

# Test Report

Report No.: AGC03507191204-001


Date: Dec.25, 2019

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Applicant: MID OCEAN BRANDS B.V  
Address: 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong  
Test site: 1,6/F.,Building 2,No. 1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China

## Report on the submitted samples said to be:

Sample Name : Mikado in wooden box  
Model No. : MO9189  
Country of origin : CHINA  
Country of destination : EUROPE  
Labeled Age Grading : Not stated  
Requested Age Grading : 3+  
Age Group Applied in Testing : 3+  
Sample Receiving Date : Dec.12, 2019  
Testing Period : Dec.12, 2019 to Dec.25, 2019  
Sample receiving state : Normal  
Test Requested : Please refer to next pages.  
Test Method : Please refer to next pages.  
Test Result : Please refer to next pages.

Approved by: 

Qinlianzhi, Reed

Laboratory Supervisor

Approved by: 

Liulinwen, Lewis

Technical Director



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## Test Requested:

## Conclusion

1.(1) For compliance with the European Standard on Safety of Toys:

EN71-1: 2014+A1:2018 – Mechanical and Physical Properties

Pass

EN71-2:2011+A1:2014 – Flammability of Toys

Pass

EN71-3:2019 –Migration of certain elements

Pass

(2) Labeling requirement (Washing/Cleaning Label, CE mark, importer / manufacturer mark

Pass

(name, address), product identification) according to the Directive 2009/48/EC-Safety of toys

2. As specified by client, to determine the Lead compounds content in the submitted sample(s) with reference to entry 63, Annex XVII of the REACH Regulation (EC) No 1907/2006.

Pass

3. As specified by client, to determine the Cadmium(Cd)content in the submitted sample(s) with reference to entry 23, Annex XVII of the REACH Regulation (EC) No 1907/2006.

Pass

4. As specified by client, to determine the Polycyclic Aromatic Hydrocarbons (PAHs) content in the submitted sample(s) with reference to entry 50, Annex XVII of the REACH Regulation (EC) No 1907/2006.

Pass

5. As specified by client, to determine the phthalates content in the submitted sample(s) with reference to entry 51 and its amendment (EU)2018/2005& entry 52, Annex XVII of the REACH Regulation (EC) No 1907/2006 and Amendment Regulation (EC) No 552/2009.

Pass

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**No.18 C**

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Add: Building 2, No.171, Meihua Road, Shangmeilin, Futian District, Shenzhen, Guangdong China

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**1.Test Result(s):**
**(1)-1:EN71 Part 1: 2014+A1:2018 - Mechanical and Physical Properties**

Clause	Description	Result
4	GENERAL REQUIREMENTS	
4.1	Material cleanliness	Pass
4.2	Assembly	N/A
4.3	Flexible plastics sheeting	N/A
4.4	Toy bags	N/A
4.5	Glass	N/A
4.6	Expanding materials	N/A
4.7	Edges	Pass
4.8	Points and metallic wires	Pass
4.9	Protruding parts	N/A
4.10	Parts moving against each other	N/A
4.10.1	Folding and sliding mechanisms	N/A
4.10.2	Driving mechanisms	N/A
4.10.3	Hinges	N/A
4.10.4	Springs	N/A
4.11	Mouth-actuated toys and other toys intended to be put in the mouth	N/A
4.12	Balloons	N/A
4.13	Cords of toy kites and other flying toys	N/A
4.14	Enclosures	N/A
4.15	Toys intended to bear the mass of a child	N/A
4.16	Heavy immobile toys	N/A
4.17	Projectiles	N/A
4.18	Aquatic toys and inflatable toys	N/A
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	N/A
4.20	Acoustics	N/A
4.21	Toys containing a non-electrical heat source	N/A
4.22	Small balls	N/A

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Clause	Description	Result
4.23	Magnets	N/A
4.24	Yo-yo balls	N/A
4.25	Toys attached to food	N/A
4.26	Toy Disguise Costumes	N/A
4.27	Flying toys	N/A
5	TOYS INTENDED FOR CHILDREN UNDER 36 MONTHS	
5.1	General requirements	N/A
5.2	Filling materials	N/A
5.3	Plastic sheeting	N/A
5.4	Cords, chains and electrical cables in toys	N/A
5.5	Liquid-filled toys	N/A
5.6	Speed limitation of electrically driven toys	N/A
5.7	Glass and porcelain	N/A
5.8	Shape and size of certain toys	N/A
5.9	Toys comprising monofilament fibres	N/A
5.10	Small balls	N/A
5.11	Play figures	N/A
5.12	Hemispheric-shaped toys	N/A
5.13	Suction cups	N/A
5.14	Straps intended to be worn fully or partially around the neck	N/A
5.15	Sledges with cords for pulling	N/A
6	PACKAGING	N/A
7	Warnings, markings and instructions for use	Pass

**Note:**
**N/A=Not Application**
**As per client's requirement, the sample(s) was evaluated for use by children 3+**

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**(1)-2:EN71 Part 2:2011+A1:2014 - Flammability of Toys**

Clause	Description	Result
4	Requirements	
4.1	General	Pass
4.2	Toys to be worn on the head	N/A
4.2.1	General	N/A
4.2.2	Beards, moustaches, wigs, etc, made from hair, pile or material with similar features (e.g. freehanging ribbons, paper or cloth strands), which protrude more than or equal to 50 mm from the surface of the toy	N/A
4.2.3	Beards, moustaches, wigs etc. made from hair, pile or material with similar features (e.g. freehanging ribbons, paper or cloth strands etc.), which protrude less than 50 mm from the surface of the toy	N/A
4.2.4	Full or partial moulded head masks	N/A
4.2.5	Flowing elements of toys to be worn on the head (except those covered by 4.2.2 and 4.2.3), hoods, head-dresses etc. and fabric masks which partially or fully cover the head, but excluding those items covered by 4.3	N/A
4.3	Toys disguise costumes and other toys intended to be worn by a child in play	N/A
4.4	Toys intended to be entered by a child	N/A
4.5	Soft Filled Toys (animals and dolls, etc) with a piled or textile surface	N/A

**Note :**  
**N/A=Not Application**

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**(1)-3 EN 71-3: 2019- Migration of Certain Elements.**
**Category III: Scrapped - off toy material**
**Test method:** EN 71-3:2019, Analysis was performed by ICP-OES, GC-MS, LC-ICP-MS.

Unit: mg/kg

Tested Item(s)	Result(s)					MDL	Limit
	1-1	1-2#	1-3#	1-4#	1-5#		
Aluminum (Al) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	50	See Remark
Antimony (Sb) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	2.0	
Arsenic (As) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	0.5	
Barium (Ba) (M)	N.D.	N.D.	80	N.D.	N.D.	50	
Boron (B) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	50	
Cadmium (Cd) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	0.3	
Chromium III (Cr(III)) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	
Chromium VI (Cr(VI)) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	0.005	
Cobalt (Co) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	2.5	
Copper (Cu) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	50	
Lead (Pb) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	0.25	
Manganese (Mn) (M)	255	N.D.	N.D.	N.D.	N.D.	50	
Mercury (Hg) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	1.0	
Nickel (Ni) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	10	
Selenium (Se) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	5	
Strontium (Sr) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	50	
Tin (Sn) (M)	N.D.	N.D.	N.D.	N.D.	N.D.	50	
Organic Tin* (M)	N.D.	N.D.	N.D.	N.D.	N.D.	0.15	
Zinc (Zn) (M)	N.D.	N.D.	65	N.D.	N.D.	50	
<b>Conclusion</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/	

- Note:**
1. N.D.= Not Detected (lower than method detection limit)
  - 2.MDL = Method detection limit
  - 3.mg/kg = milligram per kilogram
  - 4.M = Migration
  - 5.\* = Migration of organic tin is expressed as tributyl tin cation content in mg/kg.
  6. As specified by client, only test the designated sample.
  - 7.#= The result of wet sample.
  8. Test result on specimen No.1-3 was resubmitted on Dec.23, 2019.

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## 9. Raw material sampling: No.1-3

## Permissible Limit for Different Materials

Item	Category III In scraped-off toy material	Category II In liquid or sticky toy material	Category I In dry, brittle, powder-like or pliable toy material
Aluminum (Al) (M)	70000	1406	5625
Antimony (Sb) (M)	560	11.3	45
Arsenic (As) (M)	47	0.9	3.8
Barium (Ba) (M)	18750	375	1500
Boron (B) (M)	15000	300	1200
Cadmium (Cd) (M)	17	0.3	1.3
Chromium III(Cr(III)) (M)	460	9.4	37.5
Chromium VI (Cr(VI)) (M)	0.053	0.005	0.02
Cobalt (Co) (M)	130	2.6	10.5
Copper (Cu) (M)	7700	156	622.5
Lead (Pb) (M)	23	0.5	2.0
Manganese (Mn) (M)	15000	300	1200
Mercury (Hg) (M)	94	1.9	7.5
Nickel (Ni) (M)	930	18.8	75
Selenium (Se) (M)	460	9.4	37.5
Strontium (Sr) (M)	56000	1125	4500
Tin (Sn) (M)	180000	3750	15000
Organic Tin (M)	12	0.2	0.9
Zinc (Zn) (M)	46000	938	3750

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**(2) Labeling requirement (Washing/Cleaning Label, CE mark, importer / manufacturer mark (name, address), product identification) according to the Directive 2009/48/EC-Safety of toys**

Summary table:

	On product	On packaging
Washing/Cleaning instruction	/	/
CE mark	Present	Present
Manufacturer's name	Absent	Absent
Manufacturer's address	Absent	Absent
Importer's name	Absent	Present
Importer's address	Absent	Present
Product ID	Absent	Present

**Remark :**

- 1: Washing/Cleaning label According to Directive 2009/48/EC the following safety requirements apply regarding cleaning and washing: A toy intended for use by children under 36 months must be designed and manufactured in such a way that it can be cleaned. A textile toy must, to this end, be washable, except if it contains a mechanism that may be damaged if soak washed. The toy must fulfill the safety requirements also after having been cleaned in accordance with this point and the manufacturer's instructions. The manufacturer should, if applicable, provide instructions on how the toy has to be cleaned.
- 2: Toys made available on the market must bear the CE marking. The CE marking must be subject to the general principles set out in Article 30 of Regulation (EC) No 765/2008. The CE marking must be affixed visibly, legibly and indelibly to the toy, to an affixed label or to the packaging. In the case of small toys and toys consisting of small parts, the CE marking may alternatively be affixed to a label or an accompanying leaflet. Where, in the case of toys sold in counter displays, that is not technically possible, and on condition that the counter display was originally used as packaging for the toy, the CE marking may be affixed to the counter display. Where the CE marking is not visible from outside the packaging, if any, it shall as a minimum be affixed to the packaging. Where specific legislation does not impose specific dimensions, the CE marking must be at least 5 mm high.
- 3: The manufacturer's name, registered trade name or registered trade mark and the address at which the manufacturer can be contacted must be indicated on the toy or, where that is not possible, on its packaging or in a document accompanying the toy. This requirement applies also to the name and address etc. of any importer.
- 4: Manufacturers must ensure that their toys bear a type, batch, serial or model number or other element allowing their identification, or where the size or nature of the toy does not allow it, that the required information is provided on the packaging or in a document accompanying the toy

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**2. Test Result(s) of Lead and Lead compounds content**

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)					Limit
			1-1	1-2#	1-3#	1-4#	1-5#	
<b>Lead (Pb)</b>	IEC 62321-5:2013	10	N.D.	N.D.	N.D.	N.D.	N.D.	500
<b>Conclusion</b>	ICP-OES	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

- Note:**
1. MDL=Method Detection Limit
  2. N.D.=Not Detected(less than method detection limit)
  3. As specified by client, only test the designated sample
  4. #= The result of wet sample.
  5. Test result on specimen No.1-3 was resubmitted on Dec.23, 2019.
  6. Raw material sampling: No.1-3

**3. Test Result(s) of Cd content**

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)					Limit
			1-1	1-2#	1-3#	1-4#	1-5#	
<b>Cadmium (Cd)</b>	IEC 62321-5:2013	10	N.D.	N.D.	N.D.	N.D.	N.D.	100
<b>Conclusion</b>	ICP-OES	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

- Note:**
1. MDL=Method Detection Limit
  2. N.D.=Not Detected(less than method detection limit)
  3. As specified by client, only test the designated sample
  4. #= The result of wet sample.

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**4. Test Result(s) of Polycyclic Aromatic Hydrocarbons (PAHs)**

Unit: mg/kg

Test Item(s)	Test Method /Equipment	MDL	Result(s)				Limit
			1-2#	1-3#	1-4#	1-5#	
Benzo[a]anthracene (BaA)	AfPS GS 2014:01 PAK GC-MS	0.1	N.D.	N.D.	N.D.	N.D.	0.5
Chrysene (CHR)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
Benzo[b]fluoranthene (BbFA)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
Benzo[k]fluoranthene (BkFA)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
Benzo[j]fluoranthene (BjFA)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
Benzo[a]pyrene (BaP)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
Benzo[e]pyrene(BeP)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
Dibenzo[a,h]anthracene (DBA <sub>h</sub> A)		0.1	N.D.	N.D.	N.D.	N.D.	0.5
<b>Sum of 8 PAHs</b>		—	N.D.	N.D.	N.D.	N.D.	—
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

- Note:**
1. MDL=Method Detection Limit
  2. N.D.=Not Detected(less than method detection limit)
  3. “—”=Not regulated
  4. As specified by client, only test the designated sample.
  5. #= The result of wet sample.

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**5. Test Result(s) of phthalates content**

Unit: %, w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			1-2#	1-3#	1-4#	1-5#	
Dibutyl phthalate (DBP)	EN 14372:2004 GC-MS	0.01	N.D.	N.D.	N.D.	N.D.	0.1
Butylbenzyl phthalate (BBP)		0.01	N.D.	N.D.	N.D.	N.D.	0.1
Di- (2-ethylhexyl) phthalate (DEHP)		0.01	N.D.	N.D.	N.D.	N.D.	0.1
Diisobutyl phthalate (DIBP)		0.01	N.D.	N.D.	N.D.	N.D.	0.1
<b>Sum of DBP+BBP+DEHP+DIBP</b>		—	N.D.	N.D.	N.D.	N.D.	0.1
Di-n-octyl phthalate (DNOP)		0.01	N.D.	N.D.	N.D.	N.D.	-
Di-isononyl phthalate (DINP)		0.01	N.D.	N.D.	N.D.	N.D.	
Di-isodecyl phthalate (DIDP)		0.01	N.D.	N.D.	N.D.	N.D.	
<b>Sum of DNOP+DINP+DIDP</b>		—	N.D.	N.D.	N.D.	N.D.	0.1
<b>Conclusion</b>			/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

- Note:**
- 0.1%,w/w =1000mg/kg
  - MDL=method detection limit
  - N.D.=not detected (less than method detection limit)
  - “—”=Not regulated
  - As specified by client, only test the designated sample
  - #= The result of wet sample.

**Sample Description**

1-1	Wooden box
1-2	Red coating
1-3	Yellow coating
1-4	Blue coating
1-5	Black coating

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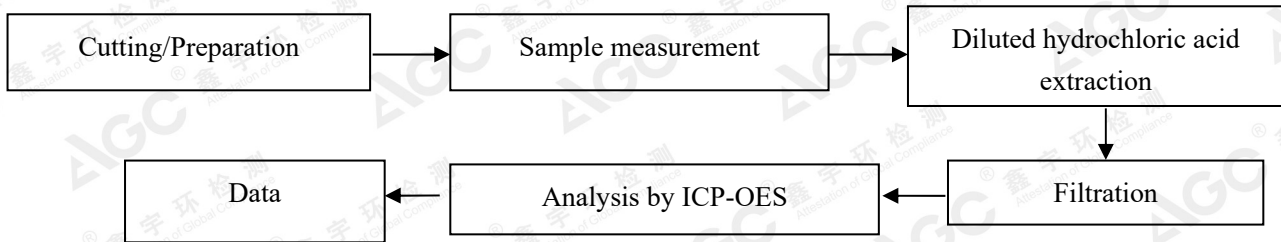
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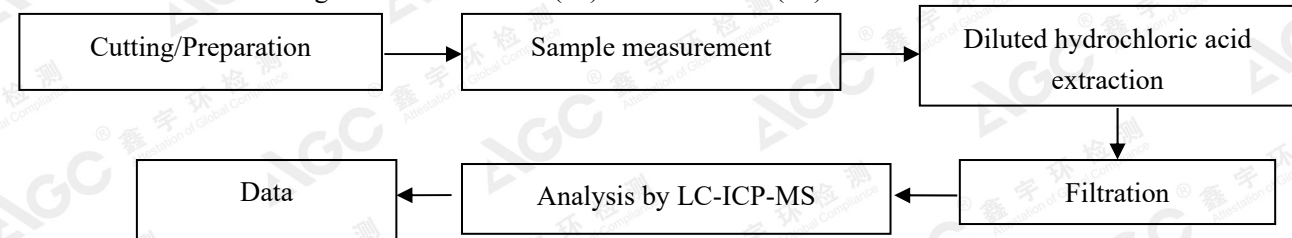
## Test Flow Chart

1. For EN71

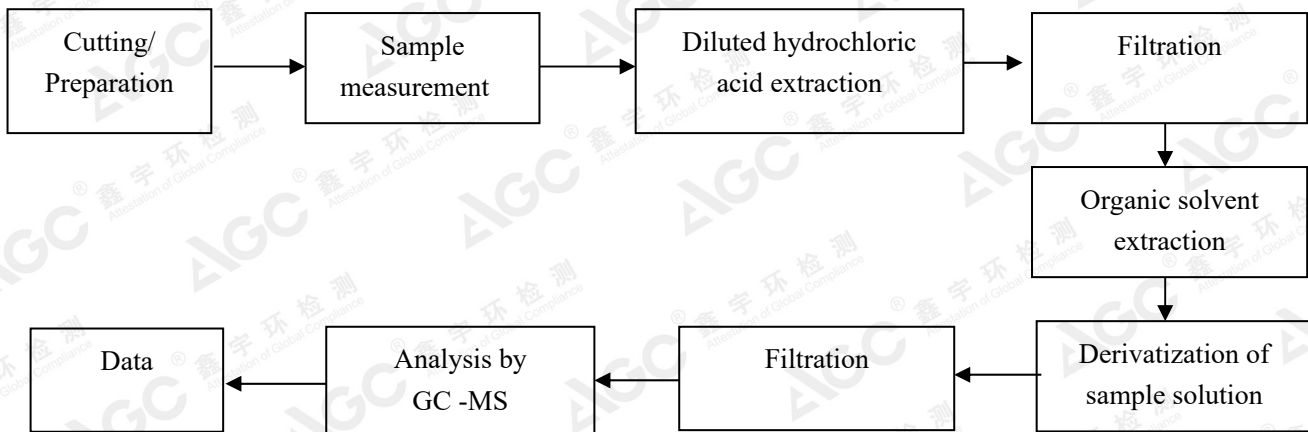
① Test Flow Chart for Migration of 17 Heavy Metals-Lead, Cadmium, Chromium, Mercury, Antimony, Barium, Arsenic, Selenium, Aluminum, Boron, Cobalt, Copper, Manganese, Nickel, Strontium, Zinc and Tin:



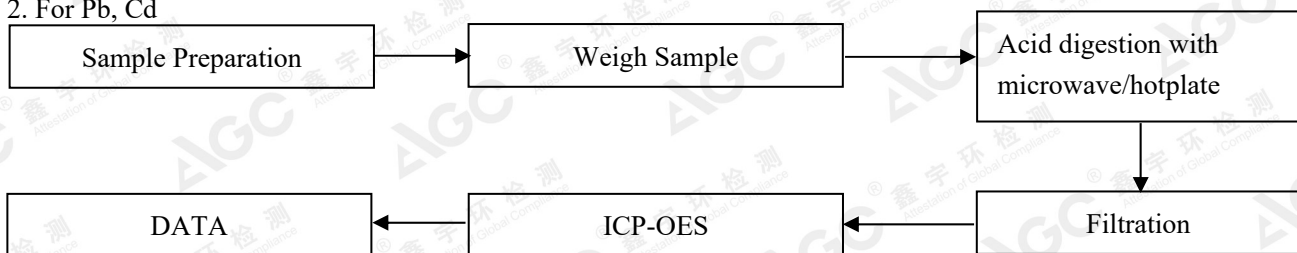
② Test Flow Chart for Migration of Chromium(III) and Chromium(VI):



③ Test Flow Chart for Migration of Organic Tin Compounds:



2. For Pb, Cd



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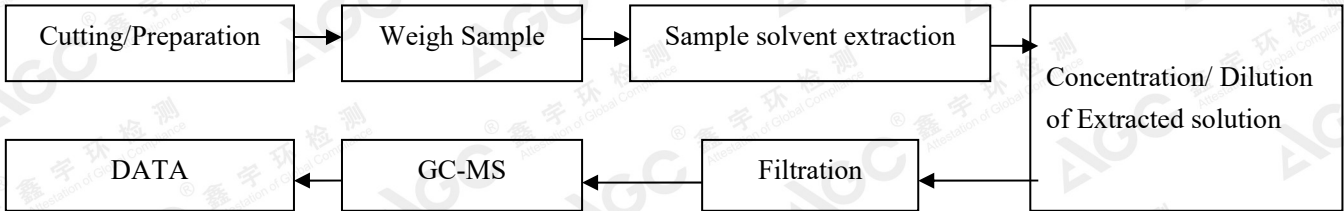
# Test Report

Report No.: AGC03507191204-001

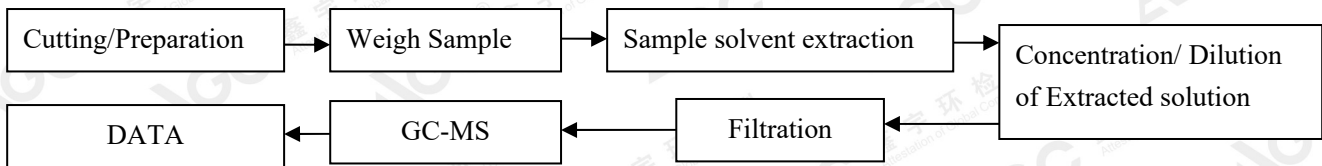
Date: Dec.25, 2019

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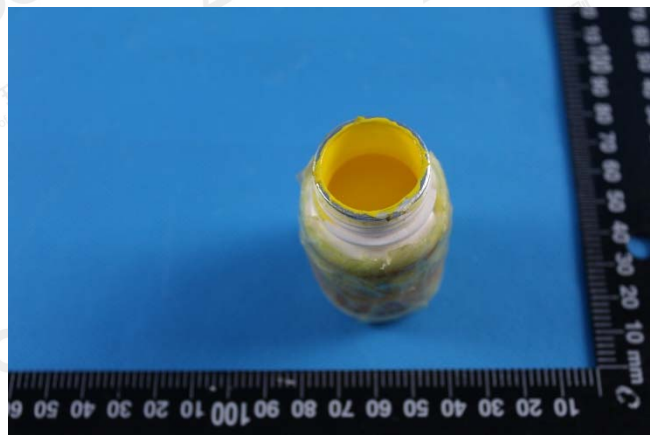
### 3. For PAHs



### 4. For phthalates



### The photo of the sample



**AGC03507191204-001**

AGC authenticate the photo on original report only

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

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