



## Test Report

Report No. A2230249484101009

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**Company Name** ZHEJIANG RECTRON ELECTRONIC CO.,LTD.  
**shown on Report**  
**Address** 28# LIZHENG ROAD, HUIMIN DISTRICT,JIASHAN COUNTY, JIAXING CITY,ZHEJIANG PROVINCE, CHINA

**The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant**

Sample Name HF Molding  
Material Epoxy  
Sample Received Date Jun. 7, 2023  
Testing Period Jun. 7, 2023 to Jun. 13, 2023

**Test Requested** As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Phthalates , Asbestos in the submitted sample(s).

**Test Method/Test Result(s)** Please refer to the following page(s).



Approved by



Date

Jun. 20, 2023

Chen kaimin  
Lab Manager

No. R509603435

Centre Testing International Pinbiao(Shanghai) Co., Ltd.

No.1351, Wanfang Road, Minhang District, Shanghai, China

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## Test Method

| Tested Item(s)                         | Test Method   | Measured Equipment(s) |
|--|---|-----------------------|
| Lead (Pb)                              | IEC 62321-5:2013  | ICP-OES               |
| Cadmium (Cd)                           | IEC 62321-5:2013  | ICP-OES               |
| Mercury (Hg)                           | IEC 62321-4:2013+AMD1:2017 CSV  | ICP-OES               |
| Hexavalent Chromium (Cr(VI))           | IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013 | UV-Vis/ICP-OES        |
| Polybrominated Biphenyls (PBBs)        | IEC 62321-6:2015  | GC-MS                 |
| Polybrominated Diphenyl Ethers (PBDEs) | IEC 62321-6:2015  | GC-MS                 |
| Phthalates (DBP, BBP, DEHP, DIBP)      | IEC 62321-8:2017  | GC-MS                 |
| Antimony(Sb)                           | Refer to US EPA 3052:1996 & US EPA 6010D:2018*                                | ICP-OES               |
| Fluorine (F)                           | Refer to EN 14582:2016  | IC                    |
| Chlorine (Cl)                          | Refer to EN 14582:2016  | IC                    |
| Bromine (Br)                           | Refer to EN 14582:2016  | IC                    |
| Phthalates                             | IEC 62321-8:2017  | GC-MS                 |
| Asbestos*                              | ISO 22262-1:2012+NIOSH 9000:2015+NIOSH 9002:1994                              | PLM+XRD               |

## Test Result(s)

| Tested Item(s)               | Result | MDL     |
|------------------------------|--------|---------|
|                              | 009    |         |
| Lead (Pb)                    | N.D.   | 2 mg/kg |
| Cadmium (Cd)                 | N.D.   | 2 mg/kg |
| Mercury (Hg)                 | N.D.   | 2 mg/kg |
| Hexavalent Chromium (Cr(VI)) | N.D.   | 8 mg/kg |

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| Tested Item(s)                         | Result | MDL     |
|--|--------|---------|
|  | 009    |         |
| <b>Polybrominated Biphenyls (PBBs)</b> |        |         |
| Monobromobiphenyl                      | N.D.   | 5 mg/kg |
| Dibromobiphenyl                        | N.D.   | 5 mg/kg |
| Tribromobiphenyl                       | N.D.   | 5 mg/kg |
| Tetrabromobiphenyl                     | N.D.   | 5 mg/kg |
| Pentabromobiphenyl                     | N.D.   | 5 mg/kg |
| Hexabromobiphenyl                      | N.D.   | 5 mg/kg |
| Heptabromobiphenyl                     | N.D.   | 5 mg/kg |
| Octabromobiphenyl                      | N.D.   | 5 mg/kg |
| Nonabromobiphenyl                      | N.D.   | 5 mg/kg |
| Decabromobiphenyl                      | N.D.   | 5 mg/kg |

| Tested Item(s)                                | Result | MDL     |
|---|--------|---------|
|   | 009    |         |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |        |         |
| Monobromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Dibromodiphenyl ether                         | N.D.   | 5 mg/kg |
| Tribromodiphenyl ether                        | N.D.   | 5 mg/kg |
| Tetrabromodiphenyl ether                      | N.D.   | 5 mg/kg |
| Pentabromodiphenyl ether                      | N.D.   | 5 mg/kg |
| Hexabromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Heptabromodiphenyl ether                      | N.D.   | 5 mg/kg |
| Octabromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Nonabromodiphenyl ether                       | N.D.   | 5 mg/kg |
| Decabromodiphenyl ether                       | N.D.   | 5 mg/kg |

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| Tested Item(s)                                      | Result | MDL      |
|---|--------|----------|
|   | 009    |          |
| <b>Phthalates (DBP, BBP, DEHP, DIBP)</b>            |        |          |
| Dibutyl phthalate (DBP)<br>CAS#:84-74-2             | N.D.   | 50 mg/kg |
| Butyl benzyl phthalate (BBP)<br>CAS#:85-68-7        | N.D.   | 50 mg/kg |
| Di-(2-ethylhexyl) phthalate<br>(DEHP) CAS#:117-81-7 | N.D.   | 50 mg/kg |
| Diisobutyl phthalate (DIBP)<br>CAS#:84-69-5         | N.D.   | 50 mg/kg |

| Tested Item(s) | Result | MDL      |
|----------------|--------|----------|
|                | 009    |          |
| Antimony (Sb)  | N.D.   | 10 mg/kg |

| Tested Item(s) | Result    | MDL      |
|----------------|-----------|----------|
|                | 009       |          |
| Fluorine (F)   | N.D.      | 10 mg/kg |
| Chlorine (Cl)  | 140 mg/kg | 10 mg/kg |
| Bromine (Br)   | N.D.      | 10 mg/kg |

| Tested Item(s)                                      | Result | MDL      |
|---|--------|----------|
|   | 009    |          |
| <b>Phthalates</b>                                   |        |          |
| Dibutyl phthalate (DBP)<br>CAS#:84-74-2             | N.D.   | 50 mg/kg |
| *Di-n-hexyl phthalate<br>(DNHP/DHEXP) CAS#:84-75-3  | N.D.   | 50 mg/kg |
| Butyl benzyl phthalate (BBP)<br>CAS#:85-68-7        | N.D.   | 50 mg/kg |
| *Dipentyl phthalate<br>(DPP/DPENP) CAS#:131-18-0    | N.D.   | 50 mg/kg |
| Di-(2-ethylhexyl) phthalate<br>(DEHP) CAS#:117-81-7 | N.D.   | 50 mg/kg |
| Di-n-octyl phthalate (DNOP)<br>CAS#:117-84-0        | N.D.   | 50 mg/kg |

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| Tested Item(s)  | Result | MDL       |
|---|--------|-----------|
|   | 009    |           |
| <b>Phthalates</b>   |        |           |
| Di-isononyl phthalate (DINP)<br>CAS#:28553-12-0,68515-48-0  | N.D.   | 50 mg/kg  |
| Di-iso-decyl phthalate (DIDP)<br>CAS#:26761-40-0,68515-49-1 | N.D.   | 50 mg/kg  |
| Diisobutyl phthalate (DIBP)<br>CAS#:84-69-5                 | N.D.   | 50 mg/kg  |
| *Diisopentylphthalate (DIPP)<br>CAS#:605-50-5               | N.D.   | 50 mg/kg  |
| *N-Pentyl-isopentyl phthalate<br>(NIPP) CAS#:776297-69-9    | N.D.   | 100 mg/kg |
| *Bis(2-methoxyethyl) phthalate<br>(DMEP) CAS#:117-82-8      | N.D.   | 50 mg/kg  |

| Material Category            | Substances/CAS Numbers            | Results |
|------------------------------|-----------------------------------|---------|
|                              |                                   | 009     |
| Asbestos*<br>(CAS 1332-21-4) | Chrysotile/12001-29-5             | N.A.D.  |
|                              | Crocidolite/12001-28-4            | N.A.D.  |
|                              | Amosite /12172-73-5               | N.A.D.  |
|                              | Tremolite Asbestos/ 77536-68-6    | N.A.D.  |
|                              | Actinolite Asbestos /77536-66-4   | N.A.D.  |
|                              | Anthophyllite Asbestos/77536-67-5 | N.A.D.  |

## Sample/Part Description

| No. | CTI Sample ID | Description     |
|-----|---------------|-----------------|
| 1   | 009           | Dark grey solid |

**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Antimony.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-N.A.D.= No Asbestos Detected(<Limit of detection)

**Note:** "\*" indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.

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## Explanation (Asbestos)

-The limit of detection of this method is defined as the detection and identification of one fibre or fibre bundle in the amount of sample examined. With appropriate matrix reduction procedures that are tailored to the nature of the sample, the limit of detection can be significantly lower than 0.1%.

-The estimated concentration(s) of the asbestos varieties detected in ranges is/are as follows: Trace (<0.1%), 0.1%~5%, 5%~50%, and 50%~100%.

-CTI Asbestos Testing Center has established strict quality assurance and supervision procedures in accordance with international standard. And the laboratory participates in the AIMS\* every year (three times per year) to confirm our proficiency.

-Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarized light microscopy. These materials often contain milled asbestos with too small fibre diameter and length to be detected.

-X-ray diffraction analysis cannot discriminate the particle shape in analytical sample and detects not only asbestos of fibrous form but also non-fibrous minerals related to asbestos such as serpentine minerals and/or amphibole minerals if they coexist.

\*The Asbestos in Materials Scheme (AIMS) is an international inter-laboratory testing scheme, and it is managed by the Health and Safety Laboratory (HSL) which on behalf of the Health and Safety Executive (HSE) of UK

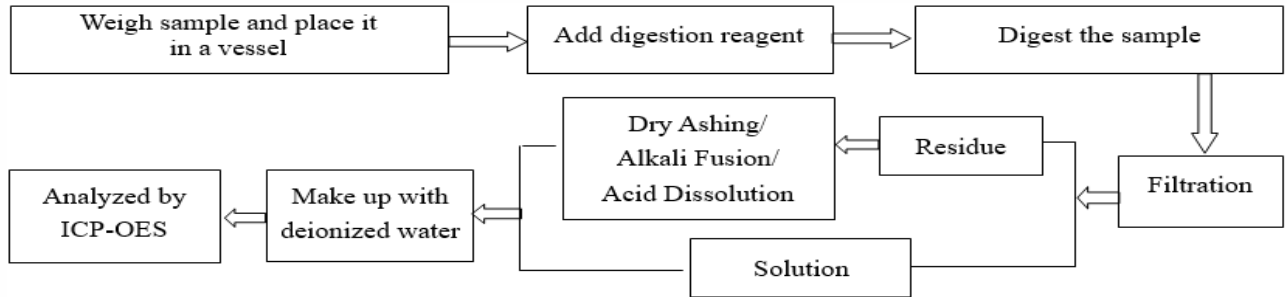
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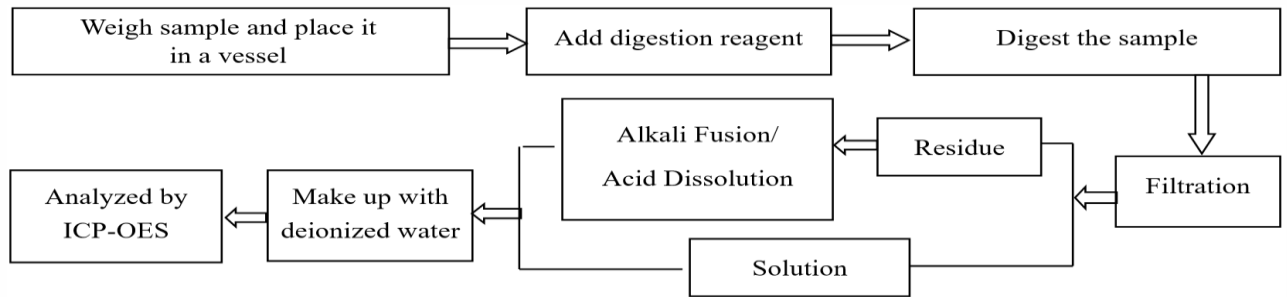
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## Test Process

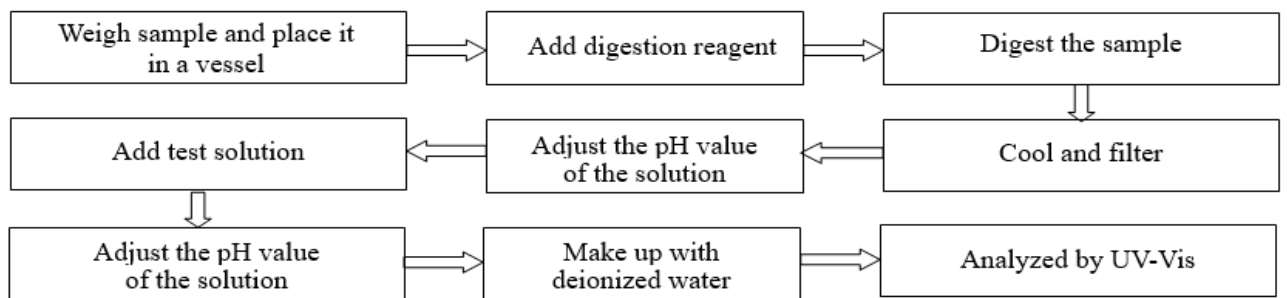
### 1. Lead (Pb), Cadmium (Cd), Chromium(Cr)



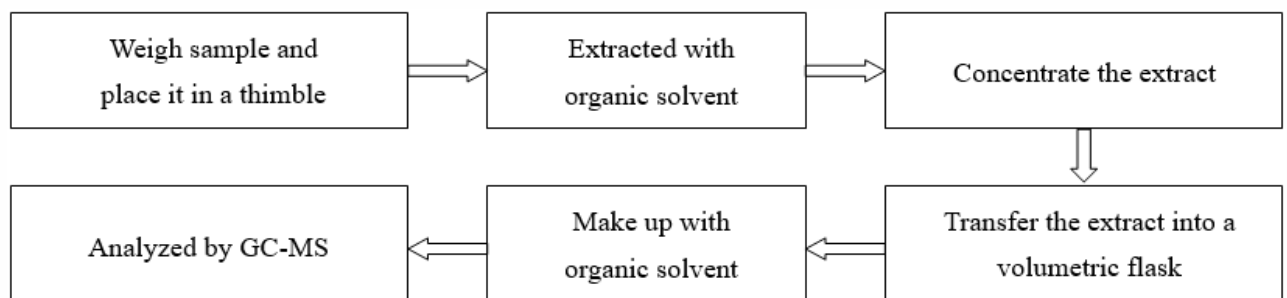
### 2. Mercury (Hg)



### 3. Hexavalent Chromium (Cr(VI))



### 4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)

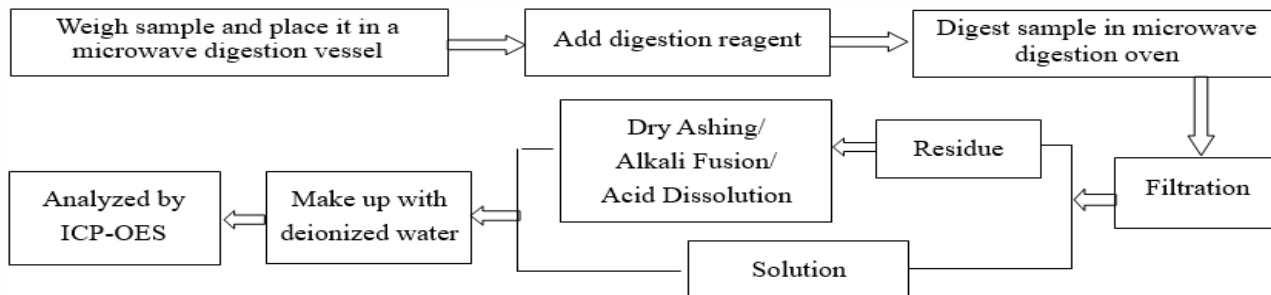


# Test Report

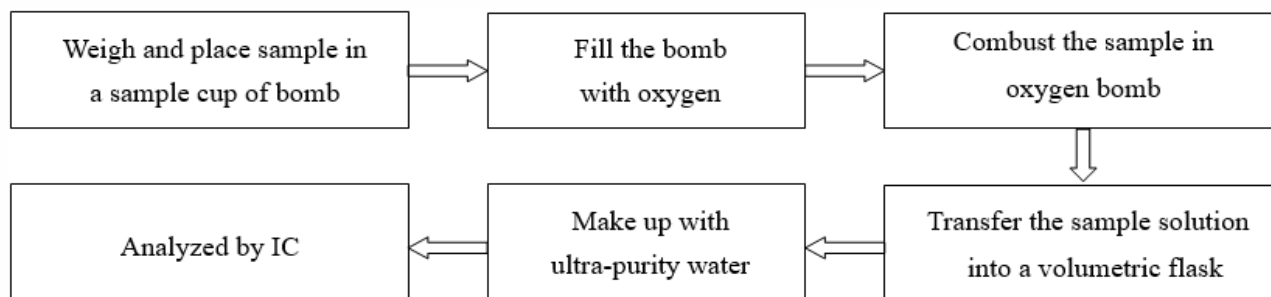
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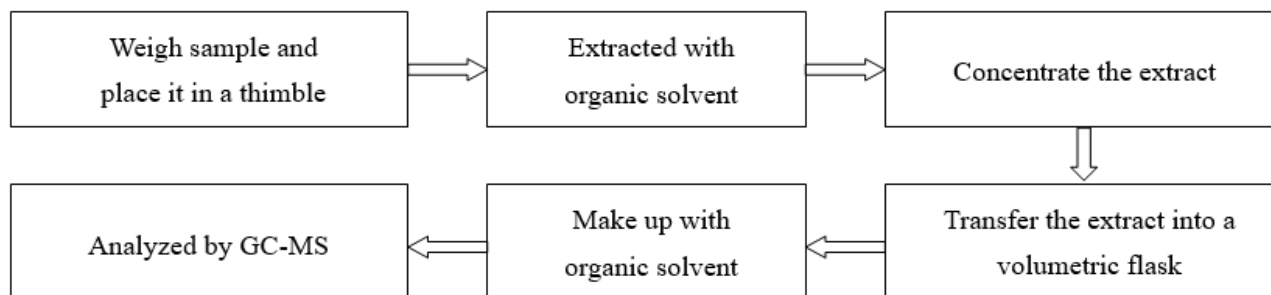
## 5. Antimony(Sb)



## 6. Fluorine (F), Chlorine (Cl), Bromine (Br)

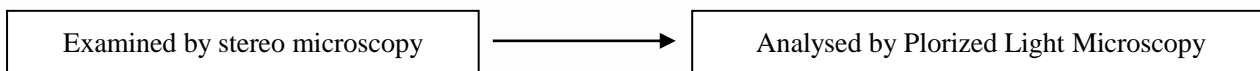


## 7. Phthalates

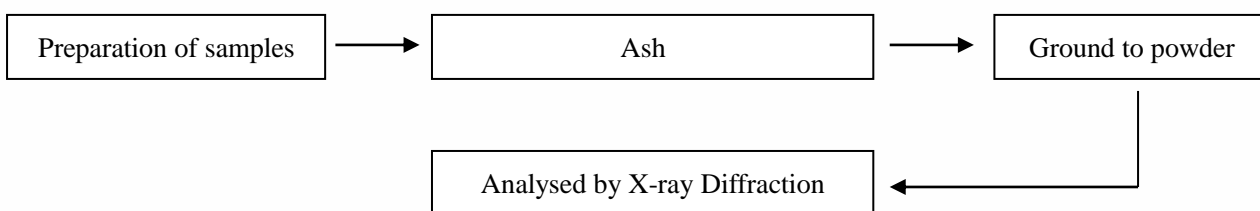


## 8. Asbestos

### PLM



### XRD



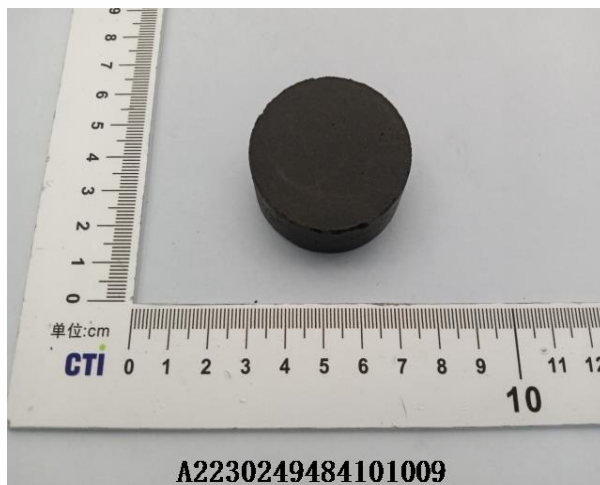


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## Photo(s) of the sample(s)



### Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

\*\*\* End of Report \*\*\*

## Appendix

### Client Reference Information

0402/0603/1.5KE/A405/AKM/BDB/BR-10/BR-15W/BR-3/BR-6/BR-8/BKM/CSP/D2PAK/D3K/DB/BDB/DBLS/DBS/DFN5x6EP/DFN0603/DFN0603-2L/DFN1006/DFN1006-2/2L/DFN1006-3/3L/DFN1610/DFN2.6\*2.6-10L/DFN2x2-3L/DFN2510/DFN2X2-6L/DFN3.3X3.3/DFN3x3/DFN4120-10L/DFN5x6/DFN5X6-8L/DFNWB0.6\*0.3/DI5/DO15/DO201AD/DO-213AB/DO218/DO218AB/DO277/DO34/DO35/DO41/DO41G/DPAK/ESOP-8/HR-MS/HVM/HVML/HVP/ITO220/ITO220A/ITO220AC/KBL/KBP/KBPG/LL34/LL41/LMDS/MB-F/MBM/MDA/MDC/MDF/MDK/MDS/MDSJ/MELF/MICRO-MELF/MINI-MELF/MP-15/MP-15W/MP-25/MP-25W/MP-35/MP-35W/MP-40/MP-50/MP-50W/MSBM/MSBS/MSOP10/MT-35/MT-35W/PDFN5X6P/PPAK3x3/PPAK5X6/PQFN2X2/PDFN2X2/R1/R10000H/R12000H/R10KH/R12KH/R16KH/R2/R3/R30KH/R4/R5/R6/R7/R8KH/R9KH/RB-15/RBU/RBUH/RC-2/RS1/RS1L/RS10M/RS10MLS/RS15M/RS15MLS/RS1M/RS2/RS20M/RS20MLS/RS25M/RS25MLS/RS2L/RS2M/RS30M/RS35M/RS35TB/RS40M/RS485/RS4L/RS4M/RS50M/RS6/RS6L/RS60M/RS6M/RS-6MLS/RS8/RS8L/RS8M/S35VB/S50VB/SBR/SC-75/SOT416/SKBPC/SLDBS/SlimPAQ/SlimPAQ-1/SLMDS/SLPDS/SMA (DO214AC) /SMAF/SMA-S/SMB (DO214AA/SMBF/SMB-F/SMC (DO214AB/SMX/SOD123/SOD123F/SOD123F(L)/SOD123F(L)-1/SOD123FH/SOD123FL/SOD123S/SOD123ST/SOD123FL-1/SOD323/SOD323F/SOD523/SOD523F/SOD723/SOD80C/SOD882/SOD923/SOF2-4/SOP-8L/SOP-14/SOP-8/SOT89/SOT143/SOT223/SOT223-2L/3L/SOT227/SOT23/SOT23-3L/SOT23-3S/SOT23-5/SOT236/SOT23-6/6L/SOT26/SOT323/SOT323FL/SC70/SOT346/SOT353/SOT363/SOT363-6L/SOT523/SOT563/SOT723/SOT883/SOT89/SOT89-3L/SSOD923/SSOT-6L/Sub-SMA/TO126/TO263/TO220/TO220-3L/TO220A/TO220A-1/TO220AB/TO220AC/TO220C/TO220F/TO220FAC/TO247/TO247-3L/TO247S/TO251/TO252/TO252-5L/TO3P/TO92/TO92L/TO92S/TOLL9/TQFN16/TSOT23-5/TDFN2x2-6L/TSOT23-6L/TSSOP14/TSSOP-8/TO126/TO126F/TO262/TO252-4L/TO-3P/UDFN-3L/WBFBP-02C/WOM/X3DFN2/ULBF

### Statement:

1. The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. The Appendix Information is/are the supplement(s) for the Report A2230249484101009.