



**Test Report No. 68.402.21.0637.01**  
**Rev. 01**  
**Dated 2021-07-07**

Applicant: Guangdong Shiner Packaging Co., Ltd.  
Address: Building F, Longsheng high-tech Industrial Park, Matigang Village, Dalingshan Town, Dongguan, Guangdong, 523810, China  
Attn.: Mr. Cheng  
Sample Description: Air column packaging  
Model No.: /  
Supplier: Shinerpack  
Country of origin: China  
Sample Received Date: 2021-06-28  
Test Period: From 2021-06-28 to 2021-07-01  
Location of Testing: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
Purpose of examination: RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863 on submitted samples  
Test Result: Refer to following page(s)  
Remark: The result relates only to the items tested.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
TÜV SÜD Group

Prepared by:

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Reviewed by:

Scarlett Liang  
Designated Reviewer

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**SUMMARY OF TEST RESULTS**

No.	Test Requested	Conclusion	Remarks
1.	Heavy Metal (Pb, Cd, Hg and Cr VI) Content	<b>PASS</b>	
2.	Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content	<b>PASS</b>	
3.	Phthalates (DEHP, BBP, DBP and DIBP) Content	<b>PASS</b>	



1. TESTED SUBJECT DESCRIPTION

Test No.	Sample No.	Tested Material Description	Photo
T1	001	Transparent/white plastic with green printing (PA/PE)	



## 2. TEST RESULTS

### 2.1. HEAVY METAL CONTENT

Test method: With reference to EN 62321-4:2014 /A1:2017, EN 62321-5:2014, EN 62321-7-1:2015 and EN 62321-7-2:2017, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and Ultraviolet-visible spectrophotometer (UV-Vis). [Reporting Limit: 2.0 mg/kg for Cadmium; 10.0 mg/kg or 0.10  $\mu\text{g}/\text{cm}^2$  for Hexavalent Chromium, 10.0 mg/kg for Lead and Mercury.]

Sample No.	Result				
	Total Cadmium	Hexavalent Chromium	Hexavalent Chromium	Total Mercury	Total Lead
001	<2.0	<10.0	/	<10.0	<10.0
Unit	mg/kg	mg/kg	$\mu\text{g}/\text{cm}^2$	mg/kg	mg/kg
RoHS Requirement	100	1000	Negative <sup>#</sup>	1000	1000

Note:

- “mg/kg” denotes milligram per kilogram
- “ $\mu\text{g}/\text{cm}^2$ ” denotes micrograms per square centimeter
- “<” denotes less than
- “Negative” denotes the absorbance value of sample is < 0.10  $\mu\text{g}/\text{cm}^2$ , the sample is considered to be negative for Hexavalent Chromium.
- “#” According to DIRECTIVE 2011/65/EU Article 4(1) and Annex II. While, positive means the presence of CrVI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1) and Annex II.

## 2.2. POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting Limit: 5 mg/kg]

Test Item		Result [mg/kg]	RoHS Requirement [mg/kg]
		Sample 001	
PBBs	Monobromobiphenyl	< 5	Sum of PBBs 1000
	Dibromobiphenyl	< 5	
	Tribromobiphenyl	< 5	
	Tetrabromobiphenyl	< 5	
	Pentabromobiphenyl	< 5	
	Hexabromobiphenyl	< 5	
	Heptabromobiphenyl	< 5	
	Octabromobiphenyl	< 5	
	Nonabromobiphenyl	< 5	
	Decabromobiphenyl	< 5	
	Sum of PBBs	< 50	
PBDEs	Monobromodiphenyl Ether	< 5	Sum of PBDEs 1000
	Dibromodiphenyl Ether	< 5	
	Tribromodiphenyl Ether	< 5	
	Tetrabromodiphenyl Ether	< 5	
	Pentabromodiphenyl Ether	< 5	
	Hexabromodiphenyl Ether	< 5	
	Heptabromodiphenyl Ether	< 5	
	Octabromodiphenyl Ether	< 5	
	Nonabromodiphenyl Ether	< 5	
	Decabromodiphenyl Ether	< 5	
	Sum of PBDEs	< 50	

Note:

- “mg/kg” denotes miligram per kilogram
- “<” denotes less than

### 2.3. PHTHALATES CONTENT TEST

Test method: With reference to EN 62321-8:2017, extracted by organic solvent and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting limit: 100 mg/kg]

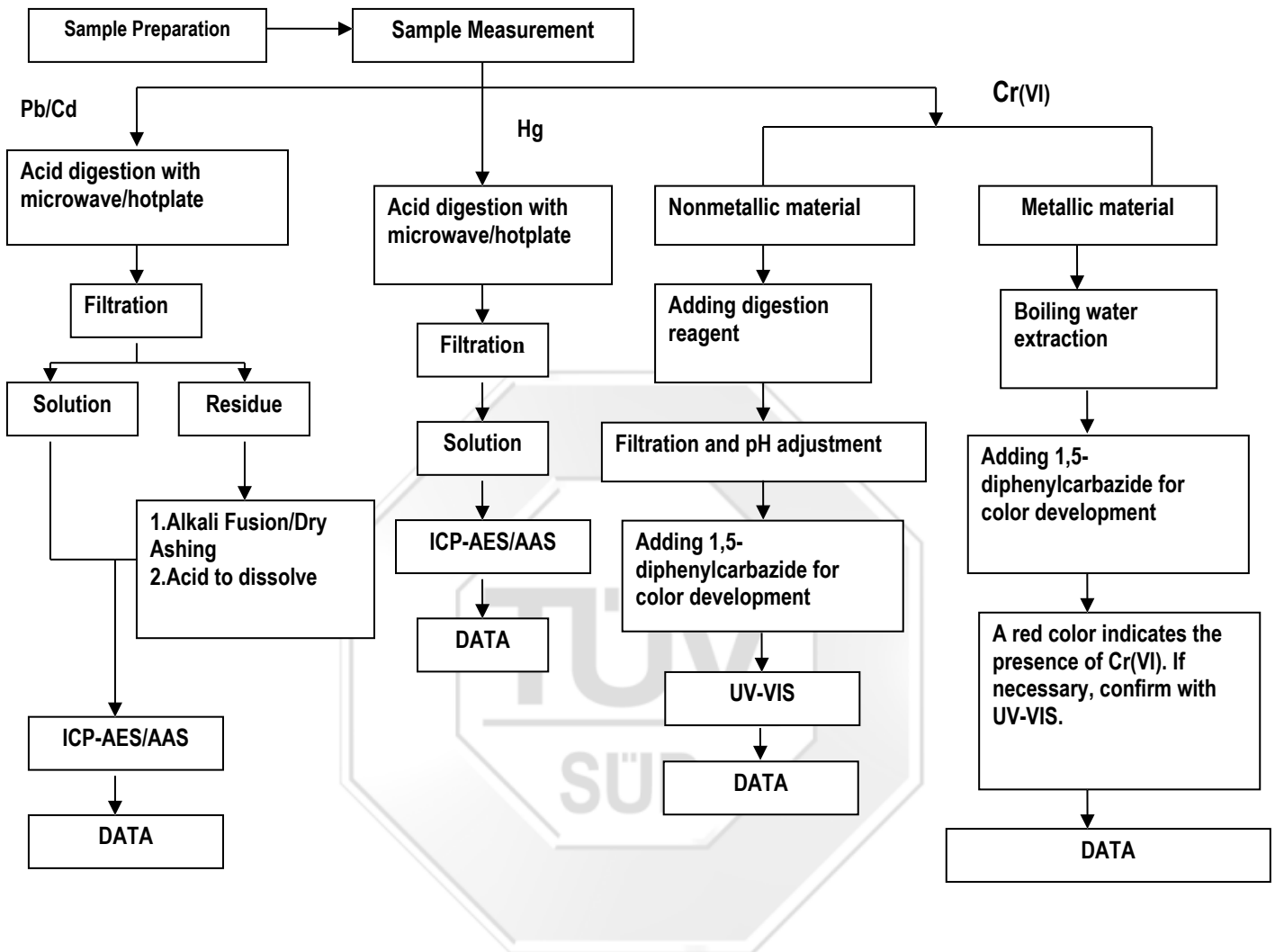
Test Item	Result [mg/kg]	RoHS Requirement [mg/kg]
	Sample 001	
Di-(2-ethyl-hexyl) Phthalate (DEHP)	< 100	1000
Butyl-benzyl Phthalate (BBP)	< 100	1000
Di-butyl Phthalate (DBP)	< 100	1000
Di-iso-butyl Phthalate (DIBP)	< 100	1000

Note:

- “mg/kg” denotes miligram per kilogram
- “<” denotes less than

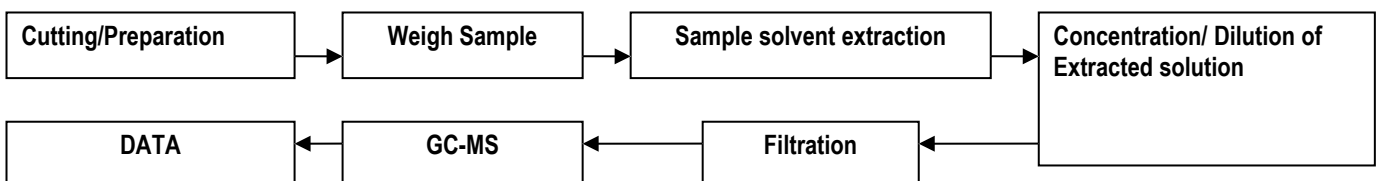


**APPENDIX RoHS Testing Procedure Flowchart**



These sample were dissolved totally by pre-conditioning method according to above flow chart(Cr(VI) test method excluded)

**PBBs/PBDEs, Phthalates**



-----End of Report-----