

## TEST REPORT

Report No: MF181102009E-03

Page 1 of 7

Customer..... : 南昌弗洛林科技有限公司  
Address..... : 江西省南昌市南昌县小蓝经济开发区沿河路以西、A区一支路以南（莲河路328号）  
Sample name..... : Fully Synthetic Water Soluble Cutting Fluid for Optical Glass/LED  
Sample model..... : HF-OG-06  
Sample description..... : transparent liquid  
Sample No. .... : F181102019  
Amount of Sample..... : 1 pc  
Sample Received Date... : Nov.02.2018  
Completion Date..... : Nov.08.2018  
Report Issue Date ..... : Nov.08.2018

### Test Information:

| No. | Item  | Test Result    |
|-----|---|----------------|
| 1   | RoHS (Pb, Cd, Hg, Cr <sup>6+</sup> , PBBs, PBDEs, DEHP, BBP, DBP, DIBP) | See Appendix 2 |



Testing: Allen

Inspected: Bill Chen

Approved: Carmen

# TEST REPORT

Report No: MF181102009E-03

Page 2 of 7

## Appendix 1

### Sample Photos:



Figure 1. The sample photo of F181102019

# TEST REPORT

Report No: MF181102009E-03

Page 3 of 7

## Appendix 2

**Test Item: RoHS (Pb、Cd、Hg、Cr<sup>6+</sup>、PBBs、PBDEs、DEHP、BBP、DBP、DIBP)**

### 1. Environment Condition:

Temperature: 23.9°C; Relative humidity: 52%R.H;

### 2. Test Sample:

| Sample No. | Sample name   | Sample model | Sample photo   | Sample Num. |
|------------|---|--------------|----------------|-------------|
| F181102019 | Fully Synthetic Water Soluble<br>Cutting Fluid for Optical<br>Glass/LED | HF-OG-06     | See Appendix 1 | 1 pc        |

### 3. Test Equipment:

| No. | Name   | Model No.     |
|-----|--|---------------|
| 1   | Inductively Coupled Plasma Optical Emission Spectrometer | Optima 8000   |
| 2   | UV-VIS Spectrophotometer                                 | UV-5200       |
| 3   | Gas Chromatograph Mass Spectrometer                      | GCMS-QP2010SE |

### 4. Testing Standard:

Reference to IEC 62321-4-2013 Determination of certain substances in electrotechnical products. Part 4:Mercury in polymers,metals and electronics by CV-AAS,CV-AFS,ICP-OES and ICP-MS

Reference to IEC 62321-5-2013 Determination of certain substances in electrotechnical products. Part 5:Cadmium,lead and chromium in polymers and electronics and cadmium and lead in metals by AAS,AFS,ICP-OES and ICP-MS

Reference to IEC 62321-7-2-2017 Determination Of Certain Substances In Electrotechnical Products -Part 7-2:Hexavalent Chromium-Determination Of Hexavalent Chromium (Cr(VI)) In Polymers And Electronics By The Colorimetric Method

Reference to IEC 62321-6-2015 Determination of certain substances in electrotechnical products. Part 6:Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography-mass spectrometry (GC-MS)

Reference to BS EN 14372-2004 Child use and care articles. Cutlery and feeding utensils. Safety requirements and tests

### 5. Test Flow:

See Appendix 3

# TEST REPORT

Report No: MF181102009E-03

Page 4 of 7

## 6. Test Results:

| Item                                   | Unit  | MDL | Test Result | Limit |
|--|-------|-----|-------------|-------|
| Lead (Pb)                              | mg/kg | 2   | N.D.        | 1000  |
| Cadmium(Cd)                            | mg/kg | 2   | N.D.        | 100   |
| Mercury (Hg)                           | mg/kg | 2   | N.D.        | 1000  |
| Hexavalent Chromium(Cr <sup>6+</sup> ) | mg/kg | 2   | N.D.        | 1000  |
| Monobromobiphenyl                      | mg/kg | 5   | N.D.        | -     |
| Dibromobiphenyl                        | mg/kg | 5   | N.D.        | -     |
| Tribromobiphenyl                       | mg/kg | 5   | N.D.        | -     |
| Tetrabromobiphenyl                     | mg/kg | 5   | N.D.        | -     |
| Pentabromobiphenyl                     | mg/kg | 5   | N.D.        | -     |
| Hexabromobiphenyl                      | mg/kg | 5   | N.D.        | -     |
| Heptabromobiphenyl                     | mg/kg | 5   | N.D.        | -     |
| Octabromobiphenyl                      | mg/kg | 5   | N.D.        | -     |
| Nonabromobiphenyl                      | mg/kg | 5   | N.D.        | -     |
| Decabromobiphenyl                      | mg/kg | 5   | N.D.        | -     |
| Sum of PBBs                            | mg/kg | -   | N.D.        | 1000  |
| Monobromodiphenyl ether                | mg/kg | 5   | N.D.        | -     |
| Dibromodiphenyl ether                  | mg/kg | 5   | N.D.        | -     |
| Tribromodiphenyl ether                 | mg/kg | 5   | N.D.        | -     |
| Tetrabromodiphenyl ether               | mg/kg | 5   | N.D.        | -     |
| Pentabromodiphenyl ether               | mg/kg | 5   | N.D.        | -     |
| Hexabromodiphenyl ether                | mg/kg | 5   | N.D.        | -     |
| Heptabromodiphenyl ether               | mg/kg | 5   | N.D.        | -     |
| Octabromodiphenyl ether                | mg/kg | 5   | N.D.        | -     |
| Nonabromodiphenyl ether                | mg/kg | 5   | N.D.        | -     |
| Decabromodiphenyl ether                | mg/kg | 5   | N.D.        | -     |
| Sum of PBDEs                           | mg/kg | -   | N.D.        | 1000  |
| Bis(2-ethylhexyl) phthalate (DEHP)     | mg/kg | 50  | N.D.        | 1000  |
| Butyl benzyl phthalate (BBP)           | mg/kg | 50  | N.D.        | 1000  |
| Dibutyl phthalate (DBP)                | mg/kg | 50  | N.D.        | 1000  |
| Diisobutyl phthalate (DIBP)            | mg/kg | 50  | N.D.        | 1000  |



# TEST REPORT

Report No: MF181102009E-03

Page 5 of 7

**Remarks:**

mg/kg = ppm = parts per million

N.D. = Not Detected ( &lt; MDL )

MDL = Method Detection Limit

Limits are derived from the technical specifications of the standard EU RoHS directive 2011/65/EU with amendment (EU) 2015/863.

**Conclusion:**

Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), DEHP, BBP, DBP, DIBP comply with the limits set by RoHS Directive 2011/65/EU with amendment 2015/863/EU.

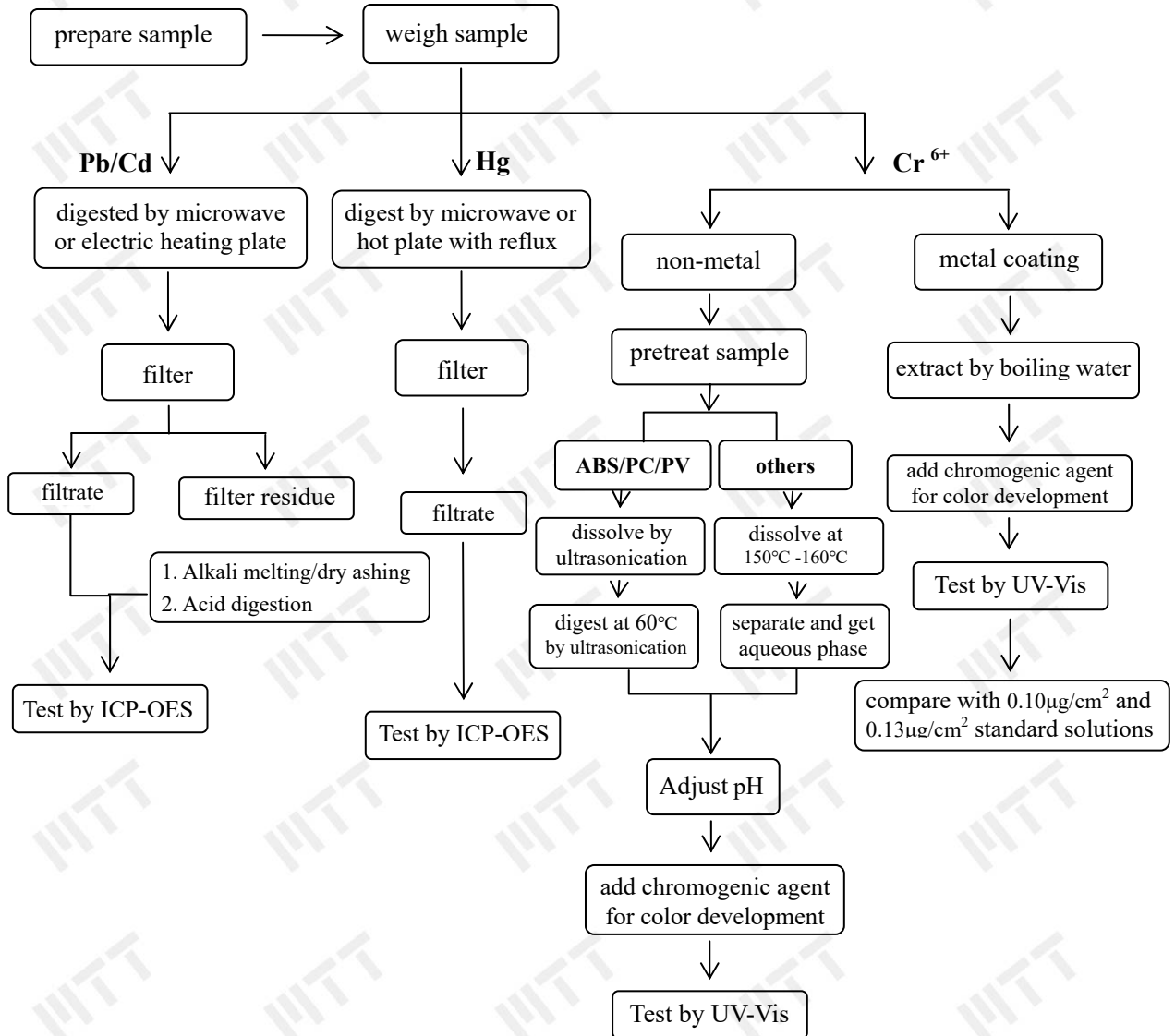
# TEST REPORT

Report No: MF181102009E-03

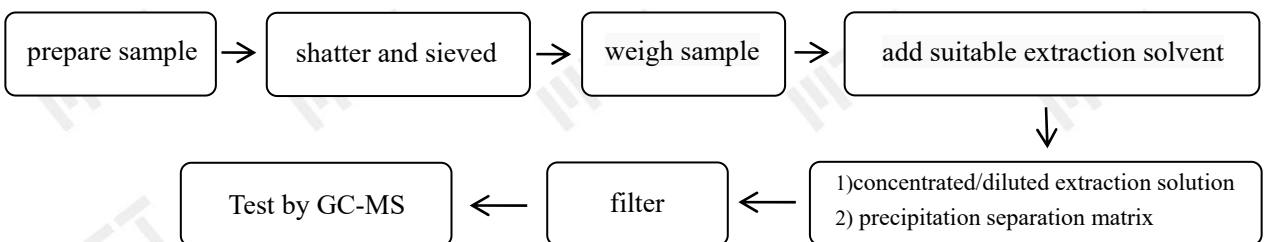
Page 6 of 7

## Appendix 3

### Pb、Cd、Hg and Cr<sup>6+</sup> test step:



### PBBs、PBDEs 和 DBP、BBP、DIPB、DEHP test step:



# TEST REPORT

Report No: MF181102009E-03

Page 7 of 7

**Annotations: /**

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

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