

**Test Report**

No. VNHL2103004611EE-01

Date: March 24, 2021

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This report cancels and supersedes the report No **VNHL2103004611EE** dated March 23, 2021 issued by SGS Vietnam

**AAL-E PRODUCTION AND TRADING CO., LTD**

LOT VI-6.3, ROAD 2, TAN DONG HIEP B INDUSTRIAL PARK, DI AN CITY, BINH DUONG PROVINCE, VIET NAM.

The following sample was submitted and identified on behalf of the client as below:

SGS Job No. : VNHL2103004611EE-01

Sample Description : "ANODIZE/ MIL A 8625F/ TYPE II/ CLASS 2 – CO MAU"

Characteristic : ALUMINUM ALLOY

Country of Origin : VIET NAM

Manufacturer : AAL-E PRODUCTION AND TRADING CO., LTD

Sample Receiving Date : MARCH 17, 2021

Final confirmed Date : MARCH 17, 2021

Testing Period : MARCH 17, 2021 TO MARCH 23, 2021

Test Requested : PLEASE REFER TO THE RESULT SUMMARY

Test Results : PLEASE REFER TO NEXT PAGE(S).

## Result Summary

Test Requested	Result (s)
<b>RoHS Directive 2011/65/EU Annex II [amended by Directive (EU) 2015/863]</b> (Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)) – <b>As client's requirement</b>	Pass

Signed for and on behalf of

**SGS Vietnam LTD****To Ka Wing**

Chemical Lab Manager

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**Test results:**

**Test Part Description:**

Component No.	Description	Material	Color
1	BLACK METAL (ANODIZE/ MIL A 8625F/ TYPE II/ CLASS 2 – CO MAU)	METAL	BLACK

**RoHS Directive 2011/65/EU Annex II [amended by Directive (EU) 2015/863]**

Test Item(s):	Unit	Test Method	Results	RL	Limit	
			1			
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Cd by ICP-OES)	ND	2	100	
Lead (Pb)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Pb by ICP-OES)	ND	2	1000	
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013 (Determination of Hg by ICP-OES)	ND	2	1000	
Hexavalent Chromium (CrVI) #	µg/cm <sup>2</sup>	With reference to IEC 62321-7-1:2015 (Determination of CrVI by UV-VIS)	ND	0.10	-	
<b>Sum of PBBs</b>	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBB by GC-MS)	ND	-	1000	
Monobromobiphenyl	mg/kg		ND	5	-	
Dibromobiphenyl	mg/kg		ND	5	-	
Tribromobiphenyl	mg/kg		ND	5	-	
Tetrabromobiphenyl	mg/kg		ND	5	-	
Hexabromobiphenyl	mg/kg		ND	5	-	
Pentabromobiphenyl	mg/kg		ND	5	-	
Heptabromobiphenyl	mg/kg		ND	5	-	
Octabromobiphenyl	mg/kg		ND	5	-	
Nonabromobiphenyl	mg/kg		ND	5	-	
Decabromobiphenyl	mg/kg		ND	5	-	
<b>Sum of PBDEs</b>	mg/kg		With reference to IEC 62321-6:2015 (Determination of PBDE by GC-MS)	ND	-	1000
Monobromodiphenyl ether	mg/kg			ND	5	-
Dibromodiphenyl ether	mg/kg	ND		5	-	
Tribromodiphenyl ether	mg/kg	ND		5	-	
Tetrabromodiphenyl ether	mg/kg	ND		5	-	
Pentabromodiphenyl ether	mg/kg	ND		5	-	
Hexabromodiphenyl ether	mg/kg	ND		5	-	
Heptabromodiphenyl ether	mg/kg	ND		5	-	
Octabromodiphenyl ether	mg/kg	ND		5	-	
Nonabromodiphenyl ether	mg/kg	ND		5	-	
Decabromodiphenyl ether	mg/kg	ND	5	-		

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Test Item(s):	Unit	Test Method	Results	RL	Limit
			1		
Bis (2-ethylhexyl) phthalate (DEHP)	mg/kg	With reference to IEC 62321-8:2017 (Determination of DEHP by GC-MS)	ND	50	1000
Butyl benzyl phthalate (BBP)	mg/kg	With reference to IEC 62321-8:2017 (Determination of BBP by GC-MS)	ND	50	1000
Dibutyl phthalate (DBP)	mg/kg	With reference to IEC 62321-8:2017 (Determination of DBP by GC-MS)	ND	50	1000
Diisobutyl phthalate (DIBP)	mg/kg	With reference to IEC 62321-8:2017 (Determination of DIBP by GC-MS)	ND	50	1000

**Note:**

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. RL = Reporting Limit
3. ND = Not detected
4. # =
  - a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm<sup>2</sup>.  
The sample coating is considered to contain CrVI
  - b. The sample is negative for CrVI if CrVI is n.d. (concentration less than 0.10 µg/cm<sup>2</sup>).  
The coating is considered a non-CrVI based coating
  - c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive – unavoidable coating variations may influence the determination
5. - = not regulated
6. IEC 62321 is equivalent to EN 62321  
[http://www.cenelec.eu/dyn/www/f?p=104:110:721668440899381:::FSP\\_PROJECT,FSP\\_LANG\\_ID:20662,25](http://www.cenelec.eu/dyn/www/f?p=104:110:721668440899381:::FSP_PROJECT,FSP_LANG_ID:20662,25).
7. The above test(s) was / were accredited ISO 17025:2017 by VILAS  
The above test(s) was / were performed by SGS VN's Chemical lab.

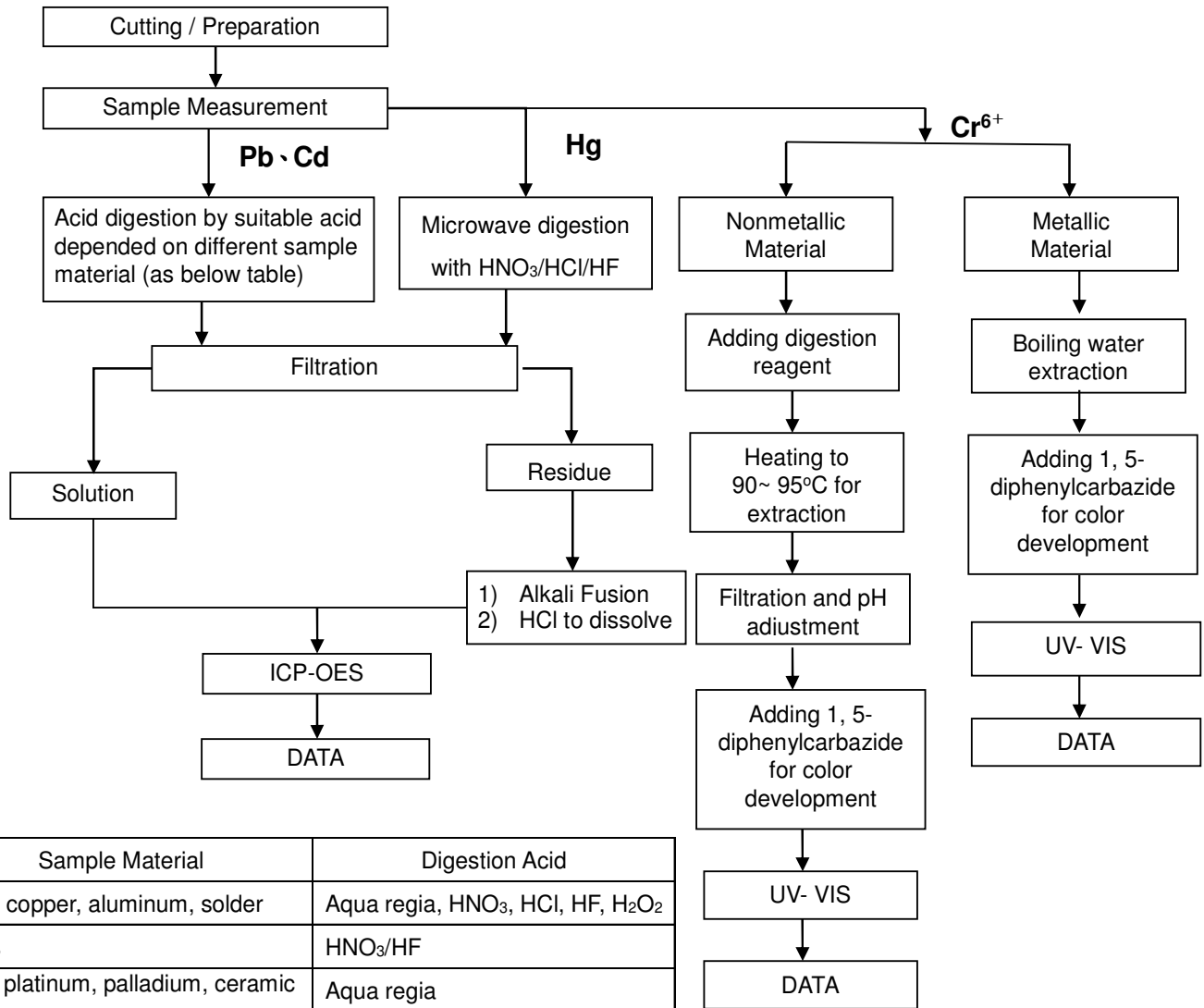
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**Flow Chart for RoHS: Pb/Cd/Hg/Cr<sup>6+</sup> Testing**

The samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Any acid to total digestion

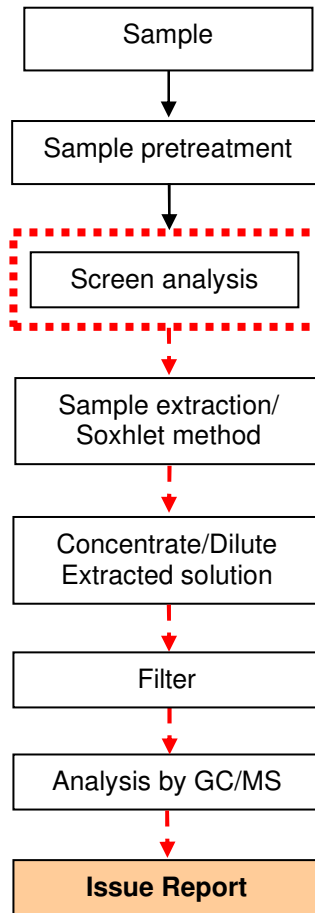
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PBB/PBDE analytical FLOW CHART

First testing process →  
 Optional screen process .....  
 Confirmation process ->



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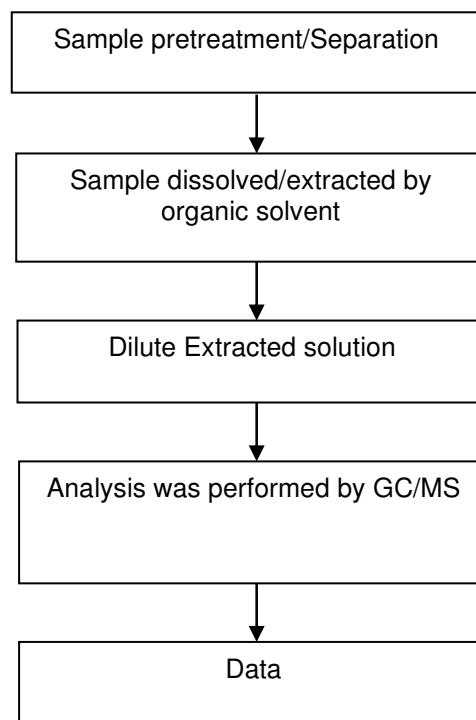
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Analytical flow chart of phthalate content

Test method: IEC 62321-8: 2017

First testing process →  
Optional screen process .....  
Confirmation process ->



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PHOTO OF SUBMITTED SAMPLE FOR TESTING



REPORT RESULTS REFER TO SUBMITTED SAMPLE (S) ONLY

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

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