



# TEST REPORT

Test Report # 17A-003702-1-S1 Date of Report Issue: November 14, 2017  
Date of Sample Received: November 8, 2017 Pages: Page 1 of 12

## CLIENT INFORMATION:

Company: Mid Ocean Brands B.V.  
Address: Unit 201, 2/F, Laford Centre, 838 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, Hong Kong



## SAMPLE INFORMATION:

Product Name: Tritan bottle  
Model/style No.: MO9226  
Main Material: tritan  
Buyer: Mid Ocean Brands B.V.  
Supplier: 100396  
Country of Distribution: EU  
Testing Period: 11/08/2017-11/13/2017

## OVERALL RESULT:

**PASS**

Refer to page 2 for test result summary and appropriate notes.

HANGZHOU ASIAINSPECTION  
TECHNOLOGY CO., LTD

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Technical Manager





# TEST REPORT

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## TEST RESULTS SUMMARY:

At the request of the client, the following tests were conducted:

| CONCLUSION | TEST(S) CONDUCTED  |
|------------|--|
| PASS       | Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials                                      |
| PASS       | Regulation (EC) No. 1907/2006 REACH Annex XVII as Amended by Commission Regulation (EC) No. 835/2012, Item 23 Cadmium    |
| PASS       | Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP) |
| PASS       | Client’s requirement, Bisphenol A content  |
| PASS       | Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416- Overall migration                        |
| PASS       | Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416- Specific migration of heavy metals       |

Remark: † Revised information and supersedes the previous report no. 17A-003702-1 date: 11/13/2017





**DETAILED RESULTS:**

**Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials**

Test Method: CPSC-CH-E1001-08.3 (Metal) and/or CPSC-CH-E1002-08.3 (Non-Metal)

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

| Specimen No.      | 1              | 2              | 3              | 4              | 5              | Limit (mg/kg) |
|-------------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Test Item         | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) |               |
| Total Lead (Pb)   | ND             | ND             | ND             | ND             | ND             | <b>500</b>    |
| <b>Conclusion</b> | PASS           | PASS           | PASS           | PASS           | PASS           |               |

| Specimen No.      | 6              | -              | -              | -              | -              | Limit (mg/kg) |
|-------------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Test Item         | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) |               |
| Total Lead (Pb)   | ND             | -              | -              | -              | -              | <b>500</b>    |
| <b>Conclusion</b> | PASS           | -              | -              | -              | -              |               |

*Note:*

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)



**DETAILED RESULTS:****Regulation (EC) No. 1907/2006 REACH Annex XVII as Amended by Commission Regulation (EC) No. 835/2012, Item 23 Cadmium**

Test Method: EN 1122:2001 Method B

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

| Specimen No.       |         | 1                 | 2                 | 3                 | 4                 | Limit<br>(mg/kg) |
|--------------------|---------|-------------------|-------------------|-------------------|-------------------|------------------|
| Test Item          |         | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) |                  |
| Total Cadmium (Cd) | Trial 1 | ND                | ND                | ND                | ND                |                  |
|                    | Trial 2 | ND                | ND                | ND                | ND                |                  |
|                    | Mean    | ND                | ND                | ND                | ND                | <b>100</b>       |
| <b>Conclusion</b>  |         | PASS              | PASS              | PASS              | PASS              |                  |

| Specimen No.       |         | 5                 | 6                 | -                 | -                 | Limit<br>(mg/kg) |
|--------------------|---------|-------------------|-------------------|-------------------|-------------------|------------------|
| Test Item          |         | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) |                  |
| Total Cadmium (Cd) | Trial 1 | ND                | ND                | -                 | -                 |                  |
|                    | Trial 2 | ND                | ND                | -                 | -                 |                  |
|                    | Mean    | ND                | ND                | -                 | -                 | <b>100</b>       |
| <b>Conclusion</b>  |         | PASS              | PASS              | -                 | -                 |                  |

*Note:*

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)



**DETAILED RESULTS:****Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)**

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

| Specimen No.                       |                          | 1                 | 2                 | 3                 | 4                 | Limit<br>(% m/m) |
|------------------------------------|--------------------------|-------------------|-------------------|-------------------|-------------------|------------------|
| Test Item                          | CAS No.                  | Result<br>(% m/m) | Result<br>(% m/m) | Result<br>(% m/m) | Result<br>(% m/m) |                  |
| Dibutyl phthalate (DBP)            | 84-74-2                  | ND                | ND                | ND                | ND                |                  |
| Benzyl butyl phthalate (BBP)       | 85-68-7                  | ND                | ND                | ND                | ND                |                  |
| Di-(2-ethylhexyl) phthalate (DEHP) | 117-81-7                 | ND                | ND                | ND                | ND                |                  |
| Sum of DBP, BBP, DEHP              |                          | ND                | ND                | ND                | ND                | <b>0.1</b>       |
| Di-n-octyl phthalate (DnOP)        | 117-84-0                 | ND                | ND                | ND                | ND                |                  |
| Diisononyl phthalate (DINP)        | 28553-12-0<br>68515-48-0 | ND                | ND                | ND                | ND                |                  |
| Diisodecyl phthalate (DIDP)        | 26761-40-0<br>68515-49-1 | ND                | ND                | ND                | ND                |                  |
| Sum of DnOP, DINP, DIDP            |                          | ND                | ND                | ND                | ND                | <b>0.1</b>       |
| <b>Conclusion</b>                  |                          | PASS              | PASS              | PASS              | PASS              |                  |

*Note:*

% m/m = Percent by mass

LT = Less than

ND = Not detected (Reporting Limit = 0.015 % m/m)



**DETAILED RESULTS:****Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)**

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

| Specimen No.                       |                          | 5                 | 6                 | -                 | -                 | Limit<br>(% m/m) |
|------------------------------------|--------------------------|-------------------|-------------------|-------------------|-------------------|------------------|
| Test Item                          | CAS No.                  | Result<br>(% m/m) | Result<br>(% m/m) | Result<br>(% m/m) | Result<br>(% m/m) |                  |
| Dibutyl phthalate (DBP)            | 84-74-2                  | ND                | ND                | -                 | -                 |                  |
| Benzyl butyl phthalate (BBP)       | 85-68-7                  | ND                | ND                | -                 | -                 |                  |
| Di-(2-ethylhexyl) phthalate (DEHP) | 117-81-7                 | ND                | ND                | -                 | -                 |                  |
| Sum of DBP, BBP, DEHP              |                          | ND                | ND                | -                 | -                 | <b>0.1</b>       |
| Di-n-octyl phthalate (DnOP)        | 117-84-0                 | ND                | ND                | -                 | -                 |                  |
| Diisononyl phthalate (DINP)        | 28553-12-0<br>68515-48-0 | ND                | ND                | -                 | -                 |                  |
| Diisodecyl phthalate (DIDP)        | 26761-40-0<br>68515-49-1 | ND                | ND                | -                 | -                 |                  |
| Sum of DnOP, DINP, DIDP            |                          | ND                | ND                | -                 | -                 | <b>0.1</b>       |
| <b>Conclusion</b>                  |                          | PASS              | PASS              | -                 | -                 |                  |

*Note:*

% m/m = Percent by mass

LT = Less than

ND = Not detected (Reporting Limit = 0.015 % m/m)





**DETAILED RESULTS:**

**Client's requirement, Bisphenol A content**

Test method: US EPA 3550C:2007 & US EPA 8270D:2014

Analytical Method: Gas Chromatography-Mass Spectrometer

| Sample No.:       | 1                 | 2                 | 3                 | 4                 | 5                 | Client's limit<br>(mg/kg) |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|
| Test Item         | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) |                           |
| Bisphenol A (BPA) | ND                | ND                | ND                | ND                | ND                | Not Detected              |
| <b>Conclusion</b> | PASS              | PASS              | PASS              | PASS              | PASS              |                           |

| Sample No.:       | 6                 | -                 | -                 | -                 | -                 | Client's limit<br>(mg/kg) |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|
| Test Item         | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) | Result<br>(mg/kg) |                           |
| Bisphenol A (BPA) | ND                | -                 | -                 | -                 | -                 | Not Detected              |
| <b>Conclusion</b> | PASS              | -                 | -                 | -                 | -                 |                           |

Note:

mg/kg=milligram per kilogram

ND=Not Detected(Reporting limit = 0.1mg/kg)



**DETAILED RESULTS:****Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416- Overall migration**

Test method: EN1186-1:2002: for selection of conditions and test methods

EN1186-3:2002: aqueous food simulants by total immersion

EN1186-9:2002: aqueous food simulants by article filling

| Specimen No.      |                 | 1                            | 2                            | 3                            | Maximum permissible Limit (mg/dm <sup>2</sup> ) |
|-------------------|-----------------|------------------------------|------------------------------|------------------------------|---|
| Simulant used     | Test condition  | Result (mg/dm <sup>2</sup> ) | Result (mg/dm <sup>2</sup> ) | Result (mg/dm <sup>2</sup> ) |   |
| 3% acetic acid    | 2 hours at 70°C | ND                           | ND                           | ND                           | 10  |
| 50% ethanol       | 2 hours at 70°C | ND                           | ND                           | ND                           | 10  |
| <b>Conclusion</b> |                 | PASS                         | PASS                         | PASS                         |   |

| Specimen No.      |                 | 4                            | 5                            | -                            | Maximum permissible Limit (mg/dm <sup>2</sup> ) |
|-------------------|-----------------|------------------------------|------------------------------|------------------------------|---|
| Simulant used     | Test condition  | Result (mg/dm <sup>2</sup> ) | Result (mg/dm <sup>2</sup> ) | Result (mg/dm <sup>2</sup> ) |   |
| 3% acetic acid    | 2 hours at 70°C | ND                           | ND                           | -                            | 10  |
| 50% ethanol       | 2 hours at 70°C | ND                           | ND                           | -                            | 10  |
| <b>Conclusion</b> |                 | PASS                         | PASS                         | -                            |   |

**Note:**mg/dm<sup>2</sup> = milligram per square decimeterND = Not Detected (Reporting limit = 3 mg/dm<sup>2</sup>)The overall migration value is expressed in mg/dm<sup>2</sup> applying the total contact surface of sealing article and sealed container



**DETAILED RESULTS:****Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416- Specific migration of heavy metals**

Test method: Sample preparation in 3% acetic acid at 70°C for 2hours, followed by analysis Inductively Coupled Plasma Optical Emission Spectrometer

| Specimen No. |                 | 1              | 2              | 3              | 4              | Maximum permissible Limit (mg/kg) |
|--------------|-----------------|----------------|----------------|----------------|----------------|-----------------------------------|
| Test Item    | Detection limit | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) |                                   |
| Barium       | 0.1             | ND             | ND             | ND             | ND             | 1                                 |
| Cobalt       | 0.05            | ND             | ND             | ND             | ND             | 0.05                              |
| Copper       | 0.5             | ND             | ND             | ND             | ND             | 5                                 |
| Iron         | 1.0             | ND             | ND             | ND             | ND             | 48                                |
| Lithium      | 0.1             | ND             | ND             | ND             | ND             | 0.6                               |
| Manganese    | 0.1             | ND             | ND             | ND             | ND             | 0.6                               |
| Zinc         | 1.0             | ND             | ND             | ND             | ND             | 5                                 |
| Aluminum     | 0.1             | ND             | ND             | ND             | ND             | 1                                 |
| Nickel       | 0.01            | ND             | ND             | ND             | ND             | 0.02                              |
| Conclusion   |                 | PASS           | PASS           | PASS           | PASS           |                                   |

| Specimen No. |                 | 5              | -              | -              | -              | Maximum permissible Limit (mg/kg) |
|--------------|-----------------|----------------|----------------|----------------|----------------|-----------------------------------|
| Test Item    | Detection limit | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) | Result (mg/kg) |                                   |
| Barium       | 0.1             | ND             | -              | -              | -              | 1                                 |
| Cobalt       | 0.05            | ND             | -              | -              | -              | 0.05                              |
| Copper       | 0.5             | ND             | -              | -              | -              | 5                                 |
| Iron         | 1.0             | ND             | -              | -              | -              | 48                                |
| Lithium      | 0.1             | ND             | -              | -              | -              | 0.6                               |
| Manganese    | 0.1             | ND             | -              | -              | -              | 0.6                               |
| Zinc         | 1.0             | ND             | -              | -              | -              | 5                                 |
| Aluminum     | 0.1             | ND             | -              | -              | -              | 1                                 |
| Nickel       | 0.01            | ND             | -              | -              | -              | 0.02                              |
| Conclusion   |                 | PASS           | -              | -              | -              |                                   |

**Note:**

mg/kg=milligram per kilogram

ND= Not Detected

The specific migration values use the actual content of the container for which the closure is intended  
Container volume: 700mL

The specific migration values apply the real surface to volume ratio in actual or foreseen use.





**\*SPECIMEN DESCRIPTION:**

| Specimen No. | Specimen Description     | Location                  |
|--------------|--------------------------|---------------------------|
| 1            | Red translucent PS       | Top of suction pipe       |
| 2            | Black PP                 | Lid                       |
| 3            | Transparent PE           | Main body of suction pipe |
| 4            | Translucent silicone     | Silicone ring             |
| 5            | Black translucent tritan | Bottle                    |
| 6            | Red silicone             | Bottle                    |





**SAMPLE PHOTO:**





**†PRODUCT PHOTO:**



-End Report-

