) comply 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 Report
Test Result(s):
Sample Description : Black sheet

| 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 | $\mathrm{mg} / \mathrm{kg}$ | With reference to IEC62321-6 :2015. Analysis was performed by GC/MS | n.d. | - | 1000 |
| Monobromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Dibromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Tribromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Tetrabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Hexabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Pentabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Heptabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Octabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Nonabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Decabromobiphenyl | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Sum of PBDEs | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | - | 1000 |
| Monobromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Dibromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Tribromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Tetrabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Pentabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Hexabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Heptabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Octabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Nonabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |
| Decabromodiphenyl ether | $\mathrm{mg} / \mathrm{kg}$ |  | n.d. | 5 | - |

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## Test Result(s):

Sample Description : Black sheet

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

Note: $\quad$ (1) $\mathrm{mg} / \mathrm{kg}=\mathrm{ppm} ; 0.1 \mathrm{wt} \%=1000 \mathrm{ppm}$
(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): Auni, Farah and MC
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ( $w=0$ ) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

[^0]Test Report

## Sample photo:

Sample Description : Black sheet

SGS authenticate the photo on original report only


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Test Report

## Process Flow of IEC 62321 ( $\mathrm{Pb}, \mathrm{Cd}, \mathrm{Hg}, \mathrm{Cr} \& \mathrm{Cr}(\mathrm{VI})$ )



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

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

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


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



Concentrate and dilute the extracted solvent

***End of Report***


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