

**TEST REPORT:**

No. CPSA/240128230-CB42488

REPORTED DATE: 24 Jan 2024**POSCO MALAYSIA SDN BHD**

LOT 60 & 61, JALAN SUNGAI PINANG 5/1,
SEKSYEN 5, FASA 2A,
TAMAN PERINDUSTRIAN PULAU INDAH,
42920 PORT KLANG, SELANGOR

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

SAMPLE DESCRIPTION : SECC-PL
JOB REF. : C&P/2024-01-10-003
SAMPLE RECEIVED : 10 Jan 2024
TESTING PERIOD : 10 Jan 2024 to 16 Jan 2024

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/001, Ver: 2.0, Effective Date: 15/03/2021

Page 1 of 7

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com

Member of the SGS Group (SGS SA)

TEST REPORT:

No. CPSA/240128230-CB42488

REPORTED DATE: 24 Jan 2024

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)	µg/cm²	With reference to IEC 62321-7-1:2015, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.	N.D.	0.10	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	-

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/001, Ver: 2.0, Effective Date: 15/03/2021

Page 2 of 7

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn.Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com

TEST REPORT:

No. CPSA/240128230-CB42488

REPORTED DATE: 24 Jan 2024

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
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	-

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/001, Ver: 2.0, Effective Date: 15/03/2021

Page 3 of 7

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com

TEST REPORT:

No. CPSA/240128230-CB42488

REPORTED DATE: 24 Jan 2024

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
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

Note : (a) mg/kg = ppm ; (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.

(g) 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.

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/001, Ver: 2.0, Effective Date: 15/03/2021

Page 4 of 7

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com

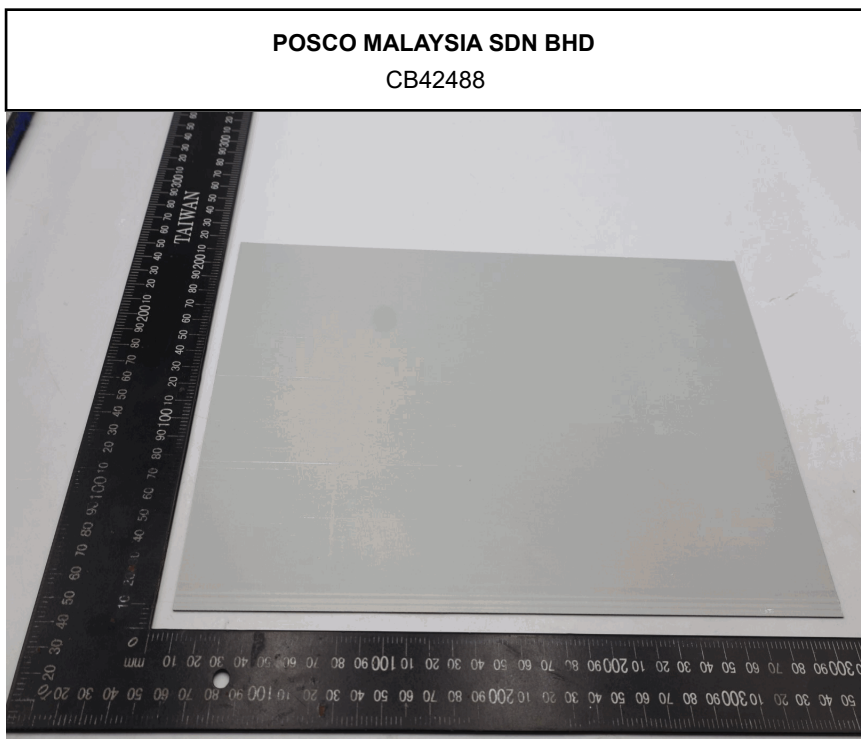
TEST REPORT:

No. CPSA/240128230-CB42488

REPORTED DATE: 24 Jan 2024

Test Part Description :

Sample Description: -PLEASE REFER TO PAGE 1-



SGS authenticate the photo on original report only

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/001, Ver: 2.0, Effective Date: 15/03/2021

Page 5 of 7

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com

1. DETERMINATION OF CADMIUM CONTENT BY IEC 62321-5 2013

Sample Receiving and Registration
↓
Sample Preparation
↓
Weigh sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Hotplate)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

2. DETERMINATION OF LEAD CONTENT BY IEC 62321-5 2013

Sample Receiving and Registration
↓
Sample Preparation
↓
Weigh sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Hotplate)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321-4 2013/AMD1 2017

Sample Receiving and Registration
↓
Sample Preparation
↓
Weigh sample (0.1-0.5g) into digestion vessel
↓
Acid digestion (Hotplate)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

4. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321-7-1 2015

Sample Receiving and Registration
↓
Sample Preparation
↓
Boiling-water-extraction
↓
Analyses by UV- Spectrophotometer
↓
Test Report

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321-6 2015

Sample Preparation
↓
Weigh sample (0.5-4.0g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

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/001, Ver: 2.0, Effective Date: 15/03/2021

Page 6 of 7

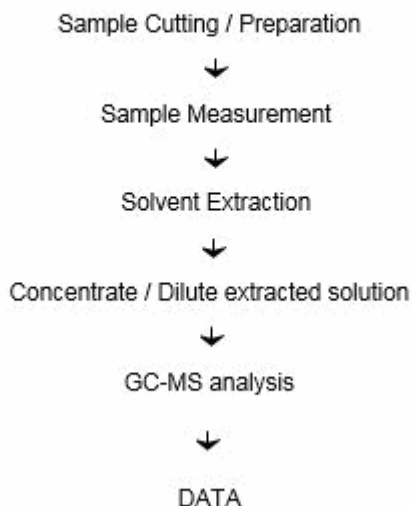
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com

DETERMINATION OF PHTHALATES WITH GC-MS

BY IEC 62321-8:2017



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/001, Ver: 2.0, Effective Date: 15/03/2021

*** End of test report ***

Page 7 of 7

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/terms-and-conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (for perishable samples) or 30 days only from date of report.

SGS (Malaysia) Sdn. Bhd.
(Company No. 10871-T)

Lot 4, Persiaran Jubli Perak, Seksyen 22, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia.
t +6(03) 7627 0080 f +6 (03) 7627 0082 www.sgs.com