

Test Report

Report No. A2180010339101002

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Applicant SEMIWARE SEMICONDUCTOR(SHANGHAI)CO.LTD

Address NO.3387 SHENDU RODA PUJIANG MINHANG SHANGHAI CHINA

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

Sample Name GAS DISCHARGE TVBE

Part No. SMD1206,SMD1210,SMD1812,SMD5042,2D-5,2D-8,3D-5,3D-6,3D-8,SMD5042,
SMD5057,2R-5,R-5,2R-8,3R-5,3R-6,3R-7,3R-8

Sample Received Date Jan. 24, 2018

Testing Period Jan. 24, 2018 to Feb. 1, 2018

Test Requested As specified by client, to screen the 181 substances of very high concern(SVHC) under Regulation (EC) No 1907/2006 of REACH in the submitted sample(s).

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

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

Summary According to the analytical results, concentrations of 181 SVHC substances are all less than 0.1%(w/w) in the submitted sample(s).

Tested by

Zhou Hongxia

Reviewed by

Gu CuiLi

Approved by

Su Hongwei

Date

Feb. 1, 2018

Su Hongwei
Senior Laboratory Manager

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

No. S201801573
No. 1996, Xinqiniao Road, Pudong New District, Shanghai,China



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Test Result(s)

| Batch | No. | Substance Name(s) | CAS No. | EC No. | Concentration (%) | Report Limit |
|-------|-----|---|--------------------------|-------------------------|-------------------|--------------|
| I | 1 | Anthracene | 120-12-7 | 204-371-1 | N.D. | 0.005% |
| I | 2 | 4,4' - Diaminodiphenylmethane | 101-77-9 | 202-974-4 | N.D. | 0.005% |
| I | 3 | Dibutyl phthalate(DBP) | 84-74-2 | 201-557-4 | N.D. | 0.005% |
| I | 4 | Cobalt dichloride* | 7646-79-9 | 231-589-4 | N.D. | 0.01% |
| I | 5 | Diarsenic pentaoxide* | 1303-28-2 | 215-116-9 | N.D. | 0.01% |
| I | 6 | Diarsenic trioxide* | 1327-53-3 | 215-481-4 | N.D. | 0.01% |
| I | 7 | Sodium dichromate* | 7789-12-0, 10588-01-9 | 234-190-3 | N.D. | 0.01% |
| I | 8 | Musk xylene | 81-15-2 | 201-329-4 | N.D. | 0.005% |
| I | 9 | Bis(2-ethyl(hexyl)phthalate)(DEHP) | 117-81-7 | 204-211-0 | N.D. | 0.005% |
| I | 10 | Hexabromocyclododecane (HBCDD) | 25637-99-4, 3194-55-6 | 247-148-4, 221-695-9 | N.D. | 0.005% |
| I | 11 | ShortChain Chlorinated Paraffins(SCCPs) | 85535-84-8 | 287-476-5 | N.D. | 0.01% |
| I | 12 | Bis(tributyltin)oxide (TBTO)* | 56-35-9 | 200-268-0 | N.D. | 0.005% |
| I | 13 | Lead hydrogen arsenate* | 7784-40-9 | 232-064-2 | N.D. | 0.01% |
| I | 14 | Benzyl butyl phthalate(BBP) | 85-68-7 | 201-622-7 | N.D. | 0.005% |
| I | 15 | Triethyl arsenate* | 15606-95-8 | 427-700-2 | N.D. | 0.01% |
| II | 16 | ^① Anthracene oil | 90640-80-5 | 292-602-7 | N.D. | 0.05% |
| II | 17 | ^① Anthracene oil, anthracene paste, distn. Lights **** | 91995-17-4 | 295-278-5 | N.D. | 0.05% |
| II | 18 | ^① Anthracene oil, anthracene paste, anthracene fraction | 91995-15-2 | 295-275-9 | N.D. | 0.05% |
| II | 19 | ^① Anthracene oil, anthracene-low | 90640-82-7 | 292-604-8 | N.D. | 0.05% |
| II | 20 | ^① Anthracene oil, anthracene paste | 90640-81-6 | 292-603-2 | N.D. | 0.05% |
| II | 21 | ^① Coal tar pitch, high temperature | 65996-93-2 | 266-028-2 | N.D. | 0.05% |
| II | 22 | Acrylamide | 79-06-1 | 201-173-7 | N.D. | 0.01% |
| II | 23 | 2,4-Dinitrotoluene | 121-14-2 | 204-450-0 | N.D. | 0.01% |
| II | 24 | Diisobutyl phthalate (DIBP) | 84-69-5 | 201-553-2 | N.D. | 0.005% |
| II | 25 | ^② Lead chromate | 7758-97-6 | 231-846-0 | N.D. | 0.05% |
| II | 26 | ^② Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*** | 12656-85-8 | 235-759-9 | N.D. | 0.05% |
| II | 27 | ^② Lead sulfochromate yellow (C.I. Pigment Yellow 34)*** | 1344-37-2 | 215-693-7 | N.D. | 0.05% |
| II | 28 | Tris(2-chloroethyl)phosphate (TCEP) | 115-96-8 | 204-118-5 | N.D. | 0.01% |

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| III | 29 | Trichloroethylene | 79-01-6 | 201-167-4 | N.D. | 0.005% |
| III | 30 | Boric acid* | 10043-35-3 11113-50-1 | 233-139-2 234-343-4 | N.D. | 0.01% |
| III | 31 | ^② Disodium tetraborate, anhydrous***** | 1330-43-4 12179-04-3 1303-96-4 | 215-540-4 | N.D. | 0.01% |
| III | 32 | ^② Tetraboron disodium heptaoxide, hydrate***** | 12267-73-1 | 235-541-3 | N.D. | 0.01% |
| III | 33 | Sodium chromate* | 7775-11-3 | 231-889-5 | N.D. | 0.01% |
| III | 34 | Potassium chromate* | 7789-00-6 | 232-140-5 | N.D. | 0.01% |
| III | 35 | Ammonium dichromate* | 7789-09-5 | 232-143-1 | N.D. | 0.01% |
| III | 36 | Potassium dichromate* | 7778-50-9 | 231-906-6 | N.D. | 0.01% |
| IV | 37 | Cobalt(II) sulphate* | 10124-43-3 | 233-334-2 | N.D. | 0.01% |
| IV | 38 | Cobalt(II) dinitrate* | 10141-05-6 | 233-402-1 | N.D. | 0.01% |
| IV | 39 | Cobalt(II) carbonate* | 513-79-1 | 208-169-4 | N.D. | 0.01% |
| IV | 40 | Cobalt(II) diacetate* | 71-48-7 | 200-755-8 | N.D. | 0.01% |
| IV | 41 | 2-Methoxyethanol | 109-86-4 | 203-713-7 | N.D. | 0.005% |
| IV | 42 | 2-Ethoxyethanol | 110-80-5 | 203-804-1 | N.D. | 0.005% |
| IV | 43 | Chromium trioxide* | 1333-82-0 | 215-607-8 | N.D. | 0.01% |
| IV | 44 | ^① Acids generated from chromium trioxide and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid* | 7738-94-5 13530-68-2 | 231-801-5 236-881-5 | N.D. | 0.01% |
| V | 45 | 2-ethoxyethyl acetate | 111-15-9 | 203-839-2 | N.D. | 0.01% |
| V | 46 | Strontium chromate* | 7789-06-2 | 232-142-6 | N.D. | 0.01% |
| V | 47 | ^① 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters | 68515-42-4 | 271-084-6 | N.D. | 0.01% |
| V | 48 | Hydrazine | 7803-57-8 302-01-2 | 206-114-9 | N.D. | 0.01% |
| V | 49 | 1-methyl-2-pyrrolidone | 872-50-4 | 212-828-1 | N.D. | 0.01% |
| V | 50 | 1,2,3-trichloropropane | 96-18-4 | 202-486-1 | N.D. | 0.01% |
| V | 51 | ^① 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich | 71888-89-6 | 276-158-1 | N.D. | 0.01% |
| VI | 52 | Dichromium tris(chromate)* | 24613-89-6 | 246-356-2 | N.D. | 0.01% |

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| VI | 53 | Potassium hydroxyoctaoxodizincatedichromate* | 11103-86-9 | 234-329-8 | N.D. | 0.01% |
| VI | 54 | Pentazinc chromate octahydroxide* | 49663-84-5 | 256-418-0 | N.D. | 0.01% |
| VI | 55 | ^② Aluminosilicate Refractory Ceramic Fibres (RCF) ** | - | - | N.D. | 0.05% |
| VI | 56 | ^② Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF) ** | - | - | N.D. | 0.05% |
| VI | 57 | ^① Formaldehyde, oligomeric reaction products with aniline (technical MDA) [▲] | 25214-70-4 | 500-036-1 | N.D. | 0.01% |
| VI | 58 | Bis(2-methoxyethyl) phthalate | 117-82-8 | 204-212-6 | N.D. | 0.005% |
| VI | 59 | 2-Methoxyaniline(o-Anisidine) | 90-04-0 | 201-963-1 | N.D. | 0.005% |
| VI | 60 | 4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-Octylphenol) | 140-66-9 | 205-426-2 | N.D. | 0.005% |
| VI | 61 | 1,2-Dichloroethane | 107-06-2 | 203-458-1 | N.D. | 0.005% |
| VI | 62 | Bis(2-methoxyethyl) ether | 111-96-6 | 203-924-4 | N.D. | 0.005% |
| VI | 63 | Arsenic acid* | 7778-39-4 | 231-901-9 | N.D. | 0.01% |
| VI | 64 | Calcium arsenate* | 7778-44-1 | 231-904-5 | N.D. | 0.01% |
| VI | 65 | Trilead diarsenate* | 3687-31-8 | 222-979-5 | N.D. | 0.01% |
| VI | 66 | N,N-dimethylacetamide (DMAC) | 127-19-5 | 204-826-4 | N.D. | 0.005% |
| VI | 67 | 2,2'-dichloro-4,4'-methylenedianiline (MOCA) | 101-14-4 | 202-918-9 | N.D. | 0.005% |
| VI | 68 | Phenolphthalein | 77-9-8 | 201-004-7 | N.D. | 0.005% |
| VI | 69 | Lead diazide* | 13424-46-9 | 236-542-1 | N.D. | 0.01% |
| VI | 70 | Lead 2,4,6-trinitro-m-phenylene dioxide (Lead styphnate)* | 15245-44-0 | 239-290-0 | N.D. | 0.01% |
| VI | 71 | Lead dipicrate* | 6477-64-1 | 229-335-2 | N.D. | 0.01% |
| VII | 72 | 1,2-bis(2-methoxyethoxy) ethane (TEGDME; triglyme) | 112-49-2 | 203-977-3 | N.D. | 0.01% |
| VII | 73 | 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) | 110-71-4 | 203-794-9 | N.D. | 0.01% |
| VII | 74 | Diboron trioxide* | 1303-86-2 | 215-125-8 | N.D. | 0.01% |
| VII | 75 | Formamide | 75-12-7 | 200-842-0 | N.D. | 0.01% |
| VII | 76 | Lead(II) bis methanesulfonate* | 17570-76-2 | 401-750-5 | N.D. | 0.01% |
| VII | 77 | TGIC(1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione) | 2451-62-9 | 219-514-3 | N.D. | 0.01% |

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| VII | 78 | β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione) | 59653-74-6 | 423-400-0 | N.D. | 0.01% |
| VII | 79 | 4,4'-bis(dimethylamino) benzophenone (Michler's ketone) | 90-94-8 | 202-027-5 | N.D. | 0.01% |
| VII | 80 | N,N,N',N'-tetramethyl-4,4'-methylene dianiline (Michler's base) | 101-61-1 | 202-959-2 | N.D. | 0.01% |
| VII | 81 | [4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride(C.I. Basic Violet 3)*** | 548-62-9 | 208-953-6 | N.D. | 0.01% |
| VII | 82 | [4-[[4-anilino-1-naphthyl] [4-(dimethylamino)phenyl] methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride(C.I. Basic Blue 26)*** | 2580-56-5 | 219-943-6 | N.D. | 0.01% |
| VII | 83 | α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)*** | 6786-83-0 | 229-851-8 | N.D. | 0.01% |
| VII | 84 | 4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol | 561-41-1 | 209-218-2 | N.D. | 0.01% |
| VIII | 85 | Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE) | 1163-19-5 | 214-604-9 | N.D. | 0.05% |
| VIII | 86 | ^① 4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof] | - | - | N.D. | 0.05% |
| VIII | 87 | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) | 123-77-3 | 204-650-8 | N.D. | 0.05% |

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|-------|-----|--|---|---|-------------------|--------------|
| VIII | 88 | 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues] | - | - | N.D. | 0.05% |
| VIII | 89 | Henicosafuoroundecanoic acid | 2058-94-8 | 218-165-4 | N.D. | 0.05% |
| VIII | 90 | Pentacosafuorotridecanoic acid | 72629-94-8 | 276-745-2 | N.D. | 0.05% |
| VIII | 91 | Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride | 85-42-7, 13149-00-3, 14166-21-3 | 201-604-9, 236-086-3, 238-009-9 | N.D. | 0.05% |
| VIII | 92 | Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride | 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9 | 247-094-1, 243-072-0, 256-356-4, 260-566-1 | N.D. | 0.05% |
| VIII | 93 | Heptacosafuorotetradecanoic acid | 376-06-7 | 206-803-4 | N.D. | 0.05% |
| VIII | 94 | Diisopentylphthalate(DIPP) | 605-50-5 | 210-088-4 | N.D. | 0.05% |
| VIII | 95 | [Ⓢ] 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear | 84777-06-0 | 284-032-2 | N.D. | 0.05% |
| VIII | 96 | N-pentyl-isopentylphthalate | 776297-69-9 | - | N.D. | 0.05% |
| VIII | 97 | Methoxyacetic acid | 625-45-6 | 210-894-6 | N.D. | 0.05% |
| VIII | 98 | Tricosafuorododecanoic acid | 307-55-1 | 206-203-2 | N.D. | 0.05% |
| VIII | 99 | 1,2-Diethoxyethane | 629-14-1 | 211-076-1 | N.D. | 0.05% |
| VIII | 100 | 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine | 143860-04-2 | 421-150-7 | N.D. | 0.05% |
| VIII | 101 | 4-methyl-m-phenylenediamine (toluene-2,4-diamine) | 95-80-7 | 202-453-1 | N.D. | 0.05% |
| VIII | 102 | N-methylacetamide | 79-16-3 | 201-182-6 | N.D. | 0.05% |
| VIII | 103 | Pentalead tetraoxide sulphate* | 12065-90-6 | 235-067-7 | N.D. | 0.01% |
| VIII | 104 | Biphenyl-4-ylamine | 92-67-1 | 202-177-1 | N.D. | 0.05% |
| VIII | 105 | Dinoseb (6-sec-butyl-2,4-dinitrophenol) | 88-85-7 | 201-861-7 | N.D. | 0.05% |

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| VIII | 106 | Dioxobis(stearato)trilead* | 12578-12-0 | 235-702-8 | N.D. | 0.01% |
| VIII | 107 | Lead dinitrate* | 10099-74-8 | 233-245-9 | N.D. | 0.01% |
| VIII | 108 | Tetralead trioxide sulphate* | 12202-17-4 | 235-380-9 | N.D. | 0.01% |
| VIII | 109 | Lead monoxide (lead oxide)* | 1317-36-8 | 215-267-0 | N.D. | 0.01% |
| VIII | 110 | Lead titanium trioxide* | 12060-00-3 | 235-038-9 | N.D. | 0.01% |
| VIII | 111 | 4,4'-methylenedi-o-toluidine | 838-88-0 | 212-658-8 | N.D. | 0.05% |
| VIII | 112 | Acetic acid, lead salt, basic* | 51404-69-4 | 257-175-3 | N.D. | 0.01% |
| VIII | 113 | Dimethyl sulphate | 77-78-1 | 201-058-1 | N.D. | 0.05% |
| VIII | 114 | Furan | 110-00-9 | 203-727-3 | N.D. | 0.05% |
| VIII | 115 | Pyrochlore, antimony lead yellow* | 8012-00-8 | 232-382-1 | N.D. | 0.01% |
| VIII | 116 | Tetraethyllead* | 78-00-2 | 201-075-4 | N.D. | 0.01% |
| VIII | 117 | [Phthalato(2-)]dioxotrilead* | 69011-06-9 | 273-688-5 | N.D. | 0.01% |
| VIII | 118 | Diethyl sulphate | 64-67-5 | 200-589-6 | N.D. | 0.05% |
| VIII | 119 | Lead cyanamidate* | 20837-86-9 | 244-073-9 | N.D. | 0.01% |
| VIII | 120 | Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped* | 68784-75-8 | 272-271-5 | N.D. | 0.01% |
| VIII | 121 | Trilead dioxide phosphonate* | 12141-20-7 | 235-252-2 | N.D. | 0.01% |
| VIII | 122 | <i>o</i> -Toluidine | 95-53-4 | 202-429-0 | N.D. | 0.05% |
| VIII | 123 | <i>o</i> -aminoazotoluene | 97-56-3 | 202-591-2 | N.D. | 0.05% |
| VIII | 124 | 4-aminoazobenzene | 60-09-3 | 200-453-6 | N.D. | 0.05% |
| VIII | 125 | 6-methoxy- <i>m</i> -toluidine (<i>p</i> -cresidine) | 120-71-8 | 204-419-1 | N.D. | 0.05% |
| VIII | 126 | Dibutyltin dichloride (DBTC)* | 683-18-1 | 211-670-0 | N.D. | 0.05% |
| VIII | 127 | Lead titanium zirconium oxide* | 12626-81-2 | 235-727-4 | N.D. | 0.01% |
| VIII | 128 | Methyloxirane (Propylene oxide) | 75-56-9 | 200-879-2 | N.D. | 0.05% |
| VIII | 129 | 1-bromopropane (n-propyl bromide) | 106-94-5 | 203-445-0 | N.D. | 0.05% |
| VIII | 130 | Trilead bis(carbonate)dihydroxide* | 1319-46-6 | 215-290-6 | N.D. | 0.01% |
| VIII | 131 | Fatty acids, C16-18, lead salts* | 91031-62-8 | 292-966-7 | N.D. | 0.01% |
| VIII | 132 | Orange lead (lead tetroxide)* | 1314-41-6 | 215-235-6 | N.D. | 0.01% |
| VIII | 133 | Sulfurous acid, lead salt, dibasic* | 62229-08-7 | 263-467-1 | N.D. | 0.01% |
| VIII | 134 | 4,4'-oxydianiline and its salts | 101-80-4 | 202-977-0 | N.D. | 0.05% |
| VIII | 135 | Lead oxide sulfate* | 12036-76-9 | 234-853-7 | N.D. | 0.01% |
| VIII | 136 | Lead bis(tetrafluoroborate)* | 13814-96-5 | 237-486-0 | N.D. | 0.01% |
| VIII | 137 | Silicic acid, lead salt* | 11120-22-2 | 234-363-3 | N.D. | 0.01% |
| VIII | 138 | N,N-dimethylformamide | 68-12-2 | 200-679-5 | N.D. | 0.05% |
| IX | 139 | Cadmium | 7440-43-9 | 231-152-8 | N.D. | 0.01% |
| IX | 140 | Cadmium oxide* | 1306-19-0 | 215-146-2 | N.D. | 0.01% |
| IX | 141 | Dipentyl phthalate (DPP) | 131-18-0 | 205-017-9 | N.D. | 0.01% |

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|-------|-----|--|------------|----------------------|-------------------|--------------|
| IX | 142 | ^① 4-Nonylphenol, branched and linear, ethoxylated[<i>substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof</i>] | - | - | N.D. | 0.05% |
| IX | 143 | Ammonium pentadecafluorooctanoate (APFO) | 3825-26-1 | 223-320-4 | N.D. | 0.01% |
| IX | 144 | Pentadecafluorooctanoic acid (PFOA) | 335-67-1 | 206-397-9 | N.D. | 0.01% |
| X | 145 | ^① Trixylyl phosphate | 25155-23-1 | 246-677-8 | N.D. | 0.01% |
| X | 146 | Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38) | 1937-37-7 | 217-710-3 | N.D. | 0.01% |
| X | 147 | Dihexyl phthalate | 84-75-3 | 201-559-5 | N.D. | 0.01% |
| X | 148 | Cadmium sulphide* | 1306-23-6 | 215-147-8 | N.D. | 0.01% |
| X | 149 | Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)*** | 573-58-0 | 209-358-4 | N.D. | 0.01% |
| X | 150 | Lead di(acetate)* | 301-04-2 | 206-104-4 | N.D. | 0.01% |
| X | 151 | Imidazolidine-2-thione; 2-imidazoline-2-thiol | 96-45-7 | 202-506-9 | N.D. | 0.01% |
| XI | 152 | ^① 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear | 68515-50-4 | 271-093-5 | N.D. | 0.01% |
| XI | 153 | Cadmium chloride* | 10108-64-2 | 233-296-7 | N.D. | 0.01% |
| XI | 154 | ^② Sodium perborate; perboric acid, sodium salt***** | - | 239-172-9, 234-390-0 | N.D. | 0.01% |
| XI | 155 | ^② Sodium peroxometaborate***** | 7632-04-4 | 231-556-4 | N.D. | 0.01% |
| XII | 156 | 2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) | 25973-55-1 | 247-384-8 | N.D. | 0.01% |

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| Batch | No. | Substance Name(s) | CAS No. | EC No. | Concentration (%) | Report Limit |
|-------|-----|--|---------------------------|-------------------------|-------------------|--------------|
| XII | 157 | 2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) | 3846-71-7 | 223-346-6 | N.D. | 0.01% |
| XII | 158 | 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)* | 15571-58-1 | 239-622-4 | N.D. | 0.05% |
| XII | 159 | Cadmium fluoride* | 7790-79-6 | 232-222-0 | N.D. | 0.01% |
| XII | 160 | Cadmium sulphate* | 10124-36-4, 31119-53-6 | 233-331-6 | N.D. | 0.01% |
| XII | 161 | ^① Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)* | - | - | N.D. | 0.05% |
| XIII | 162 | ^① 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (EC No. 201- 559-5) | 68515-51-5, 68648-93-1 | 271-094-0, 272-013-1 | N.D. | 0.05% |
| XIII | 163 | ^① 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof] | - | - | N.D. | 0.05% |
| XIV | 164 | Nitrobenzene | 98-95-3 | 202-716-0 | N.D. | 0.01% |
| XIV | 165 | 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) | 3864-99-1 | 223-383-8 | N.D. | 0.01% |
| XIV | 166 | 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) | 36437-37-3 | 253-037-1 | N.D. | 0.01% |
| XIV | 167 | 1,3-propanesultone | 1120-71-4 | 214-317-9 | N.D. | 0.01% |

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| Batch | No. | Substance Name(s) | CAS No. | EC No. | Concentration (%) | Report Limit |
|-------|-----|--|--|------------------------------|-------------------|--------------|
| XIV | 168 | Perfluorononan-1-oic-acid and its sodium and ammonium salts | 375-95-1 21049-39-8 4149-60-4 | 206-801-3 | N.D. | 0.01% |
| XV | 169 | Benzo[def]chrysene (Benzo[a]pyrene) | 50-32-8 | 200-028-5 | N.D. | 0.01% |
| XVI | 170 | 4,4'-isopropylidenediphenol (bisphenol A; BPA) | 80-05-7 | 201-245-8 | N.D. | 0.01% |
| XVI | 171 | Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts | 3108-42-7 335-76-2 3830-45-3 | 221-470-5 206-400-3 -- | N.D. | 0.01% |
| XVI | 172 | <i>p</i> -(1,1-dimethylpropyl)phenol | 80-46-6 | 201-280-9 | N.D. | 0.01% |
| XVI | 173 | ^① 4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof] | -- | -- | N.D. | 0.05% |
| XVII | 174 | Perfluorohexane-1-sulphonic acid and its salts | 355-46-4 | 206-587-1 | N.D. | 0.0005% |
| XVIII | 175 | Dechlorane plus (including any of its individual anti- and syn-isomers or any combination thereof) | 13560-89-9; 135821-74-8; 135821-03-3 | 236-948-9 - - | N.D. | 0.01% |
| XVIII | 176 | Benzo[a]anthracene | 56-55-3 | 200-280-6 | N.D. | 0.01% |
| XVIII | 177 | Cadmium nitrate* | 10325-94-7 | 233-710-6 | N.D. | 0.01% |
| XVIII | 178 | Cadmium carbonate* | 513-78-0 | 208-168-9 | N.D. | 0.01% |
| XVIII | 179 | Cadmium hydroxide* | 21041-95-2 | 244-168-5 | N.D. | 0.01% |
| XVIII | 180 | Chrysene | 218-01-9 | 205-923-4 | N.D. | 0.01% |
| XVIII | 181 | ^③ Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP)[with ≥0.1% w/w 4-heptylphenol, branched and linear (4-HPbl)] | - | - | N.D. | 0.05% |

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Test Method:

Refer to US EPA3052:1996, US EPA 3050B:1996, US EPA3060A:1996, US EPA 3550C:2007,
US EPA 3540C:1996, ISO 17353:2004(E), EN 14582:2016 for sample pretreatment.

Analyzed by ICP-OES, UV-Vis, IC, HPLC, GC-MS, GC-MS(NCI), Headspace-GCMS and LC-MS-MS.

Tested Sample/Part Description Electronic components (Tested as a whole)

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Note:

1. w/w = weight by weight; 0.1% = 1000 mg/kg = 1000 ppm
2. N.D. = Not Detected (<report limit)
3. *: Concentration value of the substance by the conversion from the test results of certain elements. Concentration value of Bis(tributyltin)oxide(TBTO), Dibutyltin dichloride (DBTC), 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE), Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE) by the conversion from the test results of certain compounds(Tributyl Tins(TBT), Dibutyl Tins(DBT), Dioctyl Tins(DOT), Monoctyl Tins(MOT)).
4. **: All refractory ceramic fibres are covered by index number 650-017-00-8 in Annex VI of the Regulation on Classification, Labeling and Packaging of chemical substances and mixtures, the so called CLP Regulation (Regulation (EC) No 1272/2008).
5. ***: C.I.: Colour Index
6. ****: Light fractions from distillation
7. *****: Concentration value of Disodiumtetraborate, anhydrous and Tetraboron disodium heptaoxide, hydrate is evaluated by Disodiumtetraborate, with no consider of the hydrate. Concentration value of Sodium perborate; perboric acid, sodium salt; Sodium peroxometaborate is evaluated by Sodium perborate, with no consider of the hydrate.
8. ^: Concentration value of Formaldehyde, oligomeric reaction products with aniline(technical MDA) by the conversion from the test results of certain compounds(2,4-Diaminodiphenylmethane, 4,4'-Diaminodiphenylmethane, 2,6-Diaminodiphenylmethane).
9. ①: In view of the substances are established as UVCB substances (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.
10. ②: In view of the substance contain variable substances, the test results are calculated based on main constituents of the representative compounds for the substances, and the test results of the representative compounds are calculated based on the result of specified heavy metal elements.
11. ③: The substance is established as UVCB substance (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test result is calculated based on 4-heptylphenol, branched and linear. When the content of 4-heptylphenol, branched and linear is equal to or higher than 0.1% (w/w), the presence of the substance in the sample need to be further confirmed by checking MSDS or requesting from suppliers.
12. The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.

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Appendix:

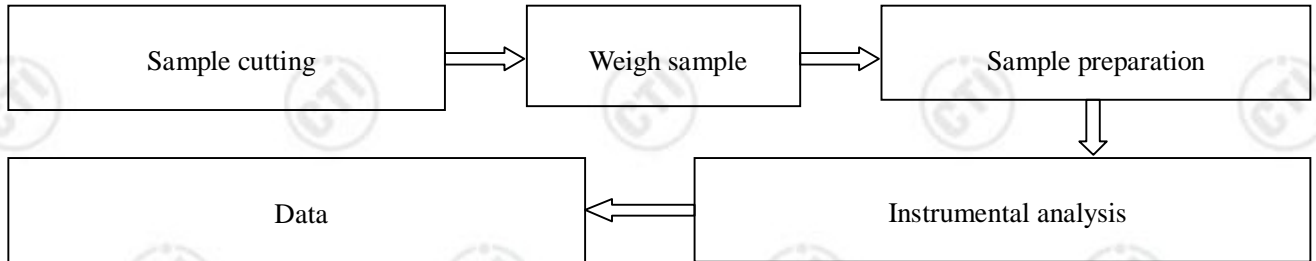
1. Any supplier of an article containing a substance that is included in the Candidate List in a concentration above 0.1 % weight by weight (w/w) has the duty to communicate information in accordance with Article 33 of European Union regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).
 - 1) Any supplier shall provide the recipient of the article with sufficient information to allow safe use of the article including, as a minimum, the name of that substance.
 - 2) On request by a consumer any supplier shall provide the consumer with sufficient information to allow safe use of the article including, as a minimum, the name of that substance within 45 days of receipt of the request, free of charge.
2. The supplier of a substance that is included in the Candidate List on their own shall provide the recipient of the substance with a safety data sheet for free compiled in accordance with Article 3 and Annex II of REACH.
3. The supplier of a mixture that containing a substance that is included in the Candidate List shall exchange information in accordance with Article 31, Article 32, and Annex II of REACH.
 - 1) Any supplier shall provide the recipient of the mixture with a safety data sheet for free where a preparation meets the criteria for classification as dangerous in accordance with Directives 1999/45/EC.
 - 2) Any supplier shall provide the recipient of the mixture with a safety data sheet for free where a preparation does not meet the criteria for classification as dangerous in accordance with Directive 1999/45/EC, but contains any substance that is included in the Candidate List in an individual concentration of ≥ 0.1 % by weight for non-gaseous mixtures or ≥ 0.2 % by volume for gaseous mixtures.

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Test Process



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Photo(s) of the sample(s)



*** End of Report ***

Statement:

1. This report is considered invalidated without approval signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client 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.