

**TEST REPORT:**No. CRSSA/201252065-CA49977  
Job Ref. CRS/2020-10-26-017**REPORTED DATE:** 14-December-2020**SHOWA DENKO MATERIALS (MALAYSIA) SDN BHD**2512, JALAN PERUSAHAAN BARU, KAWASAN  
PERUSAHAAN PERAI, 13600 PERAI, PENANG,  
MALAYSIA.

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

SAMPLE DESCRIPTION : EPOXY MOLDING COMPOUND  
SAMPLE NAME: CEL-9220HF 13 SERIES

SAMPLE RECEIVED : 26-October-2020

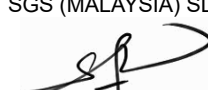
TESTING PERIOD : 26-October-2020 to 14-December-2020

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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/CRS/013, Ver: 10.0, Effective Date: 14/12/2020

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**TEST RESULTS:**

**Test Part Description**

Sample Description: -PLEASE REFER TO PAGE 1-

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

| Test Parameter(s):   | Unit  | Test Method  | Result | MDL |
|--|-------|--|--------|-----|
| Hexabromocyclododecane (HBCDD)(CAS No.: 3194-55-6,25637-99-4 | 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)<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 |
| 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 |
| 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 |
| 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 ; 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) 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.
  - (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.
  - (g) 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.
  - (h) 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.

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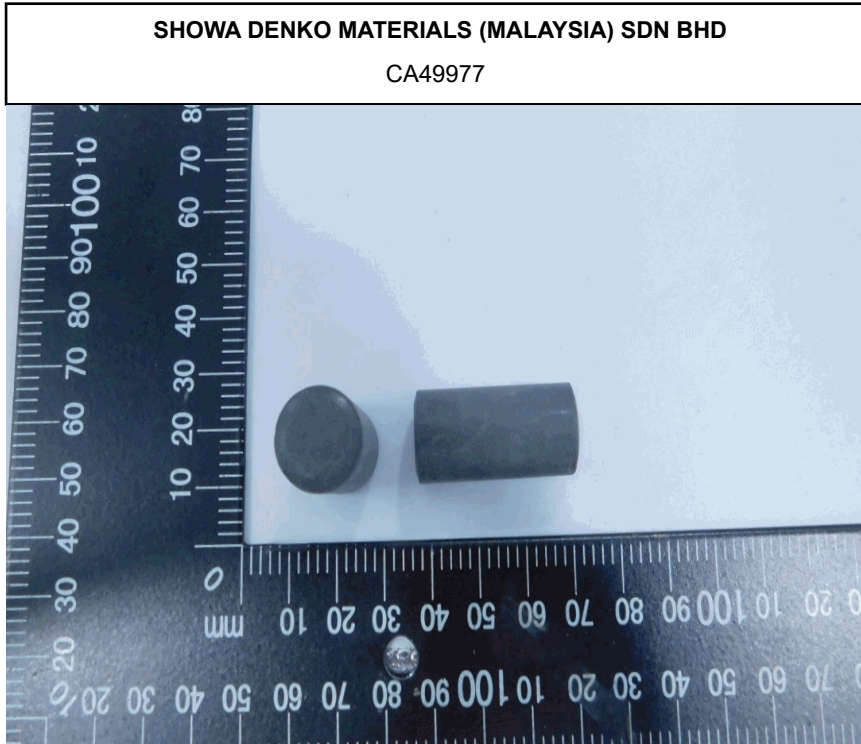
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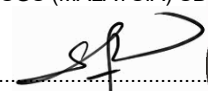
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SGS authenticate the photo on original report only

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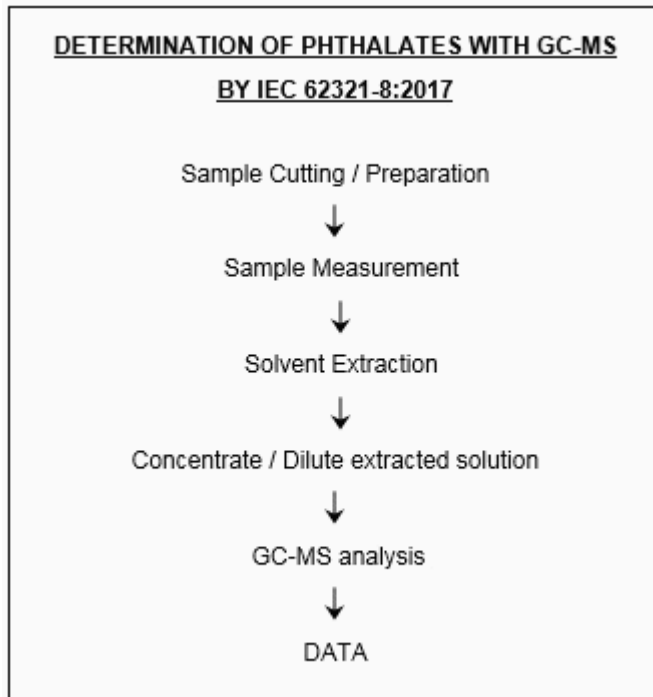
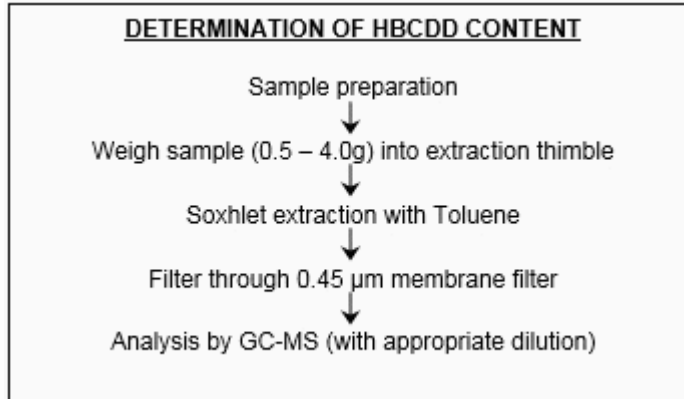
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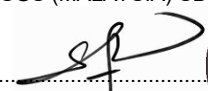
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\*\*\* End of test report \*\*\*

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