
Test Report

Report No. : AGC05443231051-001S1

SAMPLE NAME : Recycled Aluminium twist stylus pen
MODEL NAME : MO2157
APPLICANT : MID OCEAN BRANDS B.V.
STANDARD(S) : Please refer to the following page(s).
DATE OF ISSUE : Sep. 19, 2024

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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 : 6/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

Report on the submitted sample(s) said to be:

Sample Name : Recycled Aluminium twist stylus pen
Model : MO2157
Vendor code : 118966
Country of Origin : CHINA
Country of Destination : EUROPE
Sample Received Date : Oct. 30, 2023 (Other items)
Aug. 12, 2024 (Nickel Release)
Testing Period : Oct. 30, 2023 to Nov. 02, 2023 (Other items)
Aug. 12, 2024 to Sep. 18, 2024 (Nickel Release)
Test Requested : Selected test(s) as requested by client.

Test Requested:**Conclusion**

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 63
- Lead(Pb) Content

Pass

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 23
-Cadmium(Cd) Content

Pass

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 51&52
- Phthalates Content

Pass

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 50
- Polycyclic-aromatic Hydrocarbons (PAHs) Content

Pass

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 27
- Nickel Release

Pass

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Report Revise Record

Report Version	Issued Date	Valid Version	Notes
/	Nov. 02, 2023	Invalid	Initial release
S1	Sep. 19, 2024	Valid	Add test items

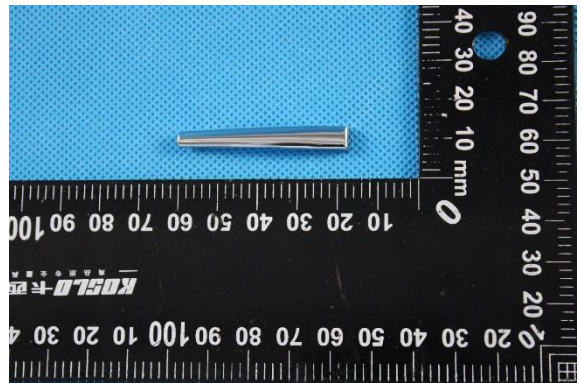
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The photo of the sample



The photo of AGC05443231051-001S1 is for use only with the original report.

Test Point Description

Test point	Test point description
1-1	Silver coating+Silver coating (pen tip)
1-2	White coating+Black coating+Blue coating
1-3	Plastic pen tip
1-4	Black rubber
1-5	Blue plastic (inner)+White plastic (inside)+Transparent plastic refill tube
1-6	Blue ink
1-7	Metal ring
1-8	Metal pen holder
1-9	Metal inner pen tube
1-10	Metal pen clip

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Test Results:

Note: N.D.=Not Detected (less than method detection limit), MDL = Method Detection Limit, 1mg/kg=0.0001%

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 63
- Lead(Pb) Content

Test Methods and Equipment: IEC 62321-5:2013; ICP-OES

Test Item(s)	Unit	Limit	MDL	Test Result(s)		
				1-1	1-2	1-3
Lead(Pb)	mg/kg	500	10	N.D.	N.D.	N.D.
Conclusion				Conformity	Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)		
				1-4	1-5	1-6
Lead(Pb)	mg/kg	500	10	N.D.	N.D.	N.D.
Conclusion				Conformity	Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)		
				1-7	1-8	1-9
Lead(Pb)	mg/kg	500	10	19	17	N.D.
Conclusion				Conformity	Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-10	
Lead(Pb)	mg/kg	500	10	N.D.	
Conclusion				Conformity	

Remark:

1. As specified by client, the submitted samples were mixed to test, the test points: 1-1,1-2,1-5
2. As specified by client, the submitted samples were directly tested without drying, the test points: 1-6

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 23
-Cadmium(Cd) Content

Test Methods and Equipment: IEC 62321-5:2013; ICP-OES

Test Item(s)	Unit	Limit	MDL	Test Result(s)		
				1-1	1-2	1-3
Cadmium(Cd)	mg/kg	100	10	N.D.	N.D.	N.D.
Conclusion				Conformity	Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-4	1-5
Cadmium(Cd)	mg/kg	100	10	N.D.	N.D.
Conclusion				Conformity	Conformity

Remark:

1. As specified by client, the submitted samples were mixed to test, the test points: 1-1,1-2,1-5

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Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 51&52

- Phthalates Content

Test Methods and Equipment: IEC 62321-8:2017; GC-MS

Test Item(s)	Unit	Limit	MDL	Test Result(s)		
				1-1	1-2	1-3
Diisobutyl phthalate (DIBP) CAS:84-69-5	%	0.1	0.005	N.D.	N.D.	N.D.
Dibutyl phthalate (DBP) CAS:84-74-2	%	0.1	0.005	N.D.	N.D.	N.D.
Butylbenzyl phthalate (BBP) CAS:85-68-7	%	0.1	0.005	N.D.	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate (DEHP) CAS:117-81-7	%	0.1	0.005	N.D.	N.D.	N.D.
Di-n-octyl phthalate (DNOP) CAS:117-84-0	%	/	0.005	N.D.	N.D.	N.D.
Di-isononyl phthalate (DINP) CAS:28553-12-0, 68515-48-0	%	/	0.005	N.D.	N.D.	N.D.
Di-isodecyl phthalate(DIDP) CAS:26761-40-0, 68515-49-1	%	/	0.005	N.D.	N.D.	N.D.
Sum of DIBP+DBP+BBP+DEHP	%	0.1	/	N.D.	N.D.	N.D.
Sum of DNOP+DINP+DIDP	%	0.1	/	N.D.	N.D.	N.D.
Conclusion				Conformity	Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-4	1-5
Diisobutyl phthalate (DIBP) CAS:84-69-5	%	0.1	0.005	N.D.	N.D.
Dibutyl phthalate (DBP) CAS:84-74-2	%	0.1	0.005	N.D.	N.D.
Butylbenzyl phthalate (BBP) CAS:85-68-7	%	0.1	0.005	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate (DEHP) CAS:117-81-7	%	0.1	0.005	N.D.	N.D.
Di-n-octyl phthalate (DNOP) CAS:117-84-0	%	/	0.005	N.D.	N.D.
Di-isononyl phthalate (DINP) CAS:28553-12-0, 68515-48-0	%	/	0.005	N.D.	N.D.
Di-isodecyl phthalate(DIDP) CAS:26761-40-0, 68515-49-1	%	/	0.005	N.D.	N.D.
Sum of DIBP+DBP+BBP+DEHP	%	0.1	/	N.D.	N.D.
Sum of DNOP+DINP+DIDP	%	0.1	/	N.D.	N.D.
Conclusion				Conformity	Conformity

Remark:

1. As specified by client, the submitted samples were mixed to test, the test points: 1-1,1-2,1-5

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Limit requirements of Phthalates

Toys and childcare articles	Each of DEHP, DBP, BBP, DIBP is less than 0.1% or the sum of DEHP+DBP+BBP+DIBP is less than 0.1%
Toys and childcare articles which can be placed in the mouth by children	The sum of DINP+DIDP+DNOP is less than 0.1%

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 50
- Polycyclic-aromatic Hydrocarbons (PAHs) Content

Test Methods and Equipment: Afps GS 2019:01 PAK; GC-MS

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-1	1-2
Benzo[a]pyrene(BaP)	mg/kg	1	0.1	N.D.	N.D.
Benzo[e]pyrene(BeP)	mg/kg	1	0.1	N.D.	N.D.
Benzo[a]anthracene(BaA)	mg/kg	1	0.1	N.D.	N.D.
Benzo[b]fluoranthene(BbF)	mg/kg	1	0.1	N.D.	N.D.
Benzo[j]fluoranthene(BjFA)	mg/kg	1	0.1	N.D.	N.D.
Benzo[k]fluoranthene(BkF)	mg/kg	1	0.1	N.D.	N.D.
Chrysene(CHR)	mg/kg	1	0.1	N.D.	N.D.
Dibenzo[a,h]anthracene(DBA)	mg/kg	1	0.1	N.D.	N.D.
Conclusion				Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-3	1-4
Benzo[a]pyrene(BaP)	mg/kg	1	0.1	N.D.	N.D.
Benzo[e]pyrene(BeP)	mg/kg	1	0.1	N.D.	N.D.
Benzo[a]anthracene(BaA)	mg/kg	1	0.1	N.D.	N.D.
Benzo[b]fluoranthene(BbF)	mg/kg	1	0.1	N.D.	N.D.
Benzo[j]fluoranthene(BjFA)	mg/kg	1	0.1	N.D.	N.D.
Benzo[k]fluoranthene(BkF)	mg/kg	1	0.1	N.D.	N.D.
Chrysene(CHR)	mg/kg	1	0.1	N.D.	N.D.
Dibenzo[a,h]anthracene(DBA)	mg/kg	1	0.1	N.D.	N.D.
Conclusion				Conformity	Conformity

Remark:

1. As specified by client, the submitted samples were mixed to test, the test points: 1-1,1-2

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Limit requirements of Polycyclic-aromatic Hydrocarbons (PAHs) (Unit: mg/kg)

Items	CAS No.	Extender oils or used for the production of tyres or parts of tyres	Any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity	Toys, including activity toys, and childcare articles, any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity
Benzo[a]pyrene(BaP)	50-32-8	≤ 1	≤ 1	≤ 0.5
Benzo[e]pyrene(BeP)	192-97-2	/	≤ 1	≤ 0.5
Benzo[a]anthracene(BaA)	56-55-3	/	≤ 1	≤ 0.5
Benzo[b]fluoranthene(BbF)	205-99-2	/	≤ 1	≤ 0.5
Benzo[j]fluoranthene(BjFA)	205-82-3	/	≤ 1	≤ 0.5
Benzo[k]fluoranthene(BkF)	207-08-9	/	≤ 1	≤ 0.5
Chrysene(CHR)	218-01-9	/	≤ 1	≤ 0.5
Dibenzo[a,h]anthracene(DBA)	53-70-3	/	≤ 1	≤ 0.5
Sum of BaP+ BeP+ BaA+ BbF+ BjFA+ BkF+ CHR+ DBA	/	≤ 10	/	/

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Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 27

- Nickel Release

Test Methods and Equipment: EN 12472:2020 & EN 1811:2023; ICP-OES

Test Point(s)	Parallel Sample	Unit	Limit	MDL	Test Result(s) Nickel Release	Conclusion
1-7	A	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	Conformity
	B	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	
	C	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	
1-8	A	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	Conformity
	B	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	
	C	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	
1-10	A	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	Conformity
	B	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	
	C	$\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	0.5	0.05	N.D.	

Remark: The samples of the following test points were resubmitted on September 10, 2024:1-10

Limit requirements of Nickel Release

Nickel Release		
Type of sample	Pass	Fail
Article with Nickel release limit of $0.5\mu\text{g}/\text{cm}^2/\text{week}$ (Non-body piercing)	$<0.88\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	$\geq 0.88\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$
Article with Nickel release limit of $0.2\mu\text{g}/\text{cm}^2/\text{week}$ (Body piercing)	$<0.35\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$	$\geq 0.35\mu\text{g} \cdot \text{cm}^{-2} \cdot \text{week}^{-1}$

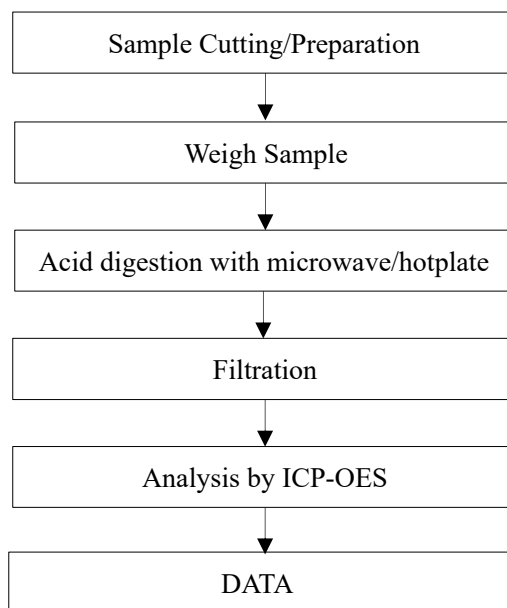
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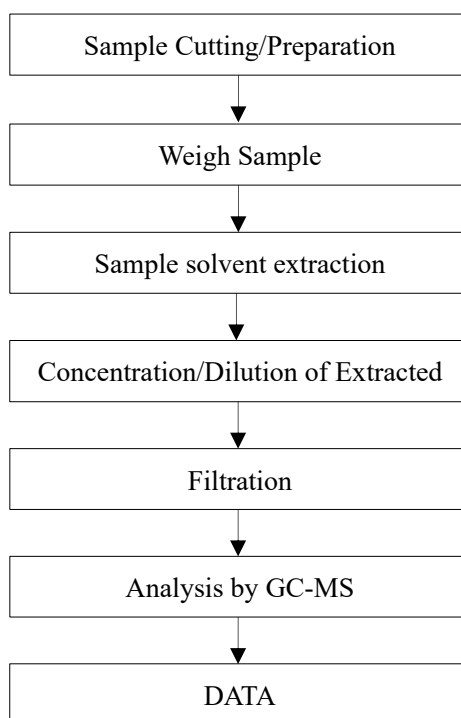
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Test Flow Chart of Heavy Metal Content



Test Flow Chart of Phthalates



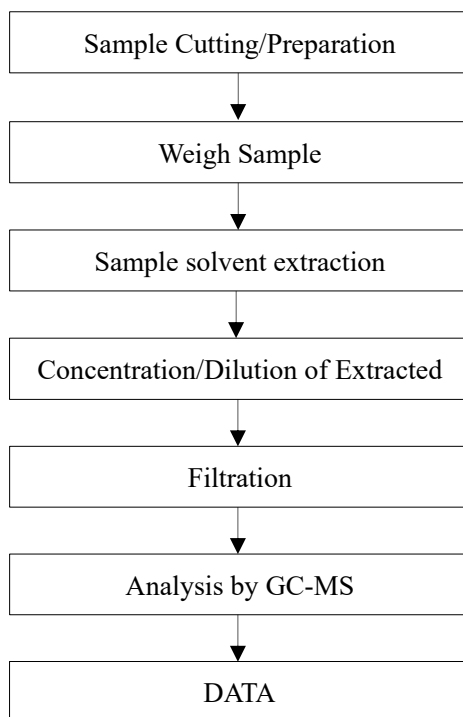
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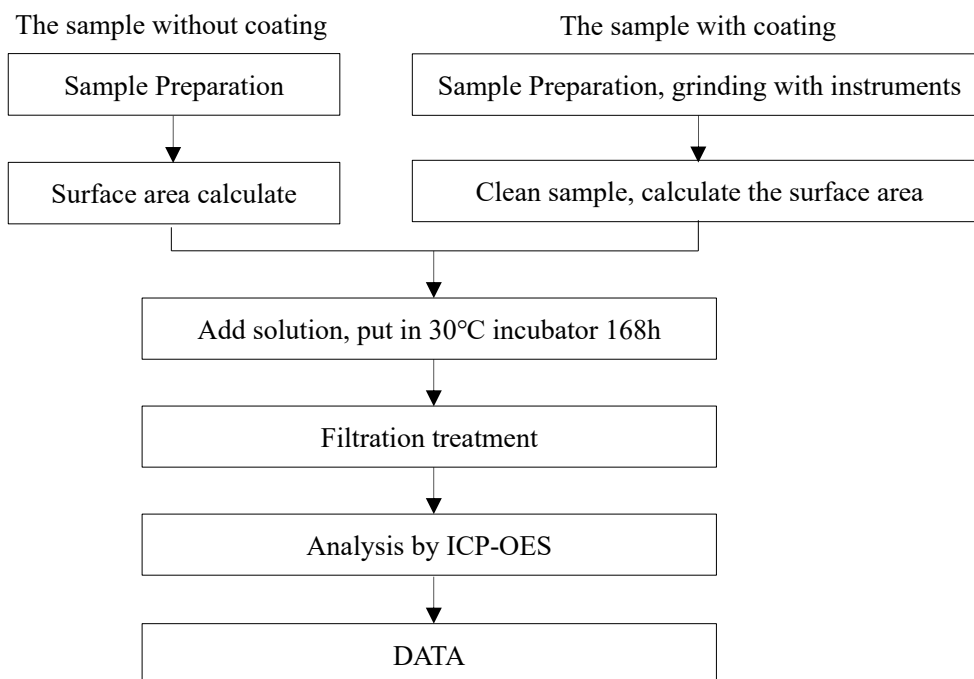
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Test Flow Chart of Polycyclic-aromatic Hydrocarbons (PAHs)



Test Flow Chart of Nickel Release



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2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

*** End of Report ***

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