

Report No.: 0244152831b2 001

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Client: LUMI UNITED TECHNOLOGY CO., LTD.

Contact Information: F8, Jingqizhigu office building,
No.1 Tangling Rd., Liuxian Ave.,
Taoyuan Sub-dist., Nanshan Dist. Shenzhen 518055

Identification/ Smart Plug

Model No(s): SP-EUC01

Sample Receiving date: 2019-06-25

Testing Period: 2019-06-25 to 2019-08-05

Test Specification:

Test result:

- | | |
|---|--|
| <p>1. Screening of substances of very high concern (SVHC) subject to authorisation, according to (EU) No 143/2011, (EU) No 125/2012, (EU) No 348/2013 ,(EU) No 895/2014 and (EU) No. 2017/999 (Annex XIV of EC No 1907/2006) and candidate list by European Chemical Agency (ECHA), according to the EU Court of Justice rules on SVHCs in articles (Guidance on requirements for substances in articles, June 2017)</p> <p>2. Total Cadmium Content</p> <p>3. Organotin compounds content</p> <p>4. Polycyclic aromatic hydrocarbons (PAHs)</p> <p>5. Short Chain Chlorinated Paraffin (SCCP)</p> <p>6. Packaging Waste Heavy Metal Test - 94/62/EC</p> <p>7. Hexabromocyclododecane</p> | <p>Please refer to result page</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> <p>PASS</p> |
|---|--|

Other information:

Ratings: 10A 250VAC 50/60Hz

Remark: Please be kindly informed all data refer to 0244152831b1 001

For and on behalf of
TÜV Rheinland (Shanghai) Co., Ltd.

Chartting Cai

2019-08-12

Chartting Cai / Project Engineer

Date

Name/Position

Test result is drawn according to the kind and extent of tests performed.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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Material List:
Item: Smart Plug
SP-EUC01

| Material No. | Material | Color | Location |
|--------------|--------------------|-------------|----------------|
| M001 | Plastic | white | refer to photo |
| M002 | Plastic | white | refer to photo |
| M003 | Plastic | beige | refer to photo |
| M004 | Metal | golden | refer to photo |
| M005 | Metal | golden | refer to photo |
| M006 | Metal | silver | refer to photo |
| M007 | Metal | silver | refer to photo |
| M008 | Metal | silver | refer to photo |
| M009 | Solder | silver | refer to photo |
| M010 | Plastic | black+white | refer to photo |
| M011 | Plastic | black | refer to photo |
| M012 | Metal | golden | refer to photo |
| M013 | Ceramic | green | refer to photo |
| M014 | Ceramic | blue | refer to photo |
| M015 | Ceramic | grey | refer to photo |
| M016 | Metal | silver | refer to photo |
| M017 | PCB board | black | refer to photo |
| M018 | Plastic | black | refer to photo |
| M019 | Metal | golden | refer to photo |
| M020 | Plastic | black | refer to photo |
| M021 | Magnet | black | refer to photo |
| M022 | Metal | copper | refer to photo |
| M023 | Glue | white | refer to photo |
| M024 | Plastic + printing | black+grey | refer to photo |
| M025 | Plastic | brown | refer to photo |
| M026 | Plastic | white | refer to photo |
| M027 | Metal | silver | refer to photo |
| M028 | Metal | silver | refer to photo |

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| | | | |
|------|--|-------------|----------------|
| M029 | PCB board | black | refer to photo |
| M030 | Plastic | black | refer to photo |
| M031 | Plastic | black | refer to photo |
| M032 | Metal | golden | refer to photo |
| M033 | Metal | silver | refer to photo |
| M034 | Metal | silver | refer to photo |
| M035 | Plastic + printing + paper + adhesive | black+white | refer to photo |
| M036 | Plastic | transparent | refer to photo |
| M037 | Plastic | white | refer to photo |
| M038 | Plastic | white | refer to photo |
| M039 | Metal | silver | refer to photo |
| M040 | Glue | white | refer to photo |
| M041 | Paper + printing | white+black | refer to photo |
| M042 | Paper + printing | multicolour | refer to photo |
| M043 | Paper + printing | multicolour | refer to photo |
| M044 | Paper + printing | blue+white | refer to photo |

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1. **Screening of substances of very high concern (SVHC) subject to authorisation, according to (EU) No 143/2011, (EU) No 125/2012, (EU) No 348/2013, (EU) No 895/2014 and (EU) No. 2017/999 (Annex XIV of EC No 1907/2006) and candidate list by European Chemical Agency (ECHA), according to the EU Court of Justice rules on SVHCs in articles.**

Product Classification

With reference to Corrigendum to Regulation (EC) no.1907/2006 and ECHA, this product is classified as:

- Article
 Article with an integral substance/ mixture
 Combinations of an article (functioning as a container or a carrier material) and a substance/ mixture
 Substance/ mixture

Conclusion:

| Conclusion | | | |
|-------------------------|---|--|-----------------------------|
| Product Location | Acc. to authorisation list (EU) No 143/2011, (EU) No 125/2012, (EU) No 348/2013, (EU) No 895/2014 and (EU) No. 2017/999 (Annex XIV of EC No 1907/2006) and candidate list by ECHA, and the EU Court of Justice rules on SVHCs in articles, the detected SVHC concentration in components level is | Obligation of Importer (*) (For article) | Detected Substance (if any) |
| All parts of Smart Plug | <0.1% | Not necessary | - |

(For article)

(*) To communicate information down the supply chain according to article. 33 of REACH. **OR**

- Notification to ECHA, if the quantities of SVHC in the produced/imported articles are above 1 ton in total per year per company.
- Provide sufficient information to ensure safe use of the article and, as a minimum, include the name of the substance, to their customers and on request to consumers within 45 days of the receipt of this request.

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Test Results

Screening of substances of very high concern (SVHC) subject to authorisation, according to (EU) No 143/2011, (EU) No 125/2012, (EU) No 348/2013, (EU) No 895/2014 and (EU) No. 2017/999 (Annex XIV of EC No 1907/2006) and candidate list by European Chemical Agency (ECHA), according to the EU Court of Justice rules on SVHCs in articles.

Test Method: 1) Test portion is digested with acid and assisted with microwave, the elements are analysed by ICP-OES.
2) Test portion is extracted by organic solvent, semi-quantitative analysis by GC-MS / UV-Vis.
3) Test portion is extracted by organic solvent, the extraction solution is analyzed by Headspace-GC/MS / LC-DAD-MS / LC-MS/MS.

| | | | |
|---------------|--|--|--|
| Test No.: | T001 | T002 | T003 |
| Material No.: | M001 + M002 + M003 + M010 + M018 + M026 + M030 + M031 + M037 + M038 | M011 + M020 + M024 + M025 + M035 + M036 | M004 + M005 + M006 + M007 + M008 + M012 + M016 + M019 + M022 + M027 |
| Result (%) | n.d. | n.d. | n.d. |
| Test No.: | T004 | T005 | T006 |
| Material No.: | M028 + M032 + M033 + M034 + M039 | M009 | M013 + M014 + M015 |
| Result (%) | n.d. | Lead:0.02 | n.d. |
| Test No.: | T007 | T008 | T009 |
| Material No.: | M021 | M017 + M029 | M023 + M040 |
| Result (%) | n.d. | n.d. | D4: 0.01% D5: 0.01% D6: 0.04% |

Abbreviation: n.d. =Not Detected (< Reporting Limit)
RL =Reporting Limit
% =Percentage

Remark:

(*1) The reporting limit for each individual SVHC subject to authorisation according to (EU) No 143/2011, (EU) No 125/2012, (EU) No 348/2013, (EU) No 895/2014 and (EU) No. 2017/999 (Annex XIV of EC No 1907/2006):

| | Substance | CAS No. | Reporting Limit |
|----|--|--|-----------------|
| 1 | 4,4'- Diaminodiphenylmethane (MDA) | 101-77-9 | 0.01% |
| 2 | Benzyl butyl phthalate (BBP) | 85-68-7 | 0.01% |
| 3 | Bis (2-ethylhexyl)phthalate (DEHP) | 117-81-7 | 0.01% |
| 4 | Dibutyl phthalate (DBP) | 84-74-2 | 0.01% |
| 5 | Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane | 25637-99-4 / 3194-55-6 / 134237-50-6 / 134237-51-7 / 134237-52-8 | 0.01% |
| 6 | 5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene) | 81-15-2 | 0.01% |
| 7 | 2,4-Dinitrotoluene (2,4-DNT) | 121-14-2 | 0.01% |
| 8 | Diisobutyl phthalate (DIBP) | 84-69-5 | 0.01% |
| 9 | Tris(2-chloroethyl)phosphate | 115-96-8 | 0.01% |
| 10 | Diarsenic pentaoxide (*3) | 1303-28-2 | 0.01% |

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|----|--|---------------------------|-------|
| 11 | Diarsenic trioxide (*3) | 1327-53-3 | 0.01% |
| 12 | Lead chromate (*3)(*4) | 7758-97-6 | 0.01% |
| 13 | Lead chromate molybdate sulphate red (C.I. Pigment Red 104) (*3)(*4) | 12656-85-8 | 0.01% |
| 14 | Lead sulfochromate yellow (C.I. Pigment Yellow 34) (*3) | 1344-37-2 | 0.01% |
| 15 | Trichloroethylene | 79-01-6 | 0.01% |
| 16 | Chromium trioxide (*4) | 1333-82-0 | 0.01% |
| 17 | Acids generated from chromium trioxide and their oligomers: Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid. (*4) | 7738-94-5 / 13530-68-2 | 0.01% |
| 18 | Sodium dichromate (*3) | 7789-12-0 / 10588-01-9 | 0.01% |
| 19 | Potassium dichromate (*4) | 7778-50-9 | 0.01% |
| 20 | Ammonium dichromate (*4) | 7789-09-5 | 0.01% |
| 21 | Potassium chromate (*4) | 7789-00-6 | 0.01% |
| 22 | Sodium chromate (*4) | 7775-11-3 | 0.01% |
| 23 | Formaldehyde, oligomeric reaction products with aniline (technical MDA) (*11) | 25214-70-4 | 0.01% |
| 24 | 1,2-Dichloroethane | 107-06-2 | 0.01% |
| 25 | Bis(2-methoxyethyl) ether | 111-96-6 | 0.01% |
| 26 | Arsenic acid (*3) | 7778-39-4 | 0.01% |
| 27 | 2,2'-dichloro-4,4'-methylenedianiline (MOCA) | 101-14-4 | 0.01% |
| 28 | Dichromium tris(chromate) (*4) | 24613-89-6 | 0.01% |
| 29 | Strontium chromate (*4) | 7789-06-2 | 0.01% |
| 30 | Potassium hydroxyoctaoxodizincatedichromate (*4) | 11103-86-9 | 0.01% |
| 31 | Pentazinc chromate octahydroxide (*4) | 49663-84-5 | 0.01% |
| 32 | 1-bromopropane (n-propyl bromide) | 106-94-5 | 0.01% |
| 33 | Diisopentylphthalate | 605-50-5 | 0.01% |
| 34 | 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) | 71888-89-6 | 0.01% |
| 35 | 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) | 68515-42-4 | 0.01% |
| 36 | 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear | 84777-06-0 | 0.01% |
| 37 | Bis(2-methoxyethyl) phthalate | 117-82-8 | 0.01% |
| 38 | Dipentyl phthalate (DPP) | 131-18-0 | 0.01% |
| 39 | N-pentyl-isopentylphthalate | 776297-69-9 | 0.01% |
| 40 | Anthracene oil (*7) | 90640-80-5 | 0.01% |
| 41 | Pitch, coal tar, high temperature (*7) | 65996-93-2 | 0.01% |
| 42 | 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated (OPEO) <i>[covering well-defined substances and UVCB substances, polymers and homologues]</i> | - | 0.01% |
| 43 | 4-Nonylphenol, branched and linear <i>[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]</i> | - | 0.01% |

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(*2) The reporting limit for each individual SVHC in Candidate List by ECHA:

| | Substance | CAS No. | Reporting Limit |
|----|--|------------------------------------|-----------------|
| 44 | Anthracene | 120-12-7 | 0.01% |
| 45 | Bis(tributyltin) oxide (TBTO) (*3) (*5) | 56-35-9 | 0.01% |
| 46 | Triethyl arsenate (*3) | 15606-95-8 | 0.01% |
| 47 | Lead hydrogen arsenate (*3) | 7784-40-9 | 0.01% |
| 48 | Cobalt dichloride (*3) | 7646-79-9 | 0.01% |
| 49 | Acrylamide | 79-06-1 | 0.01% |
| 50 | Anthracene oil, anthracene paste, distn. lights (*7) | 91995-17-4 | 0.01%(*8) |
| 51 | Anthracene oil, anthracene paste, anthracene fraction (*7) | 91995-15-2 | |
| 52 | Anthracene oil, anthracene-low (*7) | 90640-82-7 | |
| 53 | Anthracene oil, anthracene paste (*7) | 90640-81-6 | |
| 54 | Boric acid (*3) (*6) | 10043-35-3 / 11113-50-1 | 0.01% |
| 55 | Disodium tetraborate, anhydrous (*3) (*6) | 1303-96-4 / 1330-43-4 / 12179-04-3 | 0.01% |
| 56 | Tetraboron disodium heptaoxide, hydrate (*3) (*6) | 12267-73-1 | 0.01% |
| 57 | 2-Methoxyethanol | 109-86-4 | 0.01% |
| 58 | 2-Ethoxyethanol | 110-80-5 | 0.01% |
| 59 | Cobalt(II) sulphate (*3) | 10124-43-3 | 0.01% |
| 60 | Cobalt(II) dinitrate (*3) | 10141-05-6 | 0.01% |
| 61 | Cobalt(II) carbonate (*3) | 513-79-1 | 0.01% |
| 62 | Cobalt(II) diacetate (*3) | 71-48-7 | 0.01% |
| 63 | Alkanes C10-C13, chloro (Short Chain Chlorinated Paraffins) (SCCP) | 85535-84-8 | 0.01% |
| 64 | 2-Ethoxyethyl acetate | 111-15-9 | 0.01% |
| 65 | Hydrazine | 302-01-2 / 7803-57-8 | 0.01% |
| 66 | 1-Methyl-2-pyrrolidone (NMP) | 872-50-4 | 0.01% |
| 67 | 1,2,3-Trichloropropane | 96-18-4 | 0.01% |
| 68 | Aluminosilicate Refractory Ceramic Fibres (RCF) (*9) | - | 0.01% |
| 69 | Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF) (*9) | - | 0.01% |
| 70 | 2-Methoxyaniline,o-Anisidine | 90-04-0 | 0.01% |
| 71 | 4-(1,1,3,3-tetramethylbutyl)phenol | 140-66-9 | 0.01% |
| 72 | Calcium arsenate (*3) | 7778-44-1 | 0.01% |
| 73 | Trilead diarsenate (*3) | 3687-31-8 | 0.01% |
| 74 | N,N-dimethylacetamide (DMAC) | 127-19-5 | 0.01% |
| 75 | Phenolphthalein | 77-09-8 | 0.01% |
| 76 | Lead dipicrate (*3) | 6477-64-1 | 0.01% |
| 77 | Lead diazide, Lead azide (*3) | 13424-46-9 | 0.01% |
| 78 | Lead styphnate (*3) | 15245-44-0 | 0.01% |
| 79 | 1,2-bis(2-methoxyethoxy)ethane (TEGDME, triglyme) | 112-49-2 | 0.01% |
| 80 | 1,2-dimethoxyethane, ethylene glycol dimethyl ether (EGDME) | 110-71-4 | 0.01% |
| 81 | Diboron trioxide (*3) (*6) | 1303-86-2 | 0.01% |
| 82 | Formamide | 75-12-7 | 0.01% |
| 83 | Lead(II) bis(methanesulfonate) (*3) | 17570-76-2 | 0.01% |

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| 84 | 1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) | 2451-62-9 | 0.01% |
| 85 | 1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC) | 59653-74-6 | |
| 86 | 4,4'-bis(dimethylamino)benzophenone (Michler's ketone), MK | 90-94-8 | 0.01% |
| 87 | N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base), RMK | 101-61-1 | 0.01% |
| 88 | [4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (*10) | 2580-56-5 | 0.01% |
| 89 | [4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (*10) | 548-62-9 | |
| 90 | 4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (*10) | 561-41-1 | |
| 91 | α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (*10) | 6786-83-0 | 0.01% |
| 92 | Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE) | 1163-19-5 | 0.01% |
| 93 | Pentacosafuorotridecanoic acid | 72629-94-8 | 0.01% |
| 94 | Tricosafuorododecanoic acid | 307-55-1 | 0.01% |
| 95 | Henicosafuoroundecanoic acid | 2058-94-8 | 0.01% |
| 96 | Heptacosafuorotetradecanoic acid | 376-06-7 | 0.01% |
| 97 | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA) (*12) | 123-77-3 | 0.05% |
| 98 | Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry] | 85-42-7 / 13149-00-3 / 14166-21-3 | 0.01% |
| 99 | Hexahydromethylphthalic anhydride (MHHPA) [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry] | 25550-51-0 / 19438-60-9 / 48122-14-1 / 57110-29-9 | 0.01% |
| 100 | N,N-dimethylformamide | 68-12-2 | 0.01% |
| 101 | 1,2-Diethoxyethane | 629-14-1 | 0.01% |
| 102 | Diethyl sulphate | 64-67-5 | 0.01% |
| 103 | Methoxyacetic acid (MAA) | 625-45-6 | 0.01% |
| 104 | Dimethyl sulphate | 77-78-1 | 0.01% |
| 105 | N-methylacetamide | 79-16-3 | 0.01% |
| 106 | Furan | 110-00-9 | 0.01% |
| 107 | Methyloxirane (Propylene oxide) | 75-56-9 | 0.01% |
| 108 | 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine | 143860-04-2 | 0.01% |
| 109 | Dibutyltin dichloride (DBTC) (*3) | 683-18-1 | 0.01% |
| 110 | Dinoseb (6-sec-butyl-2,4-dinitrophenol) | 88-85-7 | 0.01% |
| 111 | 4,4'-methylenedi-o-toluidine | 838-88-0 | 0.01% |
| 112 | 4,4'-oxydianiline and its salts | 101-80-4 | 0.01% |
| 113 | 4-Aminoazobenzene | 60-09-3 | 0.01% |
| 114 | 4-methyl-m-phenylenediamine (toluene-2,4-diamine) | 95-80-7 | 0.01% |
| 115 | 6-methoxy-m-toluidine (p-cresidine) | 120-71-8 | 0.01% |
| 116 | Biphenyl-4-ylamine | 92-67-1 | 0.01% |
| 117 | o-aminoazotoluene | 97-56-3 | 0.01% |

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| 118 | o-Toluidine | 95-53-4 | 0.01% |
| 119 | Acetic acid, lead salt, basic (*3) | 51404-69-4 | 0.01% |
| 120 | Trilead bis(carbonate) dihydroxide (*3) | 1319-46-6 | 0.01% |
| 121 | Lead oxide sulfate (*3) | 12036-76-9 | 0.01% |
| 122 | [Phthalato(2-)]dioxotrilead (*3) | 69011-06-9 | 0.01% |
| 123 | Dioxobis(stearato)trilead (*3) | 12578-12-0 | 0.01% |
| 124 | Fatty acids, C16-18, lead salts (*3) | 91031-62-8 | 0.01% |
| 125 | Lead bis(tetrafluoroborate) (*3) | 13814-96-5 | 0.01% |
| 126 | Lead cyanamidate (*3) | 20837-86-9 | 0.01% |
| 127 | Lead dinitrate (*3) | 10099-74-8 | 0.01% |
| 128 | Lead monoxide (lead oxide) (*3) | 1317-36-8 | 0.01% |
| 129 | Orange lead (lead tetroxide) (*3) | 1314-41-6 | 0.01% |
| 130 | Lead titanium trioxide (*3) | 12060-00-3 | 0.01% |
| 131 | Lead titanium zirconium oxide (*3) | 12626-81-2 | 0.01% |
| 132 | Pyrochlore, antimony lead yellow (*3) | 8012-00-8 | 0.01% |
| 133 | Pentalead tetraoxide sulphate (*3) | 12065-90-6 | 0.01% |
| 134 | Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped <i>[with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD), the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]</i> (*3) | 68784-75-8 | 0.01% |
| 135 | Silicic acid, lead salt (*3) | 11120-22-2 | 0.01% |
| 136 | Sulfurous acid, lead salt, dibasic (*3) | 62229-08-7 | 0.01% |
| 137 | Tetraethyllead (*3) | 78-00-2 | 0.01% |
| 138 | Tetralead trioxide sulphate (*3) | 12202-17-4 | 0.01% |
| 139 | Trilead dioxide phosphonate (*3) | 12141-20-7 | 0.01% |
| 140 | Ammonium pentadecafluorooctanoate (APFO) (*13) | 3825-26-1 | 0.01% |
| 141 | Pentadecafluorooctanoic acid (PFOA) | 335-67-1 | 0.01% |
| 142 | Cadmium (*3) | 7440-43-9 | 0.01% |
| 143 | Cadmium oxide (*3) | 1306-19-0 | 0.01% |
| 144 | 4-Nonylphenol, branched and linear, ethoxylated (NPEO) <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> | - | 0.01% |
| 145 | Dihexyl phthalate | 84-75-3 | 0.01% |
| 146 | Trixylyl phosphate | 25155-23-1 | 0.01% |
| 147 | Imidazolidine-2-thione; (2-imidazoline-2-thiol) | 96-45-7 | 0.01% |
| 148 | Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-minonaphthalene-1-sulphonate) (C.I. Direct Red 28) | 573-58-0 | 0.01% |
| 149 | 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 | 0.01% |
| 150 | Lead di(acetate) (*3) | 301-04-2 | 0.01% |
| 151 | Cadmium sulphide (*3) | 1306-23-6 | 0.01% |
| 152 | 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear | 68515-50-4 | 0.01% |
| 153 | Cadmium chloride (*3) | 10108-64-2 | 0.01% |
| 154 | Sodium perborate,perboric acid, sodium salt (*3) (*6) | - | 0.01% |
| 155 | Sodium peroxometaborate (*3) (*6) | 7632-04-4 | 0.01% |
| 156 | Cadmium fluoride (*3) | 7790-79-6 | 0.01% |
| 157 | Cadmium sulphate (*3) | 10124-36-4 / 31119-53-6 | 0.01% |
| 158 | 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) | 3846-71-7 | 0.01% |
| 159 | 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) | 25973-55-1 | 0.01% |
| 160 | 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) (*14) | 15571-58-1 | 0.01% |

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| | | | |
|-----|---|-------------------------------------|-------|
| 161 | 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) (*15) | - | 0.01% |
| 162 | 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5) | 68515-51-5 / 68648-93-1 | 0.01% |
| 163 | 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] | - | 0.01% |
| 164 | 1,3-propanesultone | 1120-71-4 | 0.01% |
| 165 | 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) | 3864-99-1 | 0.01% |
| 166 | 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) | 36437-37-3 | 0.01% |
| 167 | Nitrobenzene | 98-95-3 | 0.01% |
| 168 | Perfluorononan-1-oic-acid and its sodium and ammonium salts | 375-95-1 21049-39-8 4149-60-4 | 0.01% |
| 169 | Benzo[def]chrysene (Benzo[a]pyrene) | 50-32-8 | 0.01% |
| 170 | 4,4'-isopropylidenediphenol (bisphenol A) | 80-05-7 | 0.01% |
| 171 | Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts | 335-76-2 3830-45-3 3108-42-7 | 0.01% |
| 172 | 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] | - | 0.01% |
| 173 | p-(1,1-dimethylpropyl)phenol | 80-46-6 | 0.01% |
| 174 | Perfluorohexane-1-sulfonic acid and its salts (PFHxS) | - | 0.01% |
| 175 | Chrysene | 218-01-9 | 0.01% |
| 176 | Benzo[a]anthracene | 56-55-3 | 0.01% |
| 177 | Cadmium nitrate(*3) | 10325-94-7 | 0.01% |
| 178 | Cadmium hydroxide(*3) | 21041-95-2 | 0.01% |
| 179 | Cadmium carbonate(*3) | 513-78-0 | 0.01% |
| 180 | 1,6,7,8,9,14,15,16,17,17,18,18- Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof] | - | 0.01% |
| 181 | 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] | - | 0.01% |
| 182 | Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride, TMA) | 552-30-7 | 0.01% |
| 183 | Dicyclohexyl phthalate (DCHP) | 84-61-7 | 0.01% |
| 184 | Terphenyl, hydrogenated | 61788-32-7 | 0.01% |
| 185 | Octamethylcyclotetrasiloxane (D4) | 556-67-2 | 0.01% |
| 186 | Decamethylcyclopentasiloxane (D5) | 541-02-6 | 0.01% |
| 187 | Dodecamethylcyclohexasiloxane (D6) | 540-97-6 | 0.01% |
| 188 | Ethylenediamine (EDA) | 107-15-3 | 0.01% |
| 189 | Lead | 7439-92-1 | 0.01% |
| 190 | Disodium octaborate (*3) | 12008-41-2 | 0.01% |
| 191 | Benzo[ghi]perylene | 191-24-2 | 0.01% |
| 192 | 2,2-bis(4'-hydroxyphenyl)-4-methylpentane | 6807-17-6 | 0.01% |
| 193 | Benzo[k]fluoranthene | 207-08-9 | 0.01% |
| 194 | Fluoranthene | 206-44-0 | 0.01% |
| 195 | Phenanthrene | 85-01-8 | 0.01% |
| 196 | Pyrene | 129-00-0 | 0.01% |
| 197 | 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan- 2-one | 15087-24-8 | 0.01% |

Remark:

- (*3) The substances are tested and calculated in terms of its respective elements and to the worst-case scenario. And the elements may come from the compounds other than SVHCs.
- (*4) The substances are tested and calculated in terms of Cr (VI).
- (*5) The substance is tested and calculated in terms of Tributyl tin.
- (*6) The substances are confirmed and tested in terms of borate. Boric acid, Disodium tetraborate, anhydrous, Tetraboron disodium heptaoxide, hydrate and Diboron trioxide, Sodium perborate, perboric acid, sodium salt, Sodium peroxometaborate are detected as sum of boric acid. And the borate may come from the compounds other than SVHCs.
- (*7) The substances are UVCB (substance of unknown or variable composition, complex reaction products or biological materials), which are identified by its main constituents.
- (*8) Individual concentrations to the constituent of UVCB with an amount of < 0.01% were not considered by the calculation of the sum.
- (*9) The test results are based on microscopic and chemical evaluation.
- (*10) The substances are quantified in terms of Michler's ketone and Michler's base by LC-MS, as Michler's ketone or Michler's base was found exceeds 0.01%.
- (*11) The content oligomer is determined by Py-GC/MS.
- (*12) The content of diazene-1,2-dicarboxamide is analyzed in terms of its breakdown product.
- (*13) The substance is tested in terms of pentadecafluorooctanoate.
- (*14) The substance is tested and calculated in terms of Dioctyl tin.
- (*15) The substance is tested and calculated in terms of Monoctyl tin and Dioctyl tin.

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2.Total Cadmium Content

Test Method: For plastic: EN 1122:2001 (method B)
For metal and other material: Acid digestion, analyzed by AAS/ ICP-OES

Test Result:

| Test No. | Material No. | Test Parameter | Unit | RL | Regulatory Requirement | Test Result |
|----------|--------------------------|----------------|-------|----|------------------------|-------------|
| T001 | M001 + M002 + M003 | Trial 1 | mg/kg | 10 | 100 | n.d. |
| | | Trial 2 | mg/kg | 10 | 100 | n.d. |
| | | Average | mg/kg | 10 | 100 | n.d. |
| T002 | M010 + M018 + M026 | Trial 1 | mg/kg | 10 | 100 | n.d. |
| | | Trial 2 | mg/kg | 10 | 100 | n.d. |
| | | Average | mg/kg | 10 | 100 | n.d. |
| T003 | M030 + M031 | Trial 1 | mg/kg | 10 | 100 | n.d. |
| | | Trial 2 | mg/kg | 10 | 100 | n.d. |
| | | Average | mg/kg | 10 | 100 | n.d. |
| T004 | M037 + M038 | Trial 1 | mg/kg | 10 | 100 | n.d. |
| | | Trial 2 | mg/kg | 10 | 100 | n.d. |
| | | Average | mg/kg | 10 | 100 | n.d. |
| T005 | M011 + M020 + M024 | Trial 1 | mg/kg | 10 | 100 | n.d. |
| | | Trial 2 | mg/kg | 10 | 100 | n.d. |
| | | Average | mg/kg | 10 | 100 | n.d. |
| T006 | M025 + M035 + M036 | Trial 1 | mg/kg | 10 | 100 | n.d. |
| | | Trial 2 | mg/kg | 10 | 100 | n.d. |
| | | Average | mg/kg | 10 | 100 | n.d. |

Abbreviation: n.d. = not detected (< Reporting Limit)
RL = Reporting Limit
mg/kg = milligram per kilogram

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Remark:

*Regulations on Cadmium

| | | Maximum Permissible Limit | | | | |
|----|--|---------------------------|-------------------|-------------------------------|---------------------------|--|
| EU | Legislation | Plastic materials | Paint (wet state) | Paint on the painted articles | Paint (high zinc content) | Metal parts of jewellery and imitation jewellery articles and hair accessories |
| EC | REACH regulation (EC) No. 1907/2006 Annex XVII Item 23 and its amendments (EC) No. 552/2009, (EU) No. 494/2011, (EU) No. 835/2012 and (EU) No. 217/2016. | 100mg/kg | 100mg/kg | 1000mg/kg | 1000mg/kg | 100mg/kg |

| | | Maximum Permissible Limit |
|-------------|--|---|
| Country | Legislation | Paint, plastic, plating/ coating of surface treatment |
| Switzerland | Switzerland Chemikalien-Risikoreduktions-Verordnung-ChemRRV, 814.81, 18 May 2005 | 100mg/kg |

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3.Organotin compounds content

 Test Method: Organic solvent extraction, GCMS
 Ref. to ISO/TS 16179:2012

| Test No. | | | | T001 |
|---|------|------|------------------------|--------------------------|
| Material No. | | | | M001 + M002 + M026 |
| Test Parameter | Unit | RL | Regulatory Requirement | Result |
| TBT(Tributyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |
| TPT(Triphenyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |
| TOT(Trioctyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |
| TCyT(Tricyclohexyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |
| TPrT(Tripropyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |
| DBT(Dibutyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |
| DOT(Dioctyltin) by weight of tin | % | 0.01 | 0.1 | n.d. |

Abbreviation: n.d. = not detected (< Reporting Limit)
 RL = Reporting Limit
 % = percentage
 NA = Not Applicable

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Remark:

- * Single components with an amount of <0.01% were not considered in the calculation of the sum. In the case of all five tri-substituted organotin compounds, the result is stated n.d.
- ** The assessment for tri-substituted organotin compounds is based on the sum of TBT, TPT, TOT, TCyT and TPrT by weight of tin only.
- *** According to REACH Regulation (EC) No. 1907/2006 Annex XVII Entry 20 and amendment Commission Regulation (EU) No. 276/2010 (formerly known as 2009/425/EC), organotin compounds shall not be used or be placed on the market.

| Type of organotin compounds | Maximum Permissible Limit | Implementation date |
|--|---------------------------|--|
| Tri-substituted organotin compounds, e.g. tributyltin (TBT) compounds and triphenyltin (TPT) compounds | 0.1 % by weight of tin | 1 July 2010 |
| Dibutyltin (DBT) compounds in mixtures and articles for supply to the general public | 0.1 % by weight of tin | 1 January 2012 The below products will not be applicable until 1 January 2015: - one-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) and adhesives, - paints and coatings containing DBT compounds as catalysts when applied on articles, - soft polyvinyl chloride (PVC) profiles whether by themselves or coextruded with hard PVC, - fabrics coated with PVC containing DBT compounds as stabilisers when intended for outdoor applications, - outdoor rainwater pipes, gutters and fittings, as well as covering material for roofing and facades |
| Dioctyltin (DOT) compounds - textile articles intended to come into contact with the skin, - gloves, - footwear or part of footwear intended to come into contact with the skin, - wall and floor coverings - childcare articles, - female hygiene products, - nappies, - two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits) | 0.1 % by weight of tin | 1 January 2012 |

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4. Polycyclic aromatic hydrocarbons (PAHs)

Test Method: Organic solvent extraction, GCMS

| | | | | | Test No. | T001 |
|---|----------|-------|-----|------------------------|--------------|--------------------------|
| | | | | | Material No. | M001 + M002 + M026 |
| Test Parameter | CAS NO | Unit | RL | Regulatory Requirement | Result | |
| Benzo[a]anthracene (BaA) | 56-55-3 | mg/kg | 0.2 | 1 | n.d. | |
| Benzo[a]pyrene (BaP) | 50-32-8 | mg/kg | 0.2 | 1 | n.d. | |
| Benzo[b]fluoranthene (BbFA) | 205-99-2 | mg/kg | 0.2 | 1 | n.d. | |
| Benzo[k]fluoranthene (BkFA) | 207-08-9 | mg/kg | 0.2 | 1 | n.d. | |
| Benzo[j]fluoranthene (BjFA) | 205-82-3 | mg/kg | 0.2 | 1 | n.d. | |
| Benzo[e]pyrene (BeP) | 192-97-2 | mg/kg | 0.2 | 1 | n.d. | |
| Chrysene (CHR) | 218-01-9 | mg/kg | 0.2 | 1 | n.d. | |
| Dibenzo[a,h]anthracene (DBA _h A) | 53-70-3 | mg/kg | 0.2 | 1 | n.d. | |

Abbreviation: n.d. = Not Detected (< Reporting Limit)
 RL = Reporting Limit
 NA = Not Applicable
 mg/kg = milligram per kilogram

Remark:

* Requirement according to REACH regulation (EC) No. 1907/2006 with Amendment No. 552/2009 Annex XVII Item No. 50 and (EU) No.1272/2013, are summarized as below:

| Scope | Parameter | Unit | Maximum permissible limit |
|---|-----------------------|-------|---------------------------|
| Articles with direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, made of plastic and rubber shall follow below limit: | | | |
| Such articles include amongst others: ---sport equipment such as bicycles, golf clubs, racquets ---household utensils, trolleys, walking frames --- tools for domestic use --- clothing, footwear, gloves and sportswear ---watch-straps, wrist-bands, masks, head-bands | Each of 8 listed PAHs | mg/kg | 1 |
| Toys, including activity toys, and childcare articles | Each of 8 listed PAHs | mg/kg | 0.5 |

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5.Short Chain Chlorinated Paraffin (SCCP)

Test Method: Leather material: ISO 18219: 2015
Non-leather materials: CADS method

Test result:

| Test No. | Material No. | Test Parameter | Unit | RL | Regulatory Requirement | Result |
|----------|-----------------------|----------------|-------|-----|------------------------|--------|
| T001 | M011 + M020 + M024 | SCCP | mg/kg | 100 | 1500 | n.d. |
| T002 | M025 + M035 + M036 | SCCP | mg/kg | 100 | 1500 | n.d. |

Abbreviation: n.d. = not detected (< Reporting Limit)
 RL = Reporting Limit
 mg/kg = milligram per kilogram
 SCCP = Short Chain Chlorinated Paraffin C₁₀-C₁₃
 1% = 10000mg/kg

Remark:

* According to Commission Regulation (EU) No 2015/2030 amending Regulation (EC) No 850/2004 on persistent organic pollutants (POP Regulation) as regards Annex I:

| Alkanes C ₁₀ -C ₁₃ , chloro (short-chain chlorinated paraffins) (SCCPs) | Maximum Permissible Limit |
|---|---------------------------|
| The production , placing on the market and use of articles containing SCCPs | < 0.15% by weight |
| The production , placing on the market and use of substances or preparations containing SCCPs | < 1% by weight |

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6.Packaging Waste Heavy Metal Test - 94/62/EC

Test Method: Sample digestion, analyzed by ICP-OES / Ultraviolet Visible Spectrophotometer (UV-Vis)

Result:

| Test No. | Material No. | Test Parameters | Unit | RL | Regulatory Requirement | Result | Conclusion |
|----------|--------------|------------------------------|-------|----|------------------------|--------|------------|
| T001 | M041 | Pb | mg/kg | 10 | - | n.d. | - |
| | | Cd | mg/kg | 10 | - | n.d. | - |
| | | Cr (VI) | mg/kg | 10 | - | n.d. | - |
| | | Hg | mg/kg | 10 | - | n.d. | - |
| | | Sum of Pb, Cd, Cr(VI) and Hg | mg/kg | 10 | 100 | n.d. | Pass |
| T002 | M042 | Pb | mg/kg | 10 | - | n.d. | - |
| | | Cd | mg/kg | 10 | - | n.d. | - |
| | | Cr (VI) | mg/kg | 10 | - | n.d. | - |
| | | Hg | mg/kg | 10 | - | n.d. | - |
| | | Sum of Pb, Cd, Cr(VI) and Hg | mg/kg | 10 | 100 | n.d. | Pass |
| T003 | M043 | Pb | mg/kg | 10 | - | n.d. | - |
| | | Cd | mg/kg | 10 | - | n.d. | - |
| | | Cr (VI) | mg/kg | 10 | - | n.d. | - |
| | | Hg | mg/kg | 10 | - | n.d. | - |
| | | Sum of Pb, Cd, Cr(VI) and Hg | mg/kg | 10 | 100 | n.d. | Pass |
| T004 | M044 | Pb | mg/kg | 10 | - | n.d. | - |
| | | Cd | mg/kg | 10 | - | n.d. | - |
| | | Cr (VI) | mg/kg | 10 | - | n.d. | - |
| | | Hg | mg/kg | 10 | - | n.d. | - |
| | | Sum of Pb, Cd, Cr(VI) and Hg | mg/kg | 10 | 100 | n.d. | Pass |

Abbreviation: n.d. = not detected (< Reporting Limit)
 RL = Reporting Limit
 mg/kg = milligram per kilogram

Remark:

** According to "European Parliament and Council Directive 94/62/EC of 20 December 1994"; the maximum permissible limit of the sum of the concentration of Lead, Cadmium, Mercury and Hexavalent Chromium is 100ppm.

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7. Brominated Flame retardants- Hexabromocyclododecane (HBCDD)

Test Method: Organic solvent extraction, LC-MS/MS analysis

Test Result:

| Test No. | Material No. | Test Parameter | Unit | RL | Regulatory Requirement | Result |
|----------|--------------|-------------------------------------|-------|-----|------------------------|--------|
| T001 | M003 | 1,2,5,6,9,10-Hexabromocyclododecane | mg/kg | 100 | 100 | n.d. |
| T002 | M010 | 1,2,5,6,9,10-Hexabromocyclododecane | mg/kg | 100 | 100 | n.d. |
| T003 | M017 | 1,2,5,6,9,10-Hexabromocyclododecane | mg/kg | 100 | 100 | n.d. |
| T004 | M018 | 1,2,5,6,9,10-Hexabromocyclododecane | mg/kg | 100 | 100 | n.d. |
| T005 | M031 | 1,2,5,6,9,10-Hexabromocyclododecane | mg/kg | 100 | 100 | n.d. |
| T006 | M038 | 1,2,5,6,9,10-Hexabromocyclododecane | mg/kg | 100 | 100 | n.d. |

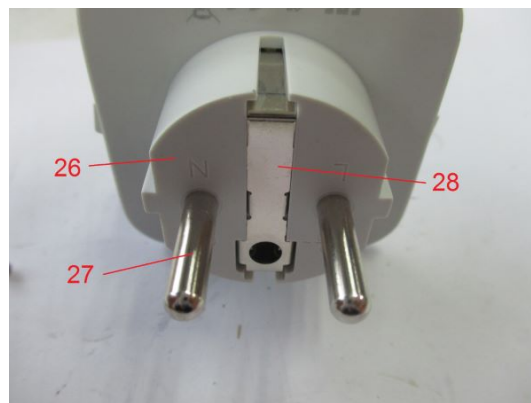
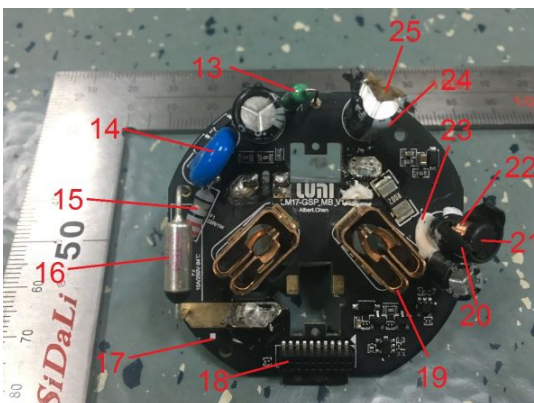
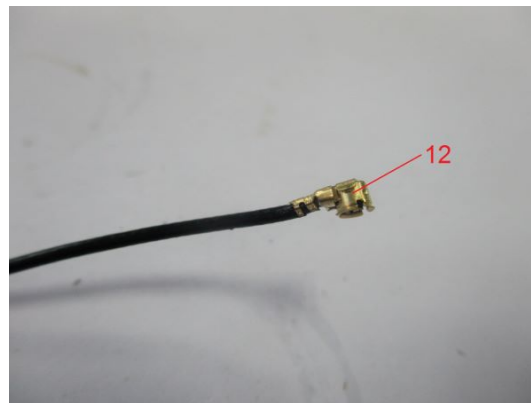
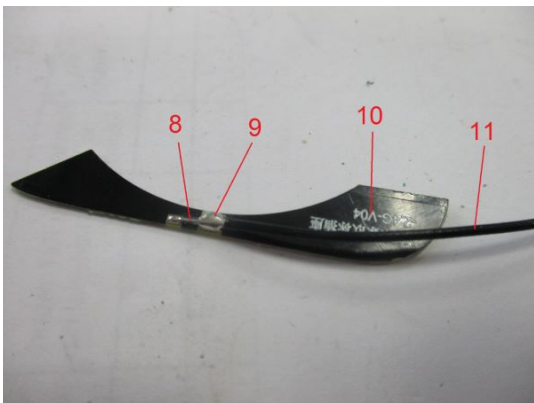
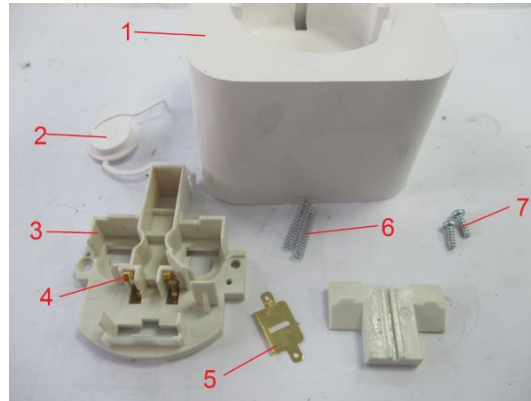
Abbreviations: n.d. = not detected (<Reporting Limit)
 RL = Reporting Limit
 mg/kg = milligram per kilogram

Remark:

* According to Commission Regulation (EU) No 2016/293 and Regulation (EC) No 850/2004 on persistent organic pollutants (POP Regulation) as regards Annex I:

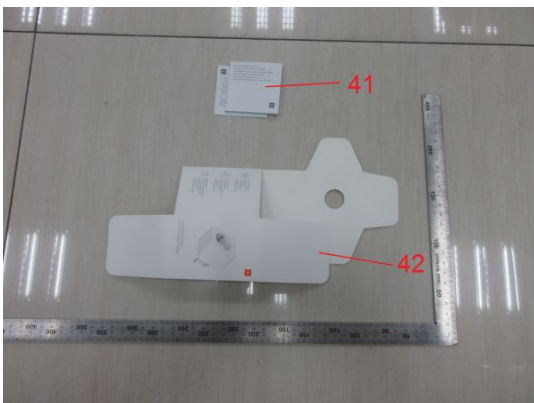
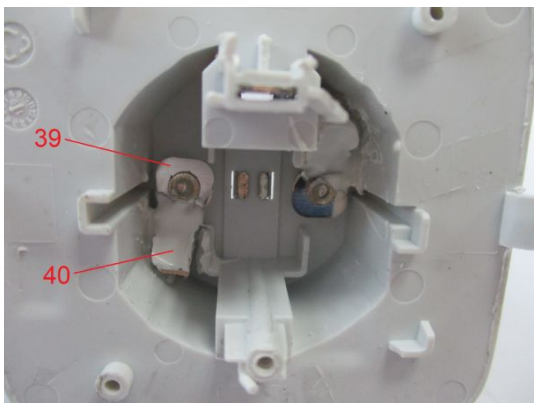
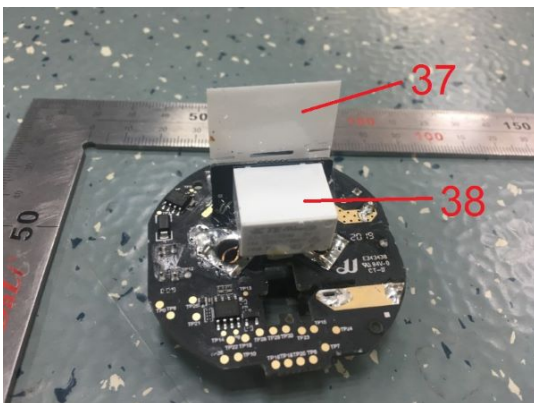
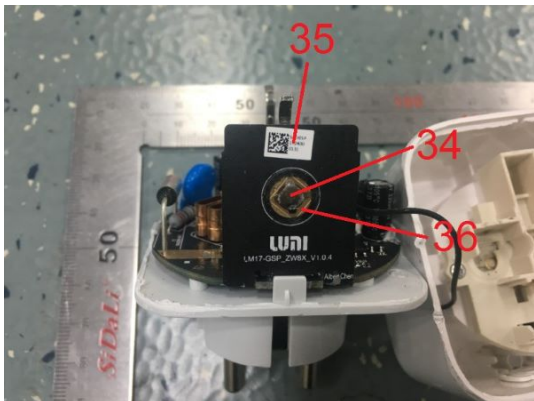
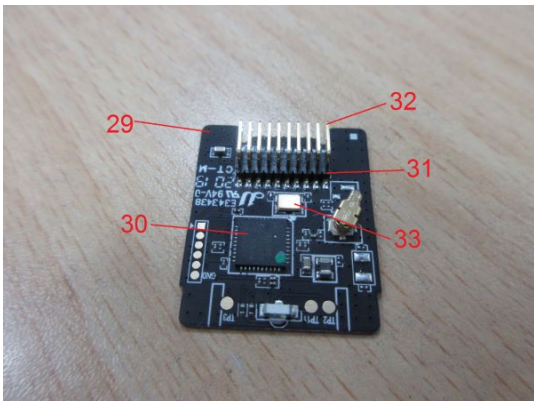
| Hexabromocyclododecane | Maximum Permissible Limit |
|--|---|
| In substances, preparations, articles or as constituents of the flame-retarded parts of articles | ≤ 100 mg/kg (0.01% by weight); subject to review by the Commission by 22 March 2019 |

Sample Photos



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Sample Photos



- END -

General Terms and Conditions of Business of TÜV Rheinland in Greater China

1. Scope

1.1 These General Terms and Conditions of Business of TÜV Rheinland in Greater China ("GTBC") is made between the client and one or more member entities of TÜV Rheinland in Greater China as applicable as the case may be ("TÜV Rheinland"). The Greater China hereof refers to Mainland China, Hong Kong and Taiwan. The client hereof includes :

(i) a natural person capable to form legally binding contracts under the applicable laws who concludes the contract not for the purpose of a daily use;

(ii) the incorporated or unincorporated entity duly organized, validly existing and capable to form legally binding contracts under the applicable law.

1.2 The following terms and conditions apply to agreed services including consultancy services, information, deliveries and similar services as well as ancillary services and other secondary obligations provided within the scope of contract performance.

1.3 Any standard terms and conditions of the client of any nature shall not apply and shall hereby be expressly excluded. No standard contractual terms and conditions of the client shall form part of the contract even if TÜV Rheinland does not explicitly object to them.

1.4 In the context of an ongoing business relationship with the client, this GTBC shall also apply to future contracts with the client without TÜV Rheinland having to refer to them separately in each individual case.

2. Quotations

Unless otherwise agreed, all quotations submitted by TÜV Rheinland can be changed by TÜV Rheinland without notice prior to its acceptance and confirmation by the other party.

3. Coming into effect and duration of contracts

3.1 The contract shall come into effect for the agreed terms upon the quotation letter of TÜV Rheinland or a separate contractual document being signed by both contracting parties, or upon the works requested by the client being carried out by TÜV Rheinland. If the client instructs TÜV Rheinland without receiving a quotation from TÜV Rheinland (quotation), TÜV Rheinland is, in its sole discretion, entitled to accept the order by giving written notice of such acceptance (including notice sent via electronic means) or by performing the requested services.

3.2 The contract term starts upon the coming into effect of the contract in accordance with article 3.1 and shall continue for the term agreed in the contract.

3.3 If the contract provides for an extension of the contract term, the contract term will be extended by the term provided for in the contract unless terminated in writing by either party with a six-week notice prior to the end of the contractual term.

4. Scope of services

4.1 The scope and type of the services to be provided by TÜV Rheinland shall be specified in the contractually agreed service scope of TÜV Rheinland by both parties. If no such separate service scope of TÜV Rheinland exists, then the written confirmation of order by TÜV Rheinland shall be decisive for the service to be provided.

4.2 The agreed services shall be performed in compliance with the regulations in force at the time the contract is entered into.

4.3 TÜV Rheinland is entitled to determine, in its sole discretion, the method and nature of the assessment unless otherwise agreed in writing or if mandatory provisions require a specific procedure to be followed.

4.4 On execution of the work there shall be no simultaneous assumption of any guarantee of the correctness (proper quality) and working order of either tested or examined parts nor of the installation as a whole and its upstream and/or downstream processes, organisations, - use and application in accordance with regulations, nor of the systems on which the installation is based. In particular, TÜV Rheinland shall assume no responsibility for the construction, selection of materials and assembly of installations examined, nor for their use and application in accordance with regulations, unless these questions are expressly covered by the contract.

4.5 In the case of inspection work, TÜV Rheinland shall not be responsible for the accuracy or checking of the safety programmes or safety regulations on which the inspections are based, unless otherwise expressly agreed in writing.

4.6 If mandatory legal regulations and standards or official requirements for the agreed service scope change after conclusion of the contract, with a written notice to the client, TÜV Rheinland shall be entitled to additional remuneration for resulting additional expenses.

4.7 The services to be provided by TÜV Rheinland under the contract are agreed exclusively with the client. A contract of third parties with the services of TÜV Rheinland, as well as making available of and justifying confidence in the work results (test reports, test results, expert reports, etc.) is not part of the agreed services. This also applies if the client passes on work results - in full or in extracts - to third parties in accordance with clause 11.4.

5. Performance periods/dates

5.1 The contractually agreed periods/dates of performance are based on estimates of the work involved which are prepared in line with the details provided by the client. They shall only be binding if being confirmed as binding by TÜV Rheinland in writing.

5.2 If binding periods of performance have been agreed, these periods shall not commence until the client has submitted all required documents to TÜV Rheinland.

5.3 Articles 5.1 and 5.2 also apply, even without express approval by the client, to all extensions of agreed periods/dates of performance not caused by TÜV Rheinland.

5.4 TÜV Rheinland is not responsible for a delay in performance, in particular if the client has not fulfilled his duties to cooperate in accordance with clause 6.1 or has not done so in time and, in particular, has not provided TÜV Rheinland with all documents and information required for the performance of the service as specified in the contract.

5.5 If the performance of TÜV Rheinland is delayed due to unforeseeable circumstances such as force majeure, strikes, business disruptions, governmental regulations, transport obstacles, etc., TÜV Rheinland is entitled to postpone performance for a reasonable period of time which corresponds at least to the duration of the hindrance plus any time period which may be required to resume performance.

6. The client's obligation to cooperate

6.1 The client shall guarantee that all cooperation required on its part, its agents or third parties will be provided in good time and at no cost to TÜV Rheinland.

6.2 Design documents, supplies, auxiliary staff, etc. necessary for performance of the services shall be made available for the client. Moreover, collaborative action of the client must be undertaken in accordance with legal provisions, standards, safety regulations and accident prevention instructions. And the client represents and warrants that:

- it has required statutory qualifications;
 - the product, service or management system to be certified complies with applicable laws and regulations; and
 - it doesn't have any illegal and dishonest behaviours or is not included in the list of Enterprises with Serious Illegal and Dishonest Acts of People's Republic of China.
- If the client breaches the aforesaid representations and warranties, TÜV Rheinland is entitled to i) immediately terminate the contract/order without prior notice; and ii) withdraw the issued testing report/certificates if any.

6.3 The client shall bear any additional cost incurred on account of work having to be redone or being delayed as a result of late, incorrect or incomplete information provided by or lack of proper cooperation from the client. Even where a fixed or maximum price is agreed, TÜV Rheinland shall be entitled to charge extra fees for such additional expense.

7. Prices

7.1 If the scope of performance is not laid down in writing when the order is placed, invoicing shall be based on costs actually incurred. If no price is agreed in writing, invoicing shall be made in accordance with the price list of TÜV Rheinland valid at the time of performance.

7.2 Unless otherwise agreed, work shall be invoiced according to the progress of the work.

7.3 If the execution of an order extends over more than one month and the value of the contract or the agreed fixed price exceeds €2,500.00 or equivalent value in local currency, TÜV Rheinland may demand payments on account or in instalments.

8. Payment terms

8.1 All invoice amounts shall be due for payment without deduction on receipt of the invoice. No discounts and rebates shall be granted.

8.2 Payments shall be made to the bank account of TÜV Rheinland as indicated on the invoice, stating the invoice and client numbers.

8.3 In cases of default of payment, TÜV Rheinland shall be entitled to claim default interest at the applicable short term loan interest rate publicly announced by a reputable commercial bank in the country where TÜV Rheinland is located. At the same time, TÜV Rheinland reserves the right to claim further damages.

8.4 Should the client default in payment of the invoice despite being granted a reasonable grace period, TÜV Rheinland shall be entitled to cancel the contract, withdraw the certificate, claim damages for non-performance and refuse to continue performance of the contract.

8.5 The provisions set forth in article 8.4 shall also apply in cases involving returned cheques, cessation of payment, commencement of insolvency proceedings against the client's assets or cases in which the commencement of insolvency proceedings has been dismissed due to lack of assets.

8.6 Objections to the invoices of TÜV Rheinland shall be submitted in writing within two weeks of receipt of the invoice.

8.7 TÜV Rheinland shall be entitled to demand appropriate advance payments.

8.8 TÜV Rheinland shall be entitled to raise its fees at the beginning of a month if overheads and/or purchase costs have increased. In this case, TÜV Rheinland shall notify the client in writing of the rise in fees. This notification shall be issued one month prior to the date on which the rise in fees shall come into effect (period of notice of changes in fees). If the rise in fees remains under 5% per contractual year, the client shall not have the right to object to the contract. If the rise in fees exceeds 5% per contractual year, the client shall be entitled to terminate the contract by the end of the period of notice of changes in fees. If the contract is not terminated, the changed fees shall be deemed to have been agreed upon by the time of the expiry of the notice period.

8.9 Only legally established and undisputed claims may be offset against claims by TÜV Rheinland.

9. Acceptance of work

9.1 Any part of the work result ordered which is complete in itself may be presented by TÜV Rheinland for acceptance as an instalment. The client shall be obliged to accept it immediately.

9.2 If acceptance is required or contractually agreed in an individual case, this shall be deemed to have taken place two (2) weeks after completion and handover of the work, unless the client refuses acceptance within this period stating at least one fundamental breach of contract by TÜV Rheinland.

9.3 The client is not entitled to refuse acceptance due to insignificant breach of contract by TÜV Rheinland.

9.4 If acceptance is excluded according to the nature of the work performance of TÜV Rheinland, the completion of the work shall take its place.

9.5 If the client was unable to make use of the time windows provided for within the scope of a certification procedure for auditing/performance by TÜV Rheinland and the certificate is therefore to be withdrawn (e.g. performance of surveillance audits), TÜV Rheinland is entitled to immediately charge a lump-sum compensation of 10% of the order amount as compensation for expenses. The client reserves the right to prove that the TÜV Rheinland has incurred no damage whatsoever or only a considerably lower damage than the above lump sum.

9.6 Insofar as the client has undertaken in the contract to accept services, TÜV Rheinland shall also be entitled to charge lump-sum damages in the amount of 10% of the order amount as compensation for expenses if the service is not completed within one year after the order has been placed. The client reserves the right to prove that the TÜV Rheinland has incurred no damage whatsoever or only a considerably lower damage than the above mentioned lump sum.

10. Confidentiality

10.1 For the purpose of these terms and conditions, "confidential information" means all information, documents, images, drawings, know-how, data, samples and project documentation which one party (the "disclosing party") hands over, transfers or otherwise discloses to the other party (the "receiving party"), and the confidential information created during performance of work by TÜV Rheinland, including product testing data, defects, conformity to the technical standard and related reports. Confidential information also includes paper copies and electronic copies of such information. Confidential information is expressly not the data and know-how collected, compiled or otherwise obtained by TÜV Rheinland (non-personal) within the scope of the provision of services by TÜV Rheinland. TÜV Rheinland is entitled to store, use, further develop and pass on the data obtained in connection with the provision of services for the purposes of developing new services, improving services and analysing the provision of services.

10.2 The disclosing party shall mark all confidential information disclosed in written form as confidential before passing it onto the receiving party. The same applies to confidential information transmitted by e-mail. If confidential information is disclosed orally, the receiving party shall be appropriately informed in advance and the disclosing party shall confirm in writing the confidentiality requirements of the information within five working days of oral disclosure. Where the disclosing party fails to do so within the stipulated period, the receiving party shall not take any confidentiality obligations hereunder towards such information.

10.3 All confidential information which the disclosing party transmits or otherwise discloses to the receiving party and which is created during performance of work by TÜV Rheinland:

- may only be used by the receiving party for the purposes of performing the contract, unless expressly otherwise agreed in writing by the disclosing party;
- may not be copied, distributed, published or otherwise disclosed by the receiving party, unless this is necessary for fulfilling the purpose of the contract or TÜV Rheinland is required to pass on confidential information, inspection reports or documentation to the government authorities, judicial court, accreditation bodies or third parties that are involved in the performance of the contract;

10.4 The receiving party shall protect its own confidential information, but never with a lesser level of confidentiality than that which is reasonably required.

10.5 Information for which the receiving party can furnish proof that:

- was generally known at the time of disclosure or has become general knowledge without the disclosure of this confidentiality clause by the receiving party; or
- was disclosed to the receiving party by a third party entitled to disclose this information; or
- the receiving party already possessed this information prior to disclosure by the disclosing party; or
- the receiving party developed it itself, irrespective of disclosure by the disclosing party, shall not be deemed to constitute "confidential information" as defined in this confidentiality clause.

10.6 All confidential information shall remain the property of the disclosing party. The receiving party hereby agrees to immediately (i) return all confidential information, including all copies, to the disclosing party, and/or (ii) on request by the disclosing party, to destroy all confidential information, including all copies, and confirm the destruction of this confidential information to the disclosing party in writing, at any time if so requested by the disclosing party but at the latest and without special request after termination or expiry of the contract. This does not extend to including reports and certificates prepared for the client solely for the purpose of fulfilling the obligations under the contract, which shall remain with the client. However, TÜV Rheinland is entitled to keep copies of such reports, certificates and confidential information that forms the basis for preparing these reports and certificates in order to evidence the correctness of its results and for general documentation purposes required by laws, regulations and the requirements of working procedures of TÜV Rheinland.

10.7 From the start of the contract and for a period of three years after termination or expiry of the contract, the receiving party shall maintain strict secrecy of all confidential information and shall not disclose this information to any third parties or use it for itself.

11. Copyrights and rights of use, publications

11.1 TÜV Rheinland shall retain all exclusive copyrights in the reports, expert reports/opinions, test reports/results, calculations, presentations etc. prepared by TÜV Rheinland, unless otherwise agreed by the parties in a separate agreement. As the owner of the copyrights, TÜV Rheinland is free to grant others the right to use the work results for individual or all types of use ("right of use").

11.2 The client receives a simple, unlimited, non-transferable, non-sublicensable right to use to the contents of the work results produced within the scope of the contract, unless otherwise agreed by the parties in a separate agreement. The client may only use such reports, expert reports/opinions, test reports/results, results, calculations, presentations etc. prepared within the scope of the contract for the contractually agreed purpose.

11.3 The transfer of right of use of the generated work results regulated in clause 11.2 of the GTBC is subject to the payment of the remuneration agreed in the contract of TÜV Rheinland.

11.4 The client may use work results only complete and unshortened. The client may only pass on the work results in full unless TÜV Rheinland has given its prior written consent to the partial passing on of work results.

11.5 Any publication or duplication of the work results for advertising purposes or any further use of the work results beyond the scope regulated in clause 11.2 needs the prior written approval of TÜV Rheinland in each individual case.

11.6 TÜV Rheinland may revoke a once given approval according to clause 11.5 at any time without stating reasons. In this case, the client is obliged to stop the transfer of the work results immediately at his own expense and, as far as possible, to withdraw publications.

11.7 The consent of TÜV Rheinland to publication or duplication of the work results does not entitle the client to use the corporate logo, corporate design or test/certification mark of TÜV Rheinland.

12. Liability of TÜV Rheinland

12.1 Irrespective of the legal basis, to the fullest extent permitted by applicable law, in the event of a breach of contractual obligations or tort, the liability of TÜV Rheinland for all damages, losses and reimbursement of expenses caused by TÜV Rheinland, its legal representatives and/or employees shall be limited to: (i) in the case of a contract with a fixed overall fee, three times the overall fee for the entire contract (ii) in the case of a contract for annually recurring services, the agreed annual fee; (iii) in the case of a contract expressly charged on a time and material basis, a maximum of 20,000 Euro or equivalent amount in local currency; and (iv) in the case of a framework agreement that provides for the possibility of placing individual

orders, three times of the fee for the individual order under which the damages or losses have occurred. Notwithstanding the above, in the event that the total and accumulated liability calculated according to the foregoing provisions exceeds 2.5 Million Euro or equivalent amount in local currency, the total and accumulated liability of TÜV Rheinland shall be only limited to and shall not exceed the said 2.5 Million Euro or equivalent amount in local currency.

12.2 The limitation of liability according to article 12.1 above shall not apply to damages and/or losses caused by malice, intent or gross negligence on the part of TÜV Rheinland or its vicarious agents. Such limitation shall not apply to damages for a person's death, physical injury or illness.

12.3 In cases involving a fundamental breach of contract, TÜV Rheinland will be liable even where minor negligence is involved. For this purpose, a "fundamental breach" is breach of a material contractual obligation, the performance of which permits the due performance of the contract. Any claim for damages for a fundamental breach of contract shall be limited to the amount of damages reasonably foreseen as a possible consequence of such breach of contract at the time of the breach (reasonably foreseeable damages), unless any of the circumstances described in article 12.2 applies.

12.4 TÜV Rheinland shall not be liable for the acts of the personnel made available by the client to support TÜV Rheinland in the performance of its services under the contract, unless such personnel made available is regarded as vicarious agent of TÜV Rheinland. If TÜV Rheinland is not liable for the acts of the personnel made available by the client under the foregoing provision, the client shall indemnify TÜV Rheinland against any claims made by third parties arising from or in connection with such personnel's acts.

12.5 Unless otherwise contractually agreed in writing, TÜV Rheinland shall only be liable under the contract to the client.

12.6 The limitation periods for claims for damages shall be based on statutory provisions.

12.7 None of the provisions of this article 12 changes the burden of proof to the disadvantage of the client.

13. Export control

13.1 When passing on the services provided by TÜV Rheinland or parts thereof to third parties in Greater China or other regions, the client must comply with the respectively applicable regulations of national and international export control law.

13.2 The performance of a contract with the client is subject to the proviso that there are no obstacles to performance due to national or international foreign trade legislations or embargos and/or sanctions. In the event of a violation, TÜV Rheinland shall be entitled to terminate the contract with immediate effect and the client shall compensate for the losses incurred there by TÜV Rheinland.

14. Data protection notice

TÜV Rheinland processes personal data of the client for the purpose of fulfilling this contract. In addition, TÜV Rheinland also processes the data for other legal purposes in accordance with the relevant legal basis. The personal data of the client will only be disclosed to other natural or legal persons if the legal requirements are met. This also applies to transfers to third countries. The personal data will be deleted immediately as soon as a corresponding reason for deletion arises. Data subjects may exercise the following rights: right of information, right of rectification, right of deletion, right of processing limitation, right of objection, right of data transferability. In addition, persons concerned by the data processing have the right to revoke their consent at any time with effect for the future, as well as the right to file a complaint with the competent data protection supervisory authority. For further details on the processing of personal data by TÜV Rheinland as the person responsible or contract processor, please refer to the respective data protection information. You can contact the Group Data Protection Officer of TÜV Rheinland by e-mail at datenschutz@de.tuv.com or by post at the following address: TÜV Rheinland AG, c/o Group Data Protection Officer, Am Grauen Stein, 51105 Cologne, Germany.

15. Test material: transport risk and storage

15.1 The risk and costs for freight and transport of documents or test material to and from TÜV Rheinland as well as the costs of necessary disposal measures shall be borne by the client.

15.2 Any destroyed and otherwise worthless test material will be disposed of by TÜV Rheinland for the client at the expense of the client, unless otherwise agreed.

15.3 Undamaged test material shall be stored by TÜV Rheinland for four (4) weeks after completion of the test. If a longer storage period is desired, TÜV Rheinland charges an appropriate storage fee.

15.4 After the expiry of the 4 weeks or any longer period agreed upon, the test material will be disposed of by TÜV Rheinland for the client for a fee in accordance with clause 15.2.

16. Termination of the contract

16.1 Notwithstanding clause 3.3 of the GTBC, TÜV Rheinland and the client are entitled to terminate the contract in its entirety or, in the case of services combined in one contract, each of the contractual parts of the contract, individually and independently of the continuation of the remaining services with six (6) months' notice to the end of the contractually agreed term.

16.2 For good causes, TÜV Rheinland may consider giving a written notice to the client to terminate the contract which includes but is not limited to the following:

- the client does not immediately notify TÜV Rheinland of changes in the conditions within the company which are relevant for certification or signs of such changes;
 - the client misuses the certificate or certification mark or uses it in violation of the contract;
 - in the event of several consecutive delays in payment (at least three times);
 - a substantial deterioration of the financial circumstances of the client occurs and as a result the payment claims of TÜV Rheinland under the contract are considerably endangered and TÜV Rheinland cannot reasonably be expected to continue the contractual relationship.
- 16.3 In the event of termination with written notice by TÜV Rheinland for good cause, TÜV Rheinland shall be entitled to a lump-sum claim for damages against the client if the conditions of a claim for damages exist. In this case, the client shall owe 15% of the remuneration to be paid until the end of the fixed contract term as lump-sum compensation. The client reserves the right to prove that there is no damage or a considerably lower damage, TÜV Rheinland reserves the right to prove a considerably higher damage in individual cases.

16.4 TÜV Rheinland is also entitled to terminate the contract with written notice if the client has not been able to make use of the time windows for auditing /service provision provided by TÜV Rheinland within the scope of a certification procedure and the certificate therefore has to be withdrawn (for example during the performance of monitoring audits). Clause 16.3 applies accordingly.

17. Partial invalidity, written form, place of jurisdiction and dispute resolution

17.1 All amendments and supplements must be in writing in order to be effective. This also applies to amendments and supplements to this clause 17.1.

17.2 Should one or several of the provisions under the contract and/or these terms and conditions be or become ineffective, the contracting parties shall replace the invalid provision with a legally valid provision that comes closest to the content of the invalid provision in legal and commercial terms.

17.3 Unless otherwise stipulated in the contract, the governing law of the contract and these terms and conditions shall be chosen following the rules as below:

a) If TÜV Rheinland in question is legally registered and existing in the People's Republic of China, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the laws of the People's Republic of China.

b) If TÜV Rheinland in question is legally registered and existing in Taiwan, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the laws of Taiwan.

c) If TÜV Rheinland in question is legally registered and existing in Hong Kong, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the laws of Hong Kong.

17.4 Any dispute in connection with the contract and these terms and conditions or the execution thereof shall be settled friendly through negotiations.

Unless otherwise stipulated in the contract, if no settlement or no agreement in respect of the extension of the negotiation period can be reached within two months of the arising of the dispute, the dispute shall be submitted:

a) in the case of TÜV Rheinland in question being legally registered and existing in the People's Republic of China, to China International Economic and Trade Arbitration Commission (CIETAC) to be settled by arbitration under the Arbitration Rules of CIETAC in force when the arbitration is submitted. The arbitration shall take place in Beijing, Shanghai, Shenzhen or Chongqing as appropriately chosen by the claiming party.

b) in the case of TÜV Rheinland in question being legally registered and existing in Taiwan, to Chinese Arbitration Association Taipei Branch to be arbitrated in accordance with its then current Rules of Arbitration. The arbitration shall take place in Taipei.

c) in the case of TÜV Rheinland being legally registered and existing in Hong Kong, to Hong Kong International Arbitration Centre (HKIAC) to be settled by arbitration under the HKIAC Administered Arbitration Rules in force when the Notice of Arbitration is submitted in accordance with these rules. The arbitration shall take place in Hong Kong.

The decision of the relevant arbitration tribunal shall be final and binding on both parties. The arbitration fee shall be borne by the losing party.