

**TEST REPORT:**No. CRSSA/200742417-CA41516  
Job Ref. CRS/2020-07-08-003**REPORTED DATE:** 15/07/2020**CSC STEEL SDN BHD**180, KAWASAN INDUSTRI AYER KEROH, AYER  
KEROH, 75450 MELAKA

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

SAMPLE DESCRIPTION : REALCOLOR® THERMOSHIELD

SAMPLE RECEIVED : 08/07/2020

TESTING PERIOD : 08/07/2020 to 13/07/2020

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

  
CHEE TUCK CHOON

SECTION HEAD

IKM NO. M/3983/6401/12/14



Test Report Form No.: SGS/TR/CRS/001, Ver: 6.0, Effective Date: 13/01/2020

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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 Item(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.   | 45     | 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/cm <sup>2</sup> | With reference to IEC 62321-7-1:2015, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis. | N.D.   | 0.10 | -        |
| 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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| Test Item(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   | -        |

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**Test Part Description**

Sample Description: -PLEASE REFER TO PAGE 1-

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

| Test Item(s):  | Unit  | Test Method  | Result | MDL | Limit    |
|--|-------|--|--------|-----|----------|
| Dibutyl phthalate (DBP)<br>(CAS No. 84-74-2)               | mg/kg | With reference to IEC 62321-8:2017,<br>determination of phthalates by GC-MS. | N.D.   | 50  | Max 1000 |
| Benzyl butyl phthalate<br>(BBP)<br>(CAS No. 85-68-7)       | mg/kg | With reference to IEC 62321-8:2017,<br>determination of phthalates by GC-MS. | N.D.   | 50  | Max 1000 |
| Di(2-ethylhexyl) phthalate<br>(DEHP)<br>(CAS No. 117-81-7) | mg/kg | With reference to IEC 62321-8:2017,<br>determination of phthalates by GC-MS. | N.D.   | 50  | Max 1000 |
| Diisobutyl phthalate<br>(DIBP)<br>(CAS No. 84-69-5)        | mg/kg | With reference to IEC 62321-8:2017,<br>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) a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm<sup>2</sup>. 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/cm<sup>2</sup>). The coating is considered a non-CrVI based coating.
- c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> 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.



- (f) On 4 June 2015, [Commission Directive \(EU\) 2015/863](#) was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the RoHS Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
- (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.
- (h) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
- (i) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

**Remark:**

- 1) The above result is based on composite testing as per requested by client.

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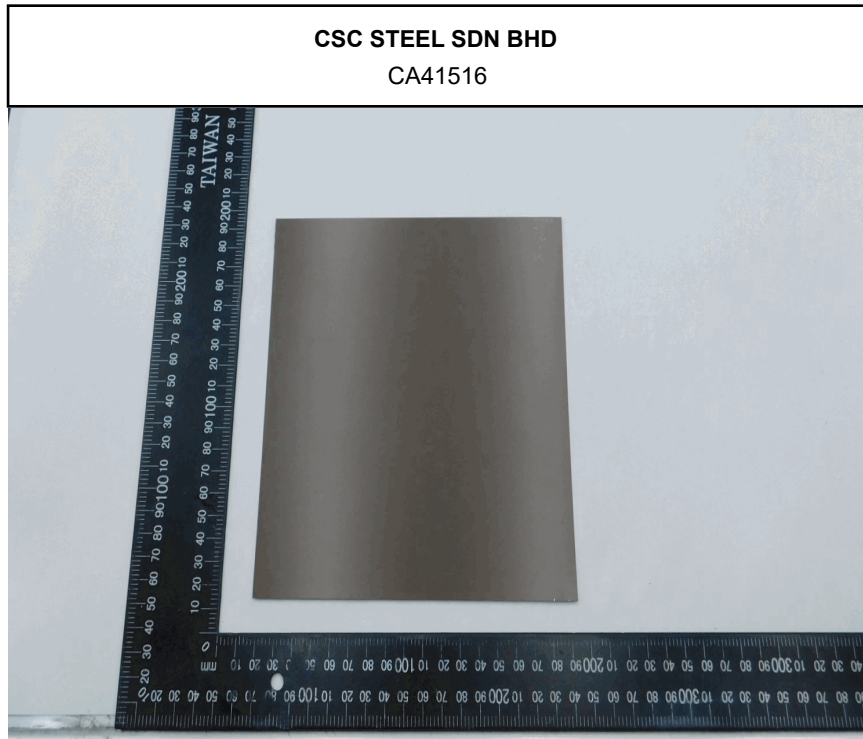
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**Test Part Description :**

Sample Description: -PLEASE REFER TO PAGE 1-



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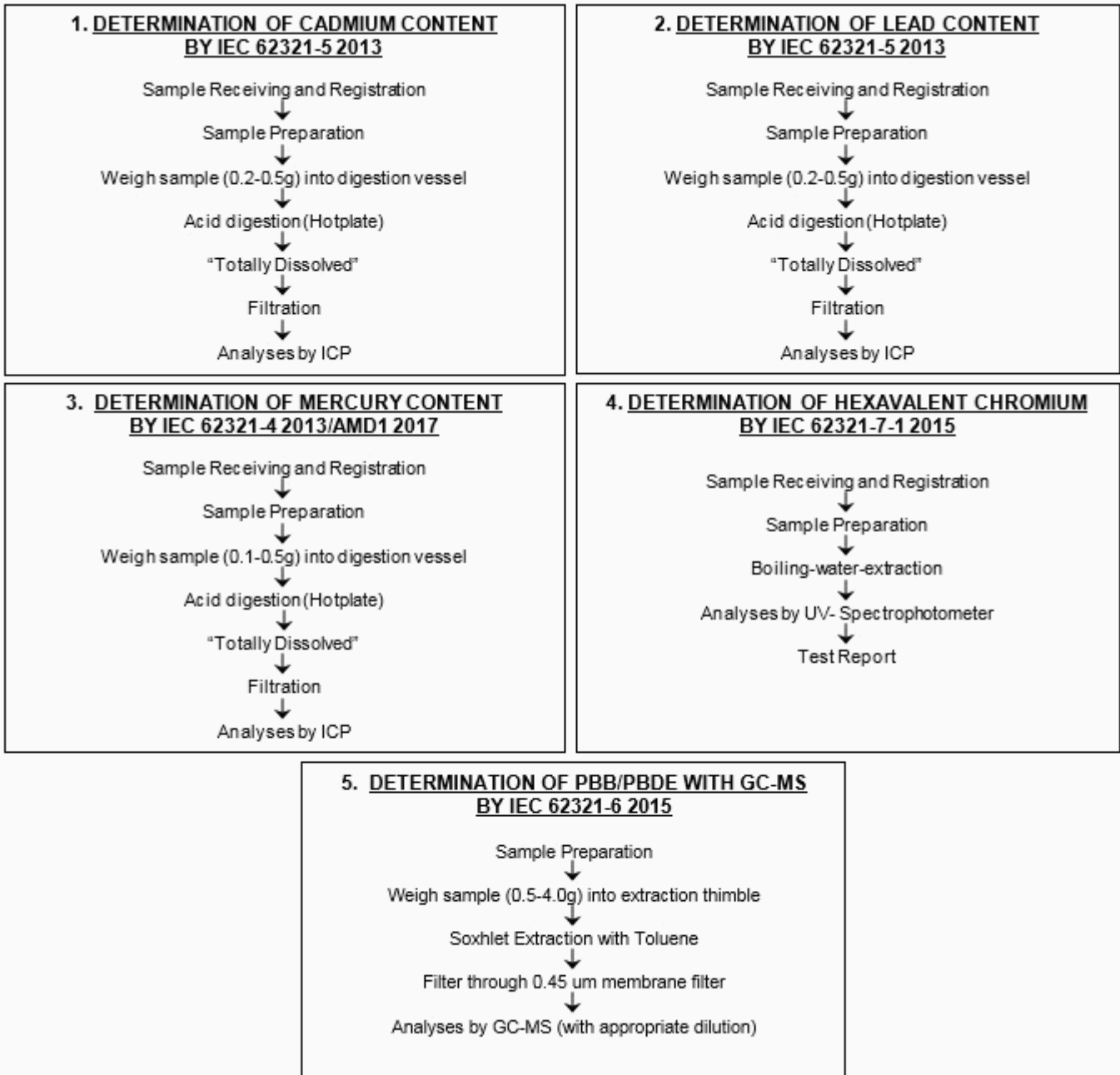
SGS (Malaysia) Sdn Bhd.  
(Company No. 10871-T)

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](http://www.sgs.com)

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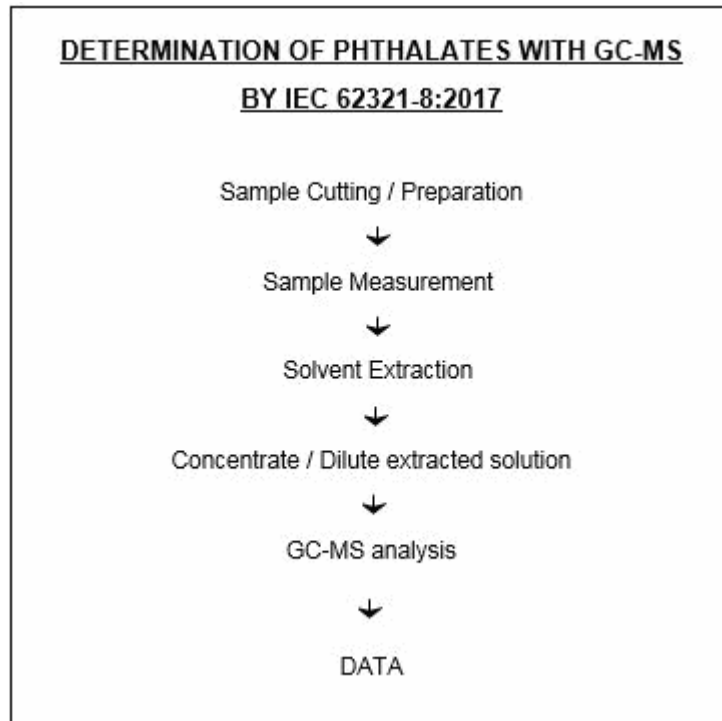
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\*\*\* End of test report \*\*\*

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