

## TEST REPORT

Report No: MF181102009E-02

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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 Metalworking Fluid  
Sample model..... : HF-MW-09  
Sample description..... : transparent liquid  
Sample No. .... : F181102018  
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

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## Appendix 1

### Sample Photos:

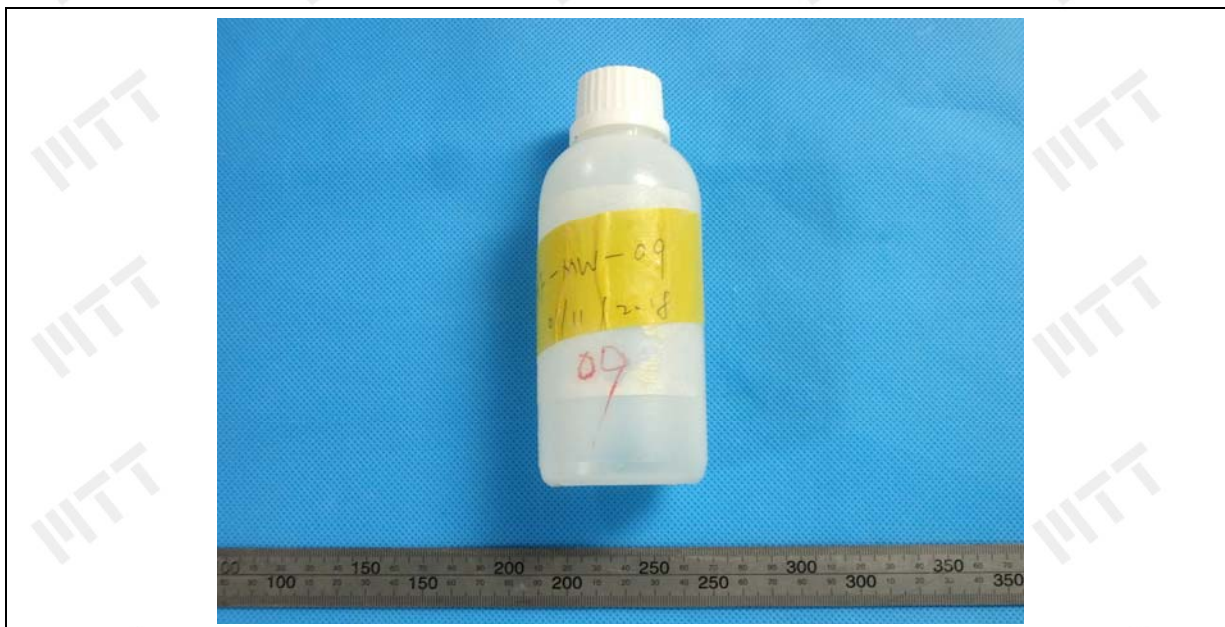


Figure 1. The sample photo of F181102018

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## 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.
F181102018	Fully Synthetic Water Soluble Metalworking Fluid	HF-MW-09	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

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## 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

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**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.

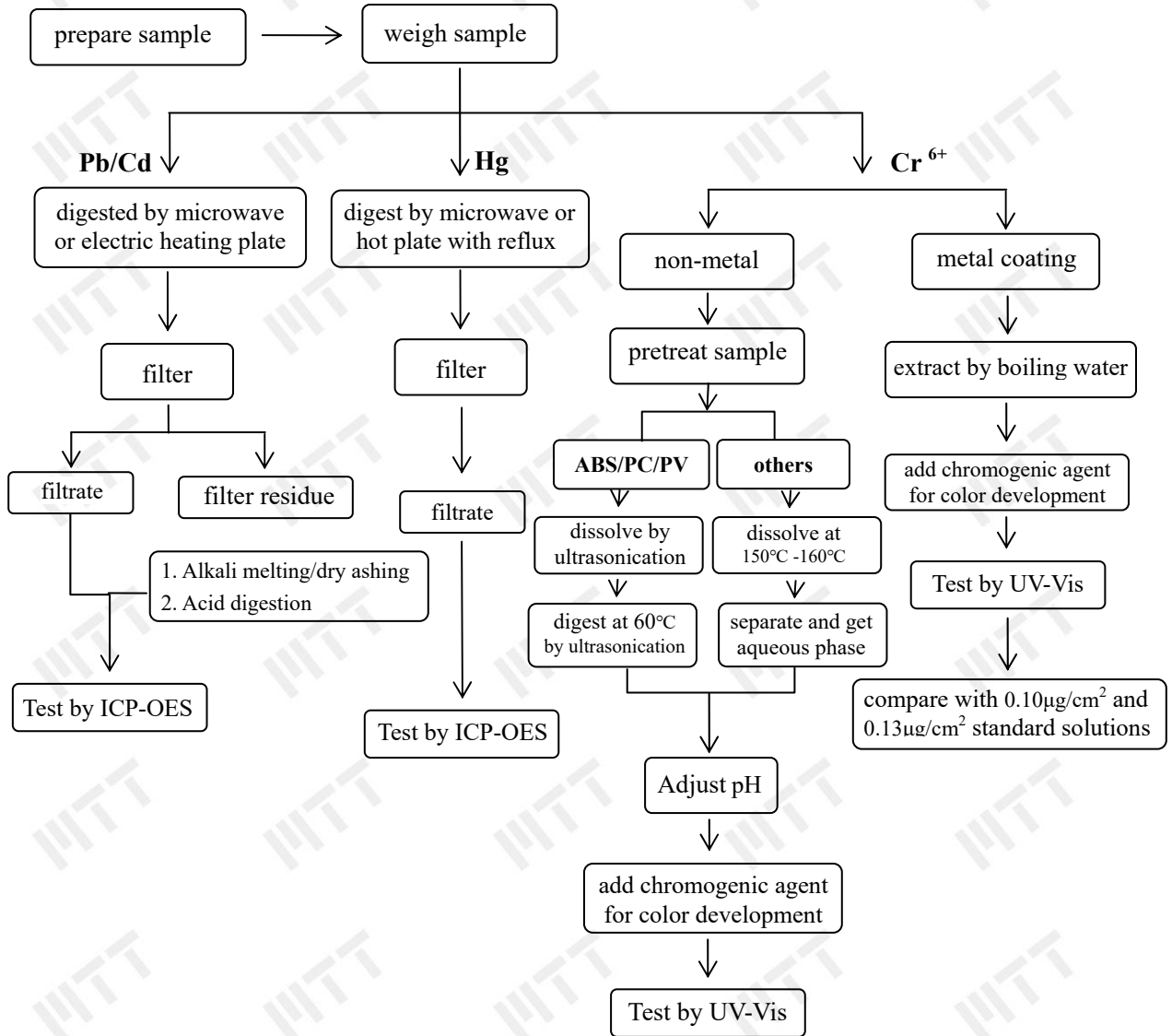
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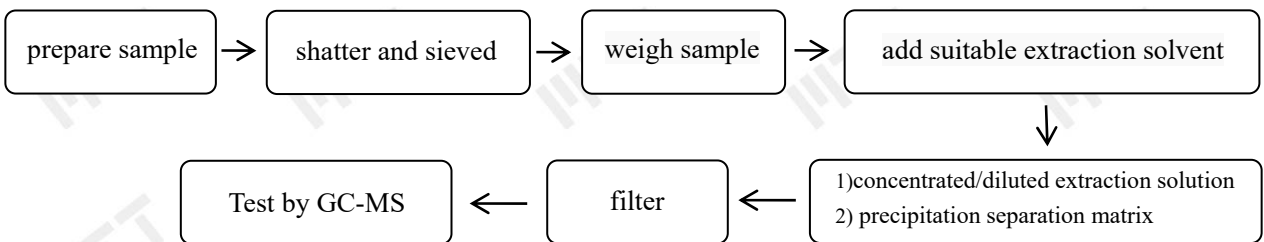
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## Appendix 3

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



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



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**Annotations: /**

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

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