

**Test Report**

Number SHAH01460820

Applicant

Date 08 Jul, 2022

MINDIAN ELECTRIC CO., LTD.  
MALUJIAO INDUSTRIAL ZONE, BEIBAIXIANG  
TOWN, YUEQING, ZHEJIANG PROVINCE, CHINA  
325603  
Attn KEN

**Sample Description**

One( 1 ) group of submitted sample said to be

Item Name

**PV Fuse link**

Item No.

**MDPVF-30;MDPVF-32**

Country Of Origin

**China**

**Tests Conducted**

As requested by the applicant, for details refer to attached page(s).

**Conclusion:**

Tested Sample

Standard

Result

Screened components of  
Submitted Sample

Restriction of the use of certain hazardous substance in  
electrical and electronic equipment(RoHS Directive  
2011/65/EU and (EU) 2015/863)

Pass

Tested component(s) of submitted  
sample(s)

EU REACH Regulation No 1907/2006 Article 33(1)  
Obligation to provide information of safe use (see REACH  
and Waste Framework Directive (WFD) requirement in report  
for details)

See test conducted

To be continued

Authorized By  
Intertek Testing Services Ltd. Zhejiang



Peter Chen  
General Manager



**Test Report**

Number SHAH01460820

Tests Conducted

**1. Certain Hazardous Substance in Electrical and Electronic Equipment**

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0:2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances. And Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) and Phthalates content were determined by Gas Chromatographic-Mass Spectrometric (GC-MS).

**(A) RESULTS**

| Part No. | Screened COMPONENTS | REFER INFORMATI ON | ITEMS | XRF RESUL TS | Screened RESULTS (PHTHALAT ES) | CHEMICAL CONFIRMATION RESULT (MG/KG) | CONCLUSIO N ON ROHS |
|----------|---------------------|--------------------|-------|--------------|--------------------------------|--------------------------------------|---------------------|
| 1        | WHITE CERAMIC       | /                  | Cd    | P            | NA                             | /                                    | PASS                |
|          |                     |                    | Pb    | P            |                                | /                                    |                     |
|          |                     |                    | Hg    | P            |                                | /                                    |                     |
|          |                     |                    | Cr    | P            |                                | /                                    |                     |
|          |                     |                    | Br    | NA           |                                | /                                    |                     |
|          |                     |                    | DEHP  | NA           | NA                             | /                                    |                     |
|          |                     |                    | BBP   |              | NA                             | /                                    |                     |
|          |                     |                    | DBP   |              | NA                             | /                                    |                     |
|          |                     |                    | DIBP  |              | NA                             | /                                    |                     |
| 2-1      | TRANSPARENT RUBBER  | /                  | Cd    | P            | NA                             | /                                    | PASS                |
|          |                     |                    | Pb    | P            |                                | /                                    |                     |
|          |                     |                    | Hg    | P            |                                | /                                    |                     |
|          |                     |                    | Cr    | P            |                                | /                                    |                     |
|          |                     |                    | Br    | P            |                                | /                                    |                     |
|          |                     |                    | DEHP  | NA           | P                              | /                                    |                     |
|          |                     |                    | BBP   |              | P                              | /                                    |                     |
|          |                     |                    | DBP   |              | P                              | /                                    |                     |
|          |                     |                    | DIBP  |              | P                              | /                                    |                     |
| 2-2      | SOLDERING TIN       | /                  | Cd    | P            | NA                             | /                                    | PASS#1              |
|          |                     |                    | Pb    | F            |                                | 1.66*10 <sup>-5</sup> ppm            |                     |
|          |                     |                    | Hg    | P            |                                | /                                    |                     |
|          |                     |                    | Cr    | P            |                                | /                                    |                     |
|          |                     |                    | Br    | NA           |                                | /                                    |                     |
|          |                     |                    | DEHP  | NA           | NA                             | /                                    |                     |
|          |                     |                    | BBP   |              | NA                             | /                                    |                     |
|          |                     |                    | DBP   |              | NA                             | /                                    |                     |



**Test Report**

Number

SHAH01460820

Tests Conducted

|   |               |   |      |    |    |   |      |
|---|---------------|---|------|----|----|---|------|
|   |               |   | DIBP |    | NA | / |      |
| 3 | MICA SHEET    | / | Cd   | P  | NA | / | PASS |
|   |               |   | Pb   | P  |    | / |      |
|   |               |   | Hg   | P  |    | / |      |
|   |               |   | Cr   | P  |    | / |      |
|   |               |   | Br   | P  |    | / |      |
|   |               |   | DEHP | NA | P  | / |      |
|   |               |   | BBP  |    | P  | / |      |
|   |               |   | DBP  |    | P  | / |      |
|   |               |   | DIBP |    | P  | / |      |
|   |               |   |      |    |    |   |      |
| 4 | WHITE POWDER  | / | Cd   | P  | NA | / | PASS |
|   |               |   | Pb   | P  |    | / |      |
|   |               |   | Hg   | P  |    | / |      |
|   |               |   | Cr   | P  |    | / |      |
|   |               |   | Br   | P  |    | / |      |
|   |               |   | DEHP | NA | P  | / |      |
|   |               |   | BBP  |    | P  | / |      |
|   |               |   | DBP  |    | P  | / |      |
|   |               |   | DIBP |    | P  | / |      |
|   |               |   |      |    |    |   |      |
| 5 | SILVERY METAL | / | Cd   | P  | NA | / | PASS |
|   |               |   | Pb   | P  |    | / |      |
|   |               |   | Hg   | P  |    | / |      |
|   |               |   | Cr   | P  |    | / |      |
|   |               |   | Br   | NA |    | / |      |
|   |               |   | DEHP | NA | NA | / |      |
|   |               |   | BBP  |    | NA | / |      |
|   |               |   | DBP  |    | NA | / |      |
|   |               |   | DIBP |    | NA | / |      |
|   |               |   |      |    |    |   |      |
| 6 | SILVERY METAL | / | Cd   | P  | NA | / | PASS |
|   |               |   | Pb   | P  |    | / |      |
|   |               |   | Hg   | P  |    | / |      |
|   |               |   | Cr   | P  |    | / |      |
|   |               |   | Br   | NA |    | / |      |
|   |               |   | DEHP | NA | NA | / |      |
|   |               |   |      |    |    |   |      |



**Test Report**

Number SHAH01460820

| Tests Conducted |               |   |      |    |    |   |      |
|-----------------|---------------|---|------|----|----|---|------|
| 7               | SILVERY METAL | / | BBP  |    | NA | / | PASS |
|                 |               |   | DBP  |    | NA | / |      |
|                 |               |   | DIBP |    | NA | / |      |
|                 |               |   | Cd   | P  | NA | / |      |
|                 |               |   | Pb   | P  |    | / |      |
|                 |               |   | Hg   | P  |    | / |      |
|                 |               |   | Cr   | P  |    | / |      |
|                 |               |   | Br   | NA |    | / |      |
|                 |               |   | DEHP | NA | NA | / |      |
|                 |               |   | BBP  |    | NA | / |      |
|                 |               |   | DBP  |    | NA | / |      |
|                 |               |   | DIBP |    | NA | / |      |

P = Pass (Below the lower screening limits of table (B1 or B2))  
X = Inconclusive result (Further chemical test was suggested (see table (B1 or B2).)  
F = Fail (Exceeded the upper screening limits of table (B1))  
NA = Not applicable  
ND = Not detected  
 $\mu\text{g}/\text{cm}^2$  = Microgram per square centimeter  
NT = Not tested

Negative = The Cr (VI) concentration is less than  $0.10 \mu\text{g}/\text{cm}^2$ . The sample is negative for Cr (VI).

Inconclusive = The Cr (VI) concentration is between  $0.10 \mu\text{g}/\text{cm}^2$  and  $0.13 \mu\text{g}/\text{cm}^2$ . The result is considered to be inconclusive. Unavoidable coating variations may influence the determination.

Positive = The sample is positive for Cr (VI) is based on visual comparison only. Sample solution is significantly more intense than the  $0.13 \mu\text{g}/\text{cm}^2$  equivalent comparison standard. No colorimetric measurement was performed.

Remark:

(#1 ) = As claimed by the declaration submitted from the applicant / supplier of applicant, the Lead content of the component comes from the constituent of high melting temperature type solders (i.e. Lead-based alloys containing 85% by weight or more Lead) only. According to EU RoHS Directive (2011/65/EU), Lead in high melting temperature type solders of the component can be exempted.

(B) Screening Limits

(B1) XRF Screening Limits in mg/kg for Regulated Elements in Various Matrices (mg/kg)

| Element | Polymer Materials              | Metallic Materials             | Composite Materials            |
|---------|--------------------------------|--------------------------------|--------------------------------|
| Cd      | $P \leq 70 < X < 130 \leq F$   | $P \leq 70 < X < 130 \leq F$   | $P \leq 70 < X < 150 \leq F$   |
| Pb      | $P \leq 700 < X < 1300 \leq F$ | $P \leq 700 < X < 1300 \leq F$ | $P \leq 500 < X < 1500 \leq F$ |
| Hg      | $P \leq 700 < X < 1300 \leq F$ | $P \leq 700 < X < 1300 \leq F$ | $P \leq 500 < X < 1500 \leq F$ |
| Cr      | $P \leq 700 < X$               | $P \leq 700 < X$               | $P \leq 500 < X$               |
| Br      | $P \leq 300 < X$               | Not applicable                 | $P \leq 250 < X$               |



**Test Report**

Number SHAH01460820

**Tests Conducted**

(B2) Preliminary screening test will be used for phthalates, if the results exceed the warning area in the following table, further chemical methods will be conducted to confirm the exact content by GC/MS. (mg/kg)

| Phthalates                       | Polymer  |
|----------------------------------|----------|
| Bis(2-ethylhexyl)phthalate(DEHP) | P ≤600<X |
| Butyl benzyl phthalate(BBP)      | P ≤600<X |
| Dibutyl phthalate(DBP)           | P ≤600<X |
| Diisobutyl phthalate(DIBP)       | P ≤600<X |

**(C) Estimated Detection Limits in mg/kg for Regulated Elements in Various Matrices (mg/kg)**

| Element | Polymer Materials | Metallic Materials | Composite Materials |
|---------|-------------------|--------------------|---------------------|
| Cd      | 50                | 70                 | 70                  |
| Pb      | 100               | 200                | 200                 |
| Hg      | 100               | 200                | 200                 |
| Cr      | 100               | 200                | 200                 |
| Br      | 200               | Not applicable     | 200                 |

**Disclaimers:**

This XRF Screening and Chemical Confirmation Test Report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF Screening and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results shown in this XRF Screening and Chemical Confirmation Test Report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis is required to obtain quantitative data.

**(D) Chemical Test Methods**

| Testing Item                              | Testing Method   | Reporting Limit  |
|---|--|--|
| Cadmium (Cd) Content                      | With reference to IEC 62321-5 Edition 1.0 2013, by acid digestion and determined by ICP - OES                            | 2 mg/kg  |
| Lead (Pb) Content                         | With reference to IEC 62321-5 Edition 1.0 2013, by acid digestion and determined by ICP - OES                            | 2 mg/kg  |
| Mercury (Hg) Content                      | With reference to IEC 62321-4 Edition 1.1 2017, by acid digestion and determined by ICP - OES                            | 2 mg/kg  |
| Chromium (VI) (Cr <sup>6+</sup> ) Content | With reference to IEC 62321-7-1 Edition 1.0:2015, by boiling water extraction and determined by UV-VIS spectrophotometer | Positive(>0.13 g/cm <sup>2</sup> ) /<br>Negative(<0.10 g/cm <sup>2</sup> ) /<br>Inconclusive(0.10 g/cm <sup>2</sup> --0.13 g/cm <sup>2</sup> ) |
| Chromium (VI)(Cr <sup>6+</sup> ) Content  | With reference to IEC 62321-7-2 Edition 1.0:2017, by alkaline digestion and determined by UV-VIS Spectrophotometer       | 10 mg/kg   |



**Test Report**

Number SHAH01460820

Tests Conducted

| Testing Item   | Testing Method   | Reporting Limit |
|--|--|-----------------|
| Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs) Content | With reference to IEC 62321-6 Edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary | 5 mg/kg         |
| Phthalates (DEHP, BBP, DBP, DIBP) Content  | With reference to IEC 62321-8 Edition 1.0:2017, by solvent extraction and determined by GC/MS  | 100mg/kg        |

(E) RoHS Requirement

| Restricted Substances                  | Limits            |
|--|-------------------|
| Cadmium (Cd)                           | 0.01% (100 mg/kg) |
| Lead (Pb)                              | 0.1% (1000 mg/kg) |
| Mercury (Hg)                           | 0.1% (1000 mg/kg) |
| Chromium (VI) (Cr <sup>6+</sup> )      | 0.1% (1000 mg/kg) |
| Polybrominated Biphenyls (PBBs)        | 0.1% (1000 mg/kg) |
| Polybrominated Diphenyl Ethers (PBDEs) | 0.1% (1000 mg/kg) |
| Phthalates (DEHP, BBP, DBP, DIBP)      | 0.1% (1000 mg/kg) |

The above limits were quoted from 2011/65/EU and (EU) 2015/863 for homogeneous material.

Screened Components: PV Fuse link

Date Sample Received: May 30, 2022

Testing Period: May 30, 2022 to Jun 28, 2022

**2. ( ) SVHC Testing Results**

By a combination of Inductively Coupled Argon Plasma Spectrometry, Gas Chromatography – Mass Spectrometry, Liquid Chromatography – Mass Spectrometry, UV-VIS Spectrophotometer and High-Performance Liquid Chromatography.

| No. | Chemical Substance                  | CAS No.   | Results % (w/w)             |
|-----|-------------------------------------|-----------|-----------------------------|
|     |                                     |           | GROUP 2                     |
| 185 | Lead                                | 7439-92-1 | See individual test results |
| --  | Other tested SVHCs in Chemical list | --        | ND                          |

| No. | Chemical Substance | CAS No.   | Results % (w/w) |
|-----|--------------------|-----------|-----------------|
|     |                    |           | GROUP 3         |
|     |                    |           | (2-2)           |
| 185 | Lead               | 7439-92-1 | 16.6*           |

| No. | Chemical Substance            | CAS No. | Results % (w/w) |
|-----|-------------------------------|---------|-----------------|
|     |                               |         | GROUP1          |
| --  | Tested SVHCs in Chemical list | --      | ND              |

|      |   |                                |
|------|---|--------------------------------|
| SVHC | = | Substance of very high concern |
|------|---|--------------------------------|



**Test Report**

Number SHAH01460820

Tests Conducted

|                 |   |  |
|-----------------|---|--|
| ND              | = | Not Detected (less than reporting limit) |
| Reporting limit | = | 0.010%(w/w)                              |
| *               | = | Exceeded requirement                     |

As applicant's requirement, materials were screened in composite testing.

( ) Tested groups: See component list in the last section of this report.

( ) Tested SVHC Chemical list:

| No. | Chemical Substance  | CAS No.                   | No. | Chemical Substance   | CAS No.  |
|-----|---|---------------------------|-----|--|--|
| 1   | Cobalt Dichloride Δ   | 7646-79-9                 | 2   | Diarsenic Pentaoxide Δ   | 1303-28-2  |
| 3   | Diarsenic Trioxide Δ  | 1327-53-3                 | 4   | Lead Hydrogen Arsenate Δ   | 7784-40-9  |
| 5   | Triethyl Arsenate Δ   | 15606-95-8                | 6   | Sodium Dichromate Δ  | 7789-12-0,<br>10588-01-9   |
| 7   | Bis (Tributyltin) Oxide (TBTO) Δ                              | 56-35-9                   | 8   | Anthracene   | 120-12-7   |
| 9   | 4,4'-Diaminodiphenylmethane (MDA)                             | 101-77-9                  | 10  | Hexabromocyclododecane (HBCDD) and All Major Diastereoisomers Identified (α-HBCDD, β-HBCDD, γ-HBCDD) | 25637-99-4 and<br>3194-55-6<br>(134237-50-6,<br>134237-51-7,<br>134237-52-8) |
| 11  | 5-Tert-Butyl-2,4,6-Trinitro-m-Xylene (Musk Xylene)            | 81-15-2                   | 12  | Bis (2-Ethylhexyl) Phthalate (DEHP)  | 117-81-7   |
| 13  | Dibutyl Phthalate (DBP)                                       | 84-74-2                   | 14  | Benzyl Butyl Phthalate (BBP)   | 85-68-7  |
| 15  | Short Chain Chlorinated Paraffins (C <sub>10-13</sub> )       | 85535-84-8                | 16  | Lead Chromate Δ  | 7758-97-6  |
| 17  | Lead Chromate Molybdate Sulphate Red (C.I. Pigment Red 104) Δ | 12656-85-8                | 18  | Lead Sulfochromate Yellow (C.I. Pigment Yellow 34) Δ   | 1344-37-2  |
| 19  | Tris (2-Chloroethyl) Phosphate                                | 115-96-8                  | 20  | 2,4-Dinitrotoluene   | 121-14-2   |
| 21  | Diisobutyl Phthalate (DIBP)                                   | 84-69-5                   | 22  | Coal Tar Pitch, High Temperature   | 65996-93-2   |
| 23  | Anthracene Oil  | 90640-80-5                | 24  | Anthracene Oil, Anthracene Paste, Distn. Lights  | 91995-17-4   |
| 25  | Anthracene Oil, Anthracene Paste, Anthracene Fraction         | 91995-15-2                | 26  | Anthracene Oil, Anthracene-low   | 90640-82-7   |
| 27  | Anthracene Oil, Anthracene Paste                              | 90640-81-6                | 28  | Acrylamide   | 79-06-1  |
| 29  | Boric Acid Δ  | 10043-35-3,<br>11113-50-1 | 30  | Disodium Tetraborate, Anhydrous Δ  | 1330-43-4,<br>12179-04-3,<br>1303-96-4                                       |
| 31  | Tetraboron Disodium Heptaoxide, Hydrate Δ                     | 12267-73-1                | 32  | Sodium Chromate Δ  | 7775-11-3  |
| 33  | Potassium Chromate Δ  | 7789-00-6                 | 34  | Ammonium Dichromate Δ  | 7789-09-5  |
| 35  | Potassium Dichromate Δ  | 7778-50-9                 | 36  | Trichloroethylene  | 79-01-6  |
| 37  | 2-Methoxyethanol  | 109-86-4                  | 38  | 2-Ethoxyethanol  | 110-80-5   |
| 39  | Cobalt Sulphate Δ   | 10124-43-3                | 40  | Cobalt Dinitrate Δ   | 10141-05-6   |
| 41  | Cobalt Carbonate Δ  | 513-79-1                  | 42  | Cobalt Diacetate Δ   | 71-48-7  |
| 43  | Chromium Trioxide Δ   | 1333-82-0                 | 44  | Chromic Acid Δ<br>Dichromic Acid Δ<br>Oligomers of Chromic Acid and Dichromic Acid Δ                 | 7738-94-5<br>13530-68-2<br>--  |



# Test Report

Number

SHAH01460820

## Tests Conducted

|    |  |                          |    |  |                          |
|----|--|--------------------------|----|--|--------------------------|
| 45 | Strontium Chromate $\Delta$  | 7789-06-2                | 46 | 2-ethoxyethyl acetate (2-EEA)  | 111-15-9                 |
| 47 | 1,2-Benzenedicarboxylic acid, di-C <sub>7-11</sub> -branched and linear alkyl esters (DHNUP)   | 68515-42-4               | 48 | Hydrazine  | 7803-57-8<br>302-01-2    |
| 49 | 1-methyl-2-pyrrolidone   | 872-50-4                 | 50 | 1,2,3-trichloropropane   | 96-18-4                  |
| 51 | 1,2-Benzenedicarboxylic acid, di-C <sub>6-8</sub> -branched alkyl esters, C <sub>7</sub> -rich (DIHP)  | 71888-89-6               | 52 | Lead dipicrate $\Delta$  | 6477-64-1                |
| 53 | Lead styphnate $\Delta$  | 15245-44-0               | 54 | Lead azide; Lead diazide $\Delta$  | 13424-46-9               |
| 55 | Phenolphthalein  | 77-09-8                  | 56 | 2,2'-dichloro-4,4'-methylenedianiline (MOCA)   | 101-14-4                 |
| 57 | N,N-dimethylacetamide (DMAC)   | 127-19-5                 | 58 | Trilead diarsenate $\Delta$  | 3687-31-8                |
| 59 | Calcium arsenate $\Delta$  | 7778-44-1                | 60 | Arsenic acid $\Delta$  | 7778-39-4                |
| 61 | Bis(2-methoxyethyl) ether  | 111-96-6                 | 62 | 1,2-Dichloroethane   | 107-06-2                 |
| 63 | 4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)   | 140-66-9                 | 64 | 2-Methoxyaniline; o-Anisidine  | 90-04-0                  |
| 65 | Bis(2-methoxyethyl) phthalate (DMEP)   | 117-82-8                 | 66 | Formaldehyde, oligomeric reaction products with aniline (technical MDA)  | 25214-70-4               |
| 67 | Pentazinc chromate octahydroxide $\Delta$  | 49663-84-5               | 68 | Potassium hydroxyoctaoxodizincate di-chromate $\Delta$   | 11103-86-9               |
| 69 | Dichromium tris(chromate) $\Delta$   | 24613-89-6               | 70 | Aluminosilicate Refractory Ceramic Fibres $\Delta$   | (Index No. 650-017-00-8) |
| 71 | Zirconia Aluminosilicate Refractory Ceramic Fibres $\Delta$  | (Index No. 650-017-00-8) | 72 | 1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)  | 112-49-2                 |
| 73 | 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)  | 110-71-4                 | 74 | Diboron trioxide $\Delta$  | 1303-86-2                |
| 75 | Formamide  | 75-12-7                  | 76 | Lead(II) bis(methanesulfonate) $\Delta$  | 17570-76-2               |
| 77 | TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)  | 2451-62-9                | 78 | $\beta$ -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               |
| 79 | 4,4'-bis(dimethylamino)benzophenone (Michler's ketone)   | 90-94-8                  | 80 | N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)   | 101-61-1                 |
| 81 | [4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with $\geq$ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] | 548-62-9                 | 82 | [4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylen]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26) [with $\geq$ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] | 2580-56-5                |
| 83 | $\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq$ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]               | 6786-83-0                | 84 | 4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq$ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]   | 561-41-1                 |





# Test Report

Number SHAH01460820

## Tests Conducted

|     |   |   |     |  |  |
|-----|---|---|-----|--|--|
| 85  | Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)  | 1163-19-5                                   | 86  | Pentacosafuorotridecanoic acid   | 72629-94-8   |
| 87  | Tricosafuorododecanoic acid   | 307-55-1                                    | 88  | Henicosafuoroundecanoic acid   | 2058-94-8  |
| 89  | Heptacosafuorotetradecanoic acid  | 376-06-7                                    | 90  | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))  | 123-77-3   |
| 91  | Cyclohexane-1,2-dicarboxylic anhydride [1]<br><br>cis-cyclohexane-1,2-dicarboxylic anhydride [2]<br><br>trans-cyclohexane-1,2-dicarboxylic anhydride [3]<br><br>[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<br><br>13149-00-3<br><br>14166-21-3 | 92  | Hexahydromethylphthalic anhydride [1],<br><br>Hexahydro-4-methylphthalic anhydride [2],<br><br>Hexahydro-1-methylphthalic anhydride [3],<br><br>Hexahydro-3-methylphthalic anhydride [4]<br><br>[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<br><br>19438-60-9<br><br>48122-14-1<br><br>57110-29-9 |
| 93  | 4-Nonylphenol, branched and linear<br><br>[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]   | --  | 94  | 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated<br><br>[covering well-defined substances and UVCB substances, polymers and homologues]   | --   |
| 95  | Methoxyacetic acid  | 625-45-6                                    | 96  | N,N-dimethylformamide  | 68-12-2  |
| 97  | Dibutyltin dichloride (DBTC) Δ  | 683-18-1                                    | 98  | Lead monoxide (Lead oxide) Δ   | 1317-36-8  |
| 99  | Orange lead (Lead tetroxide) Δ  | 1314-41-6                                   | 100 | Lead bis(tetrafluoroborate) Δ  | 13814-96-5   |
| 101 | Trilead bis(carbonate)dihydroxide Δ   | 1319-46-6                                   | 102 | Lead titanium trioxideΔ  | 12060-00-3   |
| 103 | Lead titanium zirconium oxideΔ  | 12626-81-2                                  | 104 | Silicic acid, lead salt Δ  | 11120-22-2   |
| 105 | Silicic acid (H <sub>2</sub> SiO <sub>5</sub> ), barium salt (1:1), lead-dopedΔ<br><br>[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] | 68784-75-8                                  | 106 | 1-bromopropane (n-propyl bromide)  | 106-94-5   |



### Test Report

Number SHAH01460820

#### Tests Conducted

|     |  |            |     |   |             |
|-----|--|------------|-----|---|-------------|
| 107 | Methyloxirane (Propylene oxide)  | 75-56-9    | 108 | 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear  | 84777-06-0  |
| 109 | Diisopentylphthalate (DIPP)  | 605-50-5   | 110 | N-pentyl-isopentylphthalate   | 776297-69-9 |
| 111 | 1,2-diethoxyethane   | 629-14-1   | 112 | Acetic acid, lead salt, basicΔ  | 51404-69-4  |
| 113 | Lead oxide sulfateΔ  | 12036-76-9 | 114 | [Phthalato(2-)]dioxotrileadΔ  | 69011-06-9  |
| 115 | Dioxobis(stearato)trileadΔ   | 12578-12-0 | 116 | Fatty acids, C16-18, lead saltsΔ  | 91031-62-8  |
| 117 | Lead cyanamateΔ  | 20837-86-9 | 118 | Lead dinitrateΔ   | 10099-74-8  |
| 119 | Pentalead tetraoxide sulphateΔ   | 12065-90-6 | 120 | Pyrochlore, antimony lead yellowΔ   | 8012-00-8   |
| 121 | Sulfurous acid, lead salt, dibasicΔ  | 62229-08-7 | 122 | TetraethylleadΔ   | 78-00-2     |
| 123 | Tetralead trioxide sulphateΔ   | 12202-17-4 | 124 | Trilead dioxide phosphonateΔ  | 12141-20-7  |
| 125 | Furan  | 110-00-9   | 126 | Diethyl sulphate  | 64-67-5     |
| 127 | Dimethyl sulphate  | 77-78-1    | 128 | 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine  | 143860-04-2 |
| 129 | Dinoseb (6-sec-butyl-2,4-dinitrophenol)  | 88-85-7    | 130 | 4,4'-methylenedi-o-toluidine  | 838-88-0    |
| 131 | 4,4'-oxydianiline and its salts  | 101-80-4   | 132 | 4-aminoazobenzene   | 60-09-3     |
| 133 | 4-methyl-m-phenylenediamine (toluene-2,4-diamine)  | 95-80-7    | 134 | 6-methoxy-m-toluidine (p-cresidine)   | 120-71-8    |
| 135 | Biphenyl-4-ylamine   | 92-67-1    | 136 | o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]  | 97-56-3     |
| 137 | o-toluidine  | 95-53-4    | 138 | N-methylacetamide   | 79-16-3     |
| 139 | CadmiumΔ   | 7440-43-9  | 140 | Cadmium oxideΔ  | 1306-19-0   |
| 141 | Dipentyl phthalate (DPP)   | 131-18-0   | 142 | 4-Nonylphenol, branched and linear, ethoxylated [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] | --          |
| 143 | Ammonium pentadecafluorooctanoate (APFO)   | 3825-26-1  | 144 | Pentadecafluorooctanoic acid (PFOA)   | 335-67-1    |
| 145 | Cadmium sulphideΔ  | 1306-23-6  | 146 | Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)  | 573-58-0    |
| 147 | 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  | 148 | Dihexyl phthalate (DnHP)  | 84-75-3     |
| 149 | Imidazolidine-2-thione (2-imidazoline-2-thiol)   | 96-45-7    | 150 | Lead di(acetate) Δ  | 301-04-2    |
| 151 | Trixylyl phosphate   | 25155-23-1 | 152 | 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (Diisohexyl phthalate(DIHP))   | 68515-50-4  |



# Test Report

Number

SHAH01460820

## Tests Conducted

|     |  |                                    |     |   |                                     |
|-----|--|------------------------------------|-----|---|-------------------------------------|
| 153 | Cadmium chlorideΔ  | 10108-64-2                         | 154 | Sodium perborate;<br>perboric acid, sodium saltΔ  | --                                  |
| 155 | Sodium peroxometaborateΔ   | 7632-04-4                          | 156 | 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)  | 25973-55-1                          |
| 157 | 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)   | 3846-71-7                          | 158 | 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)  | 15571-58-1                          |
| 159 | Cadmium fluorideΔ  | 7790-79-6                          | 160 | Cadmium sulphateΔ   | 10124-36-4;<br>31119-53-6           |
| 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) | 15571-58-1;<br>27107-89-7          | 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<br>68648-93-1            |
| 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 isomers of [1] and [2] or any combination thereof]                          | 117933-89-8                        | 164 | 1,3-Propanesultone  | 1120-71-4                           |
| 165 | 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl) phenol (UV-327)  | 3864-99-1                          | 166 | 2-(2H-Benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)  | 36437-37-3                          |
| 167 | Nitrobenzene   | 98-95-3                            | 168 | Perfluorononan-1-oic-acid and its sodium and ammonium salts   | 375-95-1<br>21049-39-8<br>4149-60-4 |
| 169 | Benzo[def]chrysene (Benzo[a]pyrene)  | 50-32-8                            | 170 | 4,4'-isopropylidenediphenol (bisphenol A; BPA)  | 80-05-7                             |
| 171 | Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts   | 335-76-2<br>3830-45-3<br>3108-42-7 | 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] | --                                  |
| 173 | p-(1,1 dimethylpropyl)phenol   | 80-46-6                            | 174 | Perfluorohexane-1-sulphonic acid and its salts (PFHxS)  | 355-46-4                            |
| 175 | Benz[a]anthracene  | 56-55-3                            | 176 | Cadmium nitrateΔ  | 10325-94-7                          |
| 177 | Cadmium carbonateΔ   | 513-78-0                           | 178 | Cadmium hydroxideΔ  | 21041-95-2                          |
| 179 | Chrysene   | 218-01-9                           | 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  | --                                  |



**Test Report**

Number SHAH01460820

Tests Conducted

|     |  |   |     |  |             |
|-----|--|---|-----|--|-------------|
|     |  |   |     | anti- and syn-isomers or any combination thereof]                            |             |
| 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]                                 | --  | 182 | Octamethylcyclotetrasiloxane (D4)  | 556-67-2    |
| 183 | Decamethylcyclopentasiloxane (D5)  | 541-02-6  | 184 | Dodecamethylcyclohexasiloxane (D6)   | 540-97-6    |
| 185 | Lead   | 7439-92-1                                       | 186 | Disodium octaborateΔ   | 12008-41-2  |
| 187 | Benzo[ghi]perylene   | 191-24-2  | 188 | Terphenyl hydrogenated   | 61788-32-7  |
| 189 | Ethylenediamine (EDA)  | 107-15-3  | 190 | Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (Trimellitic anhydride) (TMA) | 552-30-7    |
| 191 | Dicyclohexyl phthalate (DCHP)  | 84-61-7   | 192 | 2,2-bis(4'-hydroxyphenyl)-4-methylpentane                                    | 6807-17-6   |
| 193 | Benzo[k]fluoranthene   | 207-08-9  | 194 | Fluoranthene   | 206-44-0    |
| 195 | Phenanthrene   | 85-01-8   | 196 | Pyrene   | 129-00-0    |
| 197 | 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)  | 15087-24-8                                      | 198 | 4-tert-butylphenol (PTBP)  | 98-54-4     |
| 199 | 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)   | -   | 200 | 2-methoxyethyl acetate   | 110-49-6    |
| 201 | Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)   | -   | 202 | 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone                          | 119313-12-1 |
| 203 | 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one   | 71868-10-5                                      | 204 | Diisohexyl phthalate   | 71850-09-4  |
| 205 | Perfluorobutane sulfonic acid (PFBS) and its salts   | --  | 206 | 1-vinylimidazole   | 1072-63-5   |
| 207 | 2-methylimidazole  | 693-98-1  | 208 | Butyl 4-hydroxybenzoate  | 94-26-8     |
| 209 | Dibutylbis(pentane-2,4-dionato-O,O')tin  | 22673-19-4                                      | 210 | bis(2-(2-methoxyethoxy)ethyl) ether  | 143-24-8    |
| 211 | Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety | -   | 212 | 1,4-dioxane  | 123-91-1    |
| 213 | 2,2-bis(bromomethyl)propane 1,3-diol (BMP); 2,2-dimethylpropan-1-ol,   | 3296-90-0<br>36483-57-5<br>1522-92-5<br>96-13-9 | 214 | 2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers       | --          |



## Test Report

Number SHAH01460820

### Tests Conducted

|     |  |           |     |   |             |
|-----|--|-----------|-----|---|-------------|
|     | tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA); 2,3-dibromo-1-propanol (2,3-DBPA)   |           |     |   |             |
| 215 | 4,4'-(1-methylpropylidene)bisphenol; (bisphenol B)   | 77-40-7   | 216 | Glutaral  | 111-30-8    |
| 217 | Medium-chain chlorinated paraffins (MCCP) [UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17]          | --        | 218 | Orthoboric acid, sodium salt $\Delta$   | 13840-56-7  |
| 219 | Phenol, alkylation products (mainly in para position) with C12-rich branched or linear alkyl chains from oligomerisation, covering any individual isomers and/or combinations thereof (PDDP) | --        | 220 | ( $\pm$ )-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)              | --          |
| 221 | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)  | 119-47-1  | 222 | S-(tricyclo(5.2.1.0' <sup>2</sup> ,6)deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate $\Delta$ | 255881-94-8 |
| 223 | Tris(2-methoxyethoxy)vinylsilane   | 1067-53-4 |     |   |             |

### (aa) Proposed SVHC in the draft Commission Implementing Decision of September 2021

| No. | Chemical Substance | CAS No.  | No. | Chemical Substance | CAS No. |
|-----|--------------------|----------|-----|--------------------|---------|
| 1   | Resorcinol         | 108-46-3 |     |                    |         |

$\Delta$  = Determination was based on elemental analysis. The content was calculated based on assumption of worst-case.

(IV) Tested groups: See component list in the last section of this report.

### Notes:

1. Substances of very high concern (SVHC) are classified as:

- Carcinogenicity category 1A or 1B;
- Germ cell mutagenicity category 1A or 1B;
- Reproductive toxicity category 1A or 1B, adverse effects on sexual function and fertility or on development;
- Persistent, bioaccumulative and toxic (PBT)
- Very persistent and very bioaccumulative (vPvB)
- Other substances for which there is scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern, such as endocrine disruptors

### REACH requirement:

As per Article 7 of Regulation (EC) No 1907/2006 (REACH) as amended, if a substance of very high concern (SVHC) on the Candidate List for Authorisation is present in articles above a concentration of 0.1% weight by weight (w/w) and the substance is present in those articles in quantities totalling over 1 tonne per producer or per importer per year, then the producer or importer shall notify the European Chemicals Agency (ECHA). The notifications have to be submitted no later than 6 months after the inclusion in the Candidate List. The information to be notified shall include the following:

- Identity and contact details of the producer or importer;



## Test Report

Number SHAH01460820

### Tests Conducted

- (b) Registration number(s), if available;
- (c) Identity of the substance;
- (d) Classification of the substance(s);
- (e) Brief description of the use(s) of the substance(s) in the article and of the uses of the article(s);
- (f) Tonnage range of the substance(s).

As per Article 31 of Regulation (EC) No 1907/2006 (REACH) as amended, the supplier of mixture not classified as hazardous according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP), shall provide the recipient at his request with a safety data sheet, where a mixture contains at least one substance on the SVHC list (Candidate List of substances of very high concern for Authorisation) and its individual concentration is of 0.1% or above by weight for non-gaseous mixtures.

As per Article 33(1) of Regulation (EC) No 1907/2006 (REACH) as amended, any supplier of an article containing a substance of very high concern (SVHC) on the Candidate List for Authorisation in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with information of safe use of the article. An article meets the requirement of Article 33(1) by default when no SVHC exceeds 0.1% weight by weight (w/w).

As per Article 33(2) of Regulation (EC) No 1907/2006 (REACH) as amended, any supplier of an article containing a substance of very high concern (SVHC) on the Candidate List for Authorisation in a concentration above 0.1% weight by weight (w/w) shall provide the consumer on request with information of safe use of the article, within 45 days of receipt of the request.

As per Court of Justice of the European Union Judgment in Case C-106/14, Press Release No 100/15 dated 10 September 2015, each of the articles incorporated as a component of a complex product is covered by the relevant duties to notify and provide information when they contain a substance of very high concern in a concentration above 0.1% of their mass.

### Waste Framework Directive (WFD) Requirement:

As per Article 9(1)(i) of Directive 2008/98/EC on waste (WFD, Waste Framework Directive) as amended, Member States shall take measures to ensure that any supplier of an article as defined in point 33 of Article 3 of Regulation (EC) No 1907/2006 (REACH) provides the information pursuant to Article 33(1) of Regulation (EC) No 1907/2006 (REACH) to the European Chemicals Agency (ECHA) as from 5 January 2021. Any supplier of an article containing a substance of very high concern (SVHC) on the Candidate List for Authorisation in a concentration above 0.1% weight by weight (w/w) on the EU market is required to submit a SCIP Notification on that article to ECHA, as from 5 January 2021.

Date Sample Received: May 30, 2022

Testing Period: May 30, 2022 to Jun 28, 2022

**Remark: The item is accredited and subcontracted to the organization complied with ISO/IEC 17025.**

| No. | Component Name     | Material                          |
|-----|--------------------|-----------------------------------|
| 1   | WHITE CERAMIC      | 12. Other Material                |
| 2-1 | TRANSPARENT RUBBER | 8. Soft Plastic/Silica Gel/Rubber |
| 2-2 | SOLDERING TIN      | 1. Metal                          |
| 3   | MICA SHEET         | 12. Other Material                |
| 4   | WHITE POWDER       | 12. Other Material                |
| 5   | SILVERY METAL      | 1. Metal                          |
| 6   | SILVERY METAL      | 1. Metal                          |
| 7   | SILVERY METAL      | 1. Metal                          |



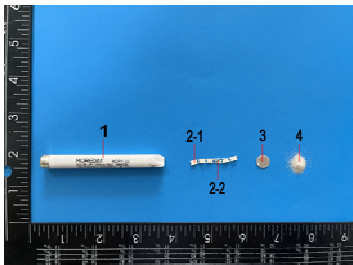
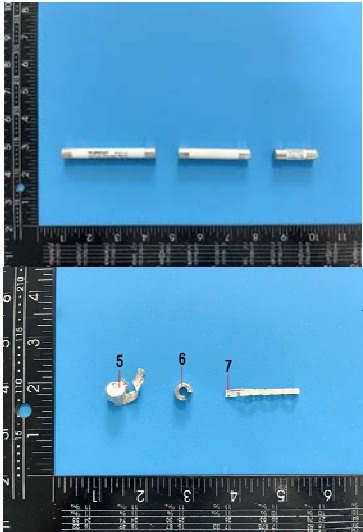


Test Report

Number SHAH01460820

Tests Conducted

Table with 5 columns: Group No., No., Component No., Component Name, Material. It lists components for Group 1 (Transparent Rubber, Mica Sheet, White Powder), Group 2 (Silvery Metal), Group 3 (Soldering Tin), and Group 4 (White Ceramic).



End of report

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