
Test Report

Report No. : AGC05443230406-001

SAMPLE NAME : Anti-bacterial pen
MODEL NAME : MO9951
APPLICANT : MID OCEAN BRANDS B.V
STANDARD(S) : Please refer to the following page(s).
DATE OF ISSUE : May 12, 2023

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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 : Anti-bacterial pen
Model : MO9951
Vendor code : 108694
Country of Origin : CHINA
Country of Destination : EUROPE
Sample Received Date : Apr. 11, 2023
Testing Period : Apr. 11, 2023 to May 11, 2023
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 27 - Nickel Release	Pass
-Antibacterial activity of Escherichia coli, Staphylococcus aureus and Candida albicans	See the result(s)

Approved by : 

Liangdan, Jessie.Liang

Technical Director

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Report Revise Record

Report Version	Issued Date	Valid Version	Notes
/	May 12, 2023	Valid	Initial release

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The photo of the sample



The photo of AGC05443230406-001 is for use only with the original report.

Test Point Description

Test point	Test point description
1-1	White plastic pen holder
1-2	Plastic pen holder tip+Plastic pen holder head+Plastic pen middle ring
1-3	White plastic refill pen tube
1-4	Metal pen clip
1-5	Metal spring
1-6	Blue ink

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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

Remark:

1. As specified by client, the submitted samples were mixed to test, the test points: 1-2
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
Cadmium(Cd)	mg/kg	100	10	N.D.	N.D.
Conclusion				Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-3	1-6
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: 1-2
2. As specified by client, the submitted samples were directly tested without drying, the test points: 1-6

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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 1811:2011+A1:2015; ICP-OES

Test Point(s)	Parallel Sample	Unit	Limit	MDL	Test Result(s) Nickel Release	Conclusion
1-4	A	µg/cm ² /week	0.5	0.05	N.D.	Conformity
	B	µg/cm ² /week	0.5	0.05	N.D.	
	C	µg/cm ² /week	0.5	0.05	N.D.	

Limit requirements of Nickel Release

Nickel Release		
Type of sample	Pass	Fail
Article with Nickel release limit of 0.5µg/cm ² /week (Non-body piercing)	<0.88µg/cm ² /week	≥0.88µg/cm ² /week
Article with Nickel release limit of 0.2µg/cm ² /week (Body piercing)	<0.35µg/cm ² /week	≥0.35µg/cm ² /week

- Antibacterial activity of Escherichia coli, Staphylococcus aureus and Candida albicans

Test Point(s): 1-1

Test Method: ISO 22196:2011.

Test instrument: Biochemical incubator.

	Test strains		
	Escherichia coli ATCC 8739	Staphylococcus aureus ATCC 6538P	Candida albicans ATCC 10231
Liquid inoculant concentration (each/mL)	5.1×10 ⁵	4.2×10 ⁵	3.3×10 ⁵
Liquid inoculant amount (mL)	0.4	0.4	0.4
Untreated sample piece 0 h after inoculation on the number of living bacterium	1.5×10 ⁴	1.5×10 ⁴	1.3×10 ⁴
Untreated sample piece cultivate 24 h after inoculation on the number of living bacterium	2.7×10 ⁶	2.6×10 ⁶	2.0×10 ⁶
Antibacterial sample piece cultivate 24 h after inoculation on the number of living bacterium	5.9×10 ⁴	1.8×10 ⁵	1.6×10 ⁵
Antibacterial activity value	1.66	1.16	1.10
Antibacterial rate (%)	97.81	93.08	92.00

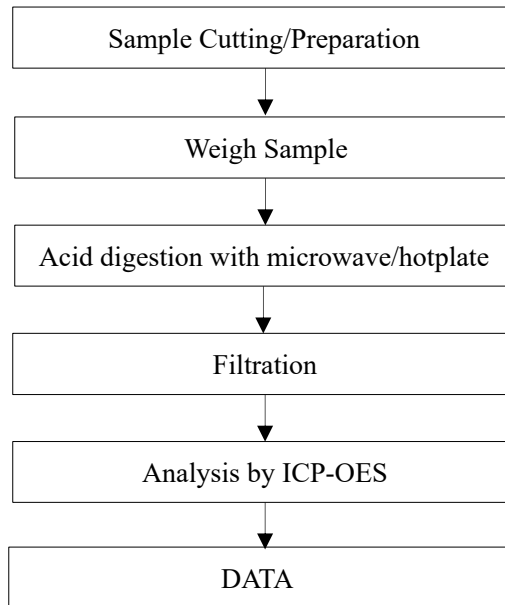
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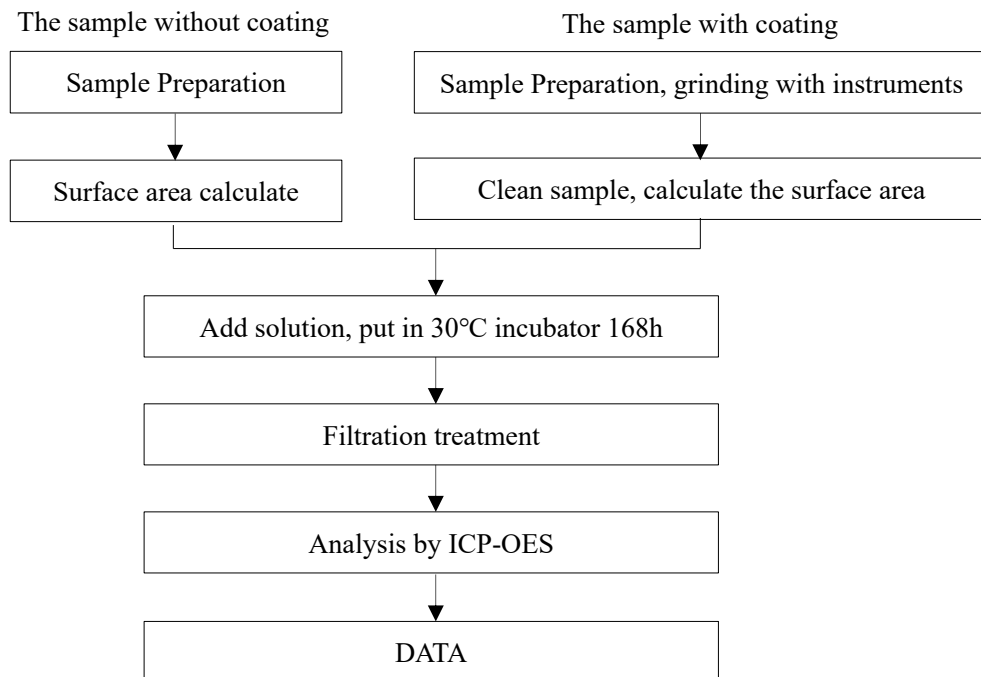
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Test Flow Chart of Heavy Metal Content



Test Flow Chart of Nickel Release



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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.
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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.
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*** End of Report ***

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