

TEST REPORT:

No. CPSA/221201984-CB08124
Job Ref. C&P/2022-11-22-007

REPORTED DATE: 08-December-2022

SILTERRA MALAYSIA SDN BHD

LOT 8, PHASE 2, KULIM HI-TECH PARK,
09000 KULIM, KEDAH, MALAYSIA.

The following sample(s) was/were submitted and identified by applicant as:

SAMPLE DESCRIPTION : ALUMINIUM PROCESS WAFER
SAMPLE RECEIVED : 22-November-2022
TESTING PERIOD : 22-November-2022 to 08-December-2022

TEST REQUESTED : Selected test(s) as requested by customer
TEST METHOD : -PLEASE REFER TO NEXT PAGE(S)-
TEST RESULTS : -PLEASE REFER TO NEXT PAGE(S)-

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD


TAY SIAM PINE
TECHNICAL MANAGER
IKM No. M/3452/6047/11/12



Test Report Form No.: SGS/TR/CP/013, Ver: 6.0, Effective Date: 07/07/2021

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TEST RESULTS:

Test Part Description

Sample Description: -PLEASE REFER TO PAGE 1-

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Parameter(s):	Unit	Test Method	Result	MDL	Limit
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.	N.D.	2	Max 100
Lead (Pb)	mg/kg	With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.	N.D.	2	Max 1000
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013+A1:2017, determination of Mercury by ICP-OES.	N.D.	2	Max 1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321-7-2:2017, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.	N.D.	8	Max 1000
Sum of PBBs	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	Max 1000
Monobromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Dibromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Tribromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Pentabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Hexabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Heptabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Octabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Nonabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Decabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-

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RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Parameter(s):	Unit	Test Method	Result	MDL	Limit
Sum of PBDEs	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	Max 1000
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.	N.D.	5	-

- Note :
- (a) mg/kg = ppm ; ug/kg = ppb (0.01 mg/kg = 10 ug/kg); 0.1wt% = 1000ppm
 - (b) N.D. = Not Detected
 - (c) MDL = Method Detection Limit
 - (d) - = Not regulated
 - (e) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
 - (f) a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI.
 - b. The sample is negative for CrVI if CrVI is N.D. (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating.
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.
- For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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Optional: RoHS Directive 2011/65/EU, priority substances

Test Parameter(s):	Unit	Test Method	Result	MDL
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD) (CAS No.: 25637-99-4, 3194-55-6(134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	In-house method, SGS-TM-RSTS-O-012, with reference to IEC 62321-6:2015. Analysis was performed by GCMS	N.D.	5

Note : (a) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD), Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.
(b) N.D. = Not Detected

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RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Parameter(s):	Unit	Test Method	Result	MDL	Limit
Dibutyl phthalate (DBP) (CAS No. 84-74-2)	mg/kg	With reference to IEC 62321-8:2017, determination of phthalates by GC-MS.	N.D.	50	Max 1000
Benzyl butyl phthalate (BBP) (CAS No. 85-68-7)	mg/kg	With reference to IEC 62321-8:2017, determination of phthalates by GC-MS.	N.D.	50	Max 1000
Di(2-ethylhexyl) phthalate (DEHP) (CAS No. 117-81-7)	mg/kg	With reference to IEC 62321-8:2017, determination of phthalates by GC-MS.	N.D.	50	Max 1000
Diisobutyl phthalate (DIBP) (CAS No. 84-69-5)	mg/kg	With reference to IEC 62321-8:2017, determination of phthalates by GC-MS.	N.D.	50	Max 1000

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 - (b) N.D. = Not Detected
 - (c) MDL = Method Detection Limit
 - (d) - = Not regulated
 - (e) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
 - (f) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

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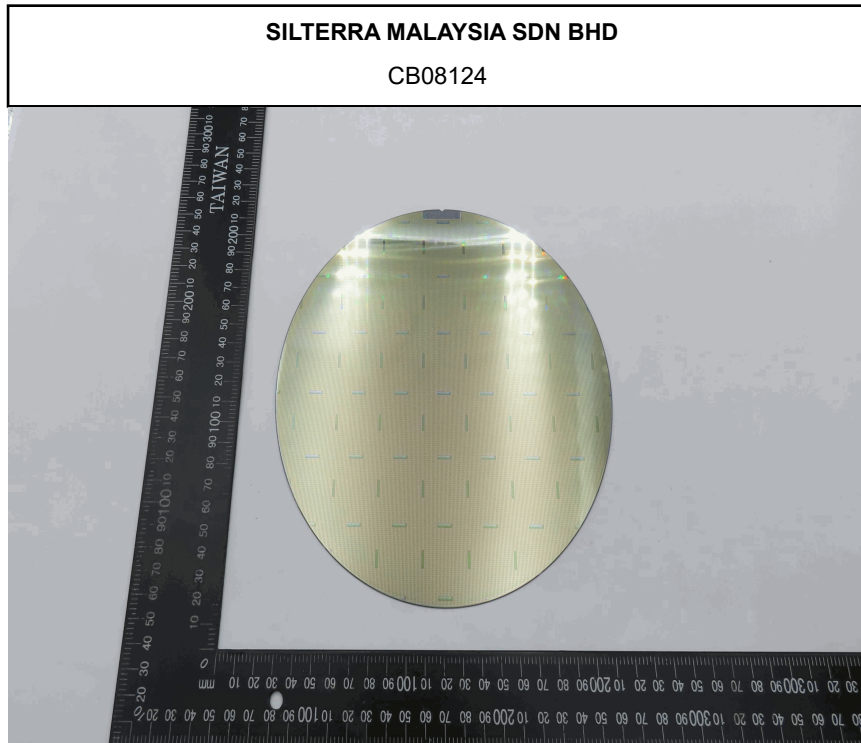
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SGS authenticate the photo on original report only

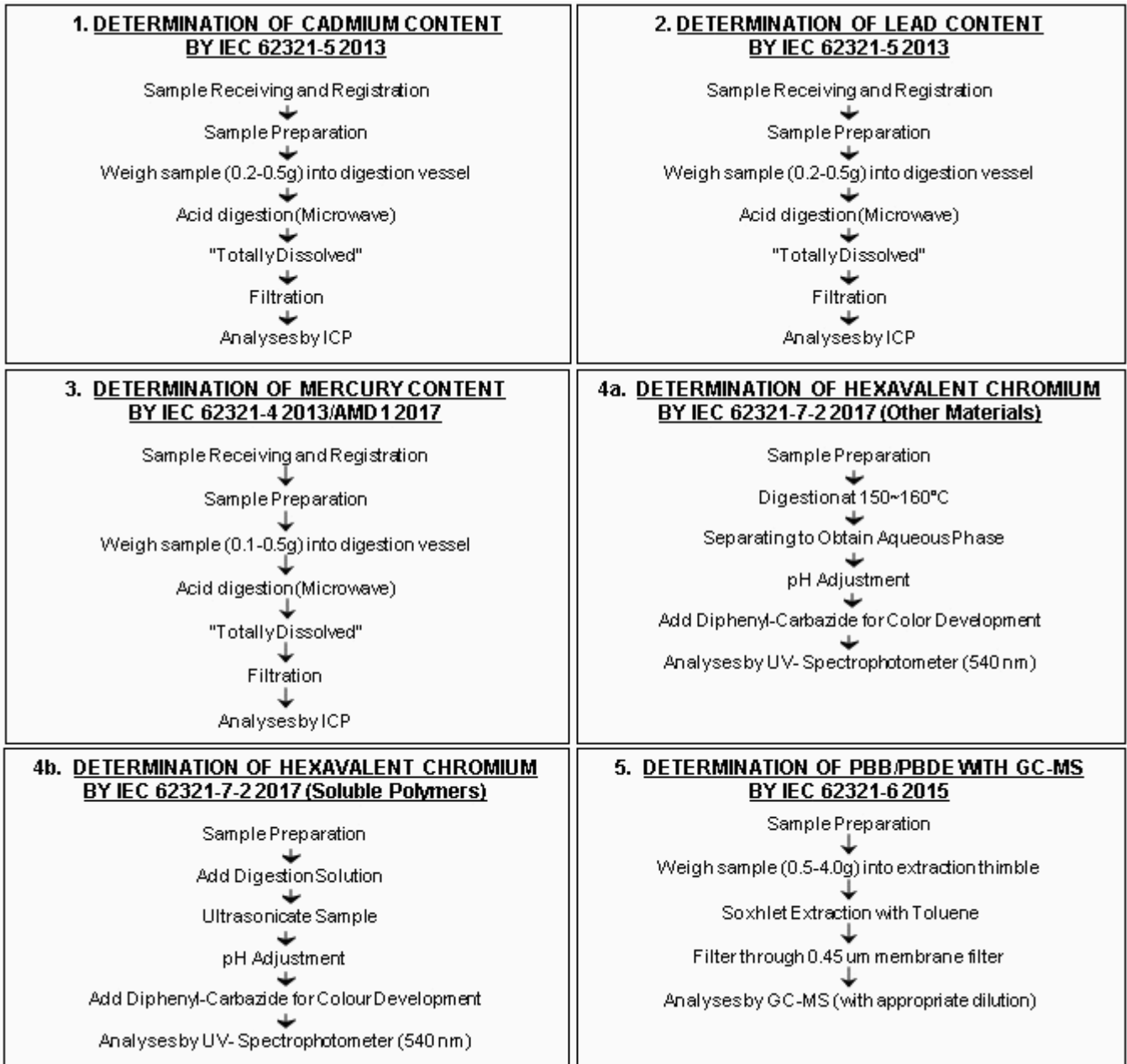
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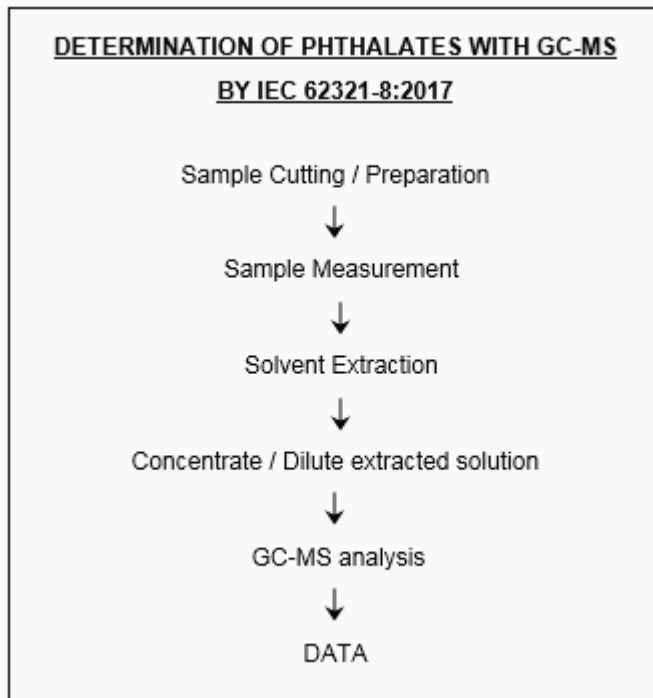
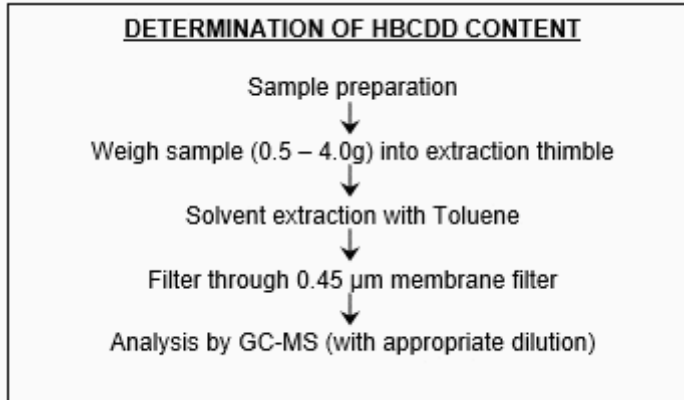
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*** End of test report ***

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