# TEST REPORT

| | | |
|---|---|---|
| **Reference No.** | : | WTF21F10115016A1C |
| **Applicant** | : | Mid Ocean Brands B.V. |
| **Address** | : | 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong |
| **Manufacturer** | : | 106716 |
| **Sample Name** | : | Set of 3 RPET mesh bags in RPET pouch |
| **Model No.** | : | MO9898 |
| **Test Requested** | : | 1) Determination of Lead content in the submitted sample in accordance with REACH regulation Annex XVII Entries 63 (EC) No. 1907/2006 and the amendment No. 836/2012 and (EU) 2015/628<br>2) Determination of Cadmium content in the submitted sample in accordance with REACH regulation Annex XVII Entries 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011, No. 835/2012 and (EU) 2016/217<br>3) Determination of specified Phthalates content according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 & No. 2018/2005<br>4) Determine the specified AZO Colorants contents in the submitted sample in according to the Entries 43 in Annex XVII of the REACH Regulation (EC) No.1907/2006 and the Amendment Regulation (EC) No.552/ 2009 & No.126/ 2013 (previously restricted under Directive 2002/61/EC).<br>5) As requested by the applicant, to test Colour Fastness to Rubbing in the submitted sample.<br>6) As requested by the applicant, to test Appearance After Washing in the submitted sample. |
| **Test Method** | : | Please refer to next page (s) |
| **Test Conclusion** | : | Please refer to next page (s) |
| **Date of Receipt sample** | : | 2021-10-27 & 2021-11-29 |
| **Date of Test** | : | 2021-10-27 to 2021-11-12 & 2021-11-29 to 2021-12-01 |
| **Date of Issue** | : | 2021-12-01 |
| **Test Result** | : | Please refer to next page (s) |
| **Note** | : | As specified by client, only test the designated sample. |

Remarks:

The results shown in this test report refer only to the sample(s) tested; this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

If the report is not stamped with the accreditation recognized seal, it will only be used for scientific research, education, and internal quality control activities, and is not used for the purpose of issuing supporting data to the society.


**Prepared By:**

**Waltek Testing Group (Foshan) Co., Ltd.**

Address: No.13-19, 2/F., 2nd Building, Sunlink International Machinery City, Chencun, Shunde District, Foshan, Guangdong, China

Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail: info@waltek.com.cn


Compiled by: Approved by:

Rena.Chen / Project Engineer

Swing.Liang / Technical Manager

**Test Result:**

**1) Lead (Pb)**

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

| Test Item | LOQ (mg/kg) | Results (mg/kg) | | Limit (mg/kg) |
|---|---|---|---|---|
| | | No.1+No.5+No.8 | No.2 | |
| Lead(Pb) | 2 | ND* | ND | 500 |
| **Conclusion** | -- | **Pass** | **Pass** | -- |

| Test Item | LOQ (mg/kg) | Results (mg/kg) | | Limit (mg/kg) |
|---|---|---|---|---|
| | | No.3 | No.4+No.6+No.7 | |
| Lead(Pb) | 2 | 39 | ND* | 500 |
| **Conclusion** | -- | **Pass** | **Pass** | -- |

**Note:**

(1) mg/kg = milligram per kilogram
(2) ND = Not Detected (lower than LOQ)
(3) LOQ = Limit of quantitation
(4) Limit of Lead was quoted from REACH regulation Annex XVII Item 63 (EC) No. 1907/2006 and the amendment No. 836/2012 and (EU) 2015/628.
(5) "*" = Results are calculated by the minimum weight of mixed components.
(6) The test sample of specimen No.3 is received on the date of 2021-10-27.

**2) Cadmium (Cd)**

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

| Test Item | LOQ (mg/kg) | Results (mg/kg) | |
|---|---|---|---|
| | | No.1+No.5+No.8 | No.2 |
| Cadmium(Cd) | 2 | ND* | ND |
| **Conclusion** | -- | **Pass** | **Pass** |

| Test Item | LOQ (mg/kg) | Results (mg/kg) | |
|---|---|---|---|
| | | No.3 | No.4+No.6+No.7 |
| Cadmium(Cd) | 2 | ND | ND* |
| **Conclusion** | -- | **Pass** | **Pass** |

**Note:**

(1) mg/kg = milligram per kilogram

(2) ND = Not Detected (lower than LOQ)

(3) LOQ = Limit of quantitation

(4) Limit of Cadmium according to REACH regulation Annex XVII Item 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011 and No. 835/2012 and (EU) 2016/217.

| Category | Limit (mg/kg) |
|---|---|
| Wet paint | 100 |
| Surface coating | 1000 |
| Plastic | 100 |
| Metal parts of jewellery and hair accessories | 100 |

(5) "*" = Results are calculated by the minimum weight of mixed components.

(6) The test sample of specimen No.3 is received on the date of 2021-10-27.

**3) Phthalates**

Test Method: With reference to EN14372:2004, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

| Test Items | LOQ (%) | Results (%) | Limit (%) |
|---|---|---|---|
| | | No.3 | |
| Benzyl butyl phthalate (BBP) | 0.005 | ND | sum of four phthalates < 0.1 |
| Di (2-ethyl hexyl)- phthalate (DEHP) | 0.005 | ND | |
| Dibutyl phthalate (DBP) | 0.005 | ND | |
| Diisobutyl phthalate (DIBP) | 0.005 | ND | |
| Diisodecyl phthalate (DIDP) | 0.01 | ND | sum of three phthalates < 0.1 |
| Diisononyl phthalate (DINP) | 0.01 | ND | |
| Di-n-octyl phthalate (DNOP) | 0.005 | ND | |
| **Conclusion** | -- | **Pass** | -- |

**Note:**

DBP= Dibutyl phthalate BBP= Benzyl butyl phthalate DEHP= Bis-(2-ethylhexyl)- phthalate
DINP= Di-isononyl phthalate DNOP= Di-n-octyl phthalate DIDP= Di-isodecyl phthalate
DIBP= Diisobutyl phthalate

(1) % = percentage by weight
(2) ND = Not Detected or lower than limit of quantitation
(3) LOQ = Limit of quantitation
(4) “<” = less than
(5) The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 & No. 2018/2005 (formerly known as Directive 2005/84/EC) for phthalate content in toys and child care articles.
(6) The test sample of specimen No.3 is received on the date of 2021-11-29.

**4) AZO**

Test Method: With reference to BS EN ISO 14362-1：2017 and BS EN ISO 14362-3：2017, analysis was performed by Gas Chromatographic Mass Spectrometry (GC-MS)

| No. | Amines Substances | CAS No. | Limit (mg/kg) | Result (mg/kg) |
|---|---|---|---|---|
| | | | | No.1+No.5+No.8 |
| 1 | 4-Aminobiphenyl | 92-67-1 | 30 | ND* |
| 2 | Benzidine | 92-87-5 | 30 | ND* |
| 3 | 4-chloro-o-Toluidine | 95-69-2 | 30 | ND* |
| 4 | 2-Naphthylamine | 91-59-8 | 30 | ND* |
| 5 | o-Aminoazotoluene | 97-56-3 | 30 | ND* |
| 6 | 2-Amino-4-nitrotoluene | 99-55-8 | 30 | ND* |
| 7 | p-Chloroaniline | 106-47-8 | 30 | ND* |
| 8 | 2,4-diaminoanisol | 615-05-4 | 30 | ND* |
| 9 | 4,4’-Diaminodiphenylmethane | 101-77-9 | 30 | ND* |
| 10 | 3,3’-Dichlorobenzidine | 91-94-1 | 30 | ND* |
| 11 | 3,3’-Dimethoxybenzidine | 119-90-4 | 30 | ND* |
| 12 | 3,3’-Dimethylbenzidine | 119-93-7 | 30 | ND* |
| 13 | 3,3’-Dimethyl-4,4’-diaminodiphenylmethane | 838-88-0 | 30 | ND* |
| 14 | p-cresinin | 120-71-8 | 30 | ND* |
| 15 | 4,4’-Methylen-bis-(2-chloroaniline) | 101-14-4 | 30 | ND* |
| 16 | 4,4’-Oxydianiline | 101-80-4 | 30 | ND* |
| 17 | 4,4’-Thiodianiline | 139-65-1 | 30 | ND* |
| 18 | o-Toluidine | 95-53-4 | 30 | ND* |
| 19 | 2,4-Toluylendiamine | 95-80-7 | 30 | ND* |
| 20 | 2,4,5 – Trimethylaniline | 137-17-7 | 30 | ND* |
| 21 | o-anisidine | 90-04-0 | 30 | ND* |
| 22 | 4-aminoazobenzene | 60-09-3 | 30 | ND* |
| 23 | 2,4-Xylidin | 95-68-1 | 30 | ND* |
| 24 | 2,6-Xylidin | 87-62-7 | 30 | ND* |
| **Conclusion** | | -- | -- | **Pass** |

| No. | Amines Substances | CAS No. | Limit (mg/kg) | Result (mg/kg) |
|---|---|---|---|---|
| | | | | No.4+No.6+No.7 |
| 1 | 4-Aminobiphenyl | 92-67-1 | 30 | ND* |
| 2 | Benzidine | 92-87-5 | 30 | ND* |
| 3 | 4-chloro-o-Toluidine | 95-69-2 | 30 | ND* |
| 4 | 2-Naphthylamine | 91-59-8 | 30 | ND* |
| 5 | o-Aminoazotoluene | 97-56-3 | 30 | ND* |
| 6 | 2-Amino-4-nitrotoluene | 99-55-8 | 30 | ND* |
| 7 | p-Chloroaniline | 106-47-8 | 30 | ND* |
| 8 | 2,4-diaminoanisol | 615-05-4 | 30 | ND* |
| 9 | 4,4'-Diaminodiphenylmethane | 101-77-9 | 30 | ND* |
| 10 | 3,3'-Dichlorobenzidine | 91-94-1 | 30 | ND* |
| 11 | 3,3'-Dimethoxybenzidine | 119-90-4 | 30 | ND* |
| 12 | 3,3'-Dimethylbenzidine | 119-93-7 | 30 | ND* |
| 13 | 3,3'-Dimethyl-4,4'-diaminodiphenylmethane | 838-88-0 | 30 | ND* |
| 14 | p-cresinin | 120-71-8 | 30 | ND* |
| 15 | 4,4'-Methylen-bis-(2-chloroaniline) | 101-14-4 | 30 | ND* |
| 16 | 4,4'-Oxydianiline | 101-80-4 | 30 | ND* |
| 17 | 4,4'-Thiodianiline | 139-65-1 | 30 | ND* |
| 18 | o-Toluidine | 95-53-4 | 30 | ND* |
| 19 | 2,4-Toluylendiamine | 95-80-7 | 30 | ND* |
| 20 | 2,4,5 – Trimethylaniline | 137-17-7 | 30 | ND* |
| 21 | o-anisidine | 90-04-0 | 30 | ND* |
| 22 | 4-aminoazobenzene | 60-09-3 | 30 | ND* |
| 23 | 2,4-Xylidin | 95-68-1 | 30 | ND* |
| 24 | 2,6-Xylidin | 87-62-7 | 30 | ND* |
| **Conclusion** | | -- | -- | **Pass** |

**Note:**
- ND = Not Detected or lower than limit of quantitation
- mg/kg=Milligram per kilogram
- Limit of quantitation (mg/kg): Each 5mg/kg
- The CAS-numbers 97-56-3 and 99-55-8 are further reduced to CAS-numbers 95-53-4 and 95-80-7.
- AZO colorants that are able to form 4-aminoazobenzene, generate under the condition of this method aniline and 1,4-phenylenediamine. The presence of these colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorant used.
- The CAS-numbers 95-68-1 and 87-62-7 are not proscribed under REACH Regulation (EC) No 1907/2006
- "*" = Results are calculated by the minimum weight of mixed components.

**5) Colour Fastness to Rubbing**

| **Colour Fastness to Rubbing** | | | | | | |
|---|---|---|---|---|---|---|
| (ISO 105-X12: 2016; Size of rubbing finger: 16mm diameter.) | | | | | | |
| | | **No.4** | **No.6** | **No.7** | **No.8** | **Client's Limit** |
| Length | Dry staining | 4-5 | 4-5 | 4-5 | 4-5 | 2-3 |
| | Wet staining | 4-5 | 4-5 | 4-5 | 4-5 | 2-3 |
| Width | Dry staining | -- | -- | -- | -- | 2-3 |
| | Wet staining | -- | -- | -- | -- | 2-3 |
| **Conclusion** | | **Pass** | **Pass** | **Pass** | **Pass** | -- |

**Note:**
(1) Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.

**6) Appearance After Washing**

| **Appearance After Washing** | | | |
|---|---|---|---|
| (In house test method, Washing procedure: ISO 3759: 2011/ISO 5077:2007/ISO 6330:2012; No.4N; Using horizontal axis, front-loading type machine: Machine wash at 40 degree C with 2kg total dry mass (type III (100% polyester) ballast + specimen) and 'ECE' detergent (A) + sodium perborate + TAED, line dry.) | | | |
| Observation of washed sample: | | | |
| After 5 Washes | | | |
| | Assessment | **No.5+No.6 (Whole product)** | Satisfactory |
| A | Colour change / loss using Grey Scale assessment (BS EN ISO 105 A02) | 4-5 | 4 or better |
| B | Cross staining i.e. colour transfer onto component parts (BS EN ISO 105 A03) | 4-5 | 4-5 or better |
| C | Print appearance | N/A | No significant change |
| D | Fraying of fabrics and trims | Not frayed | Not frayed |
| E | Detachment of fastenings and trims | Not detached | Not detached |
| F | Spirality / twisting of seams. | 0.3% | Less than 0.3% |
| G | Grinning / opening of seams. Measure seam opening | 0mm | 4mm or less |
| H | Pilling or fuzzing of surface fibres. Assess degree of pilling/fuzzing using BS EN ISO 12945-1 grades | 4-5 | 3-4 or better |
| I | Pile loss or flattening of pile. Assess using Grey Scales | N/A | 4 or better |
| J | Corrosion/damage to trim(s) including chipping / scratching of coatings | N/A | No corrosion / damage |
| K | Delamination of fused components | N/A | No delamination |
| L | Loss or damage to applied components | No loss or damage | No loss or damage |
| M | Free running of zip fastening. Assess free running in both directions. Open and close open – ended zip fasteners | N/A | Runs freely in both direction |
| N | Differential shrinkage of components / parts. Assess for distorting, wrinkling or twisting of components and/or puckering of seams. | No change(s) observed | No change(s) observed |
| O | Unraveling / breaks in stitching | No unraveling or breaks observed | No unraveling or breaks observed |
| P | Wadding has moved within casing (outer and lining) and/or migrated through casing | N/A | No movement or migration observed |
| Q | Other change(s) observed | No change(s) observed | No change(s) observed |
| **Conclusion** | | General appearance of washed sample is satisfactory | |

| **Appearance After Washing** | | | |
|---|---|---|---|
| (In house test method, Washing procedure: ISO 3759: 2011/ISO 5077:2007/ISO 6330:2012; No.4N; Using horizontal axis, front-loading type machine: Machine wash at 40 degree C with 2kg total dry mass (type III (100% polyester) ballast + specimen) and 'ECE' detergent (A) + sodium perborate + TAED, line dry.) | | | |
| Observation of washed sample: | | | |
| After 5 Washes | | | |
| | Assessment | **No.5+No.7 (Whole product)** | Satisfactory |
| A | Colour change / loss using Grey Scale assessment (BS EN ISO 105 A02) | 4-5 | 4 or better |
| B | Cross staining i.e. colour transfer onto component parts (BS EN ISO 105 A03) | 4-5 | 4-5 or better |
| C | Print appearance | N/A | No significant change |
| D | Fraying of fabrics and trims | Not frayed | Not frayed |
| E | Detachment of fastenings and trims | Not detached | Not detached |
| F | Spirality / twisting of seams. | 0.3% | Less than 0.3% |
| G | Grinning / opening of seams. Measure seam opening | 0mm | 4mm or less |
| H | Pilling or fuzzing of surface fibres. Assess degree of pilling/fuzzing using BS EN ISO 12945-1 grades | 4-5 | 3-4 or better |
| I | Pile loss or flattening of pile. Assess using Grey Scales | N/A | 4 or better |
| J | Corrosion/damage to trim(s) including chipping / scratching of coatings | N/A | No corrosion / damage |
| K | Delamination of fused components | N/A | No delamination |
| L | Loss or damage to applied components | No loss or damage | No loss or damage |
| M | Free running of zip fastening. Assess free running in both directions. Open and close open – ended zip fasteners | N/A | Runs freely in both direction |
| N | Differential shrinkage of components / parts. Assess for distorting, wrinkling or twisting of components and/or puckering of seams. | No change(s) observed | No change(s) observed |
| O | Unraveling / breaks in stitching | No unraveling or breaks observed | No unraveling or breaks observed |
| P | Wadding has moved within casing (outer and lining) and/or migrated through casing | N/A | No movement or migration observed |
| Q | Other change(s) observed | No change(s) observed | No change(s) observed |
| **Conclusion** | | General appearance of washed sample is satisfactory | |

| **Appearance After Washing** | | | |
|---|---|---|---|
| (In house test method, Washing procedure: ISO 3759: 2011/ISO 5077:2007/ISO 6330:2012; No.4N; Using horizontal axis, front-loading type machine: Machine wash at 40 degree C with 2kg total dry mass (type III (100% polyester) ballast + specimen) and 'ECE' detergent (A) + sodium perborate + TAED, line dry.) | | | |
| Observation of washed sample: | | | |
| After 5 Washes | | | |
| | Assessment | **No.5+No.8 (Whole product)** | Satisfactory |
| A | Colour change / loss using Grey Scale assessment (BS EN ISO 105 A02) | 4-5 | 4 or better |
| B | Cross staining i.e. colour transfer onto component parts (BS EN ISO 105 A03) | 4-5 | 4-5 or better |
| C | Print appearance | N/A | No significant change |
| D | Fraying of fabrics and trims | Not frayed | Not frayed |
| E | Detachment of fastenings and trims | Not detached | Not detached |
| F | Spirality / twisting of seams. | 0.3% | Less than 0.3% |
| G | Grinning / opening of seams. Measure seam opening | 0mm | 4mm or less |
| H | Pilling or fuzzing of surface fibres. Assess degree of pilling/fuzzing using BS EN ISO 12945-1 grades | 4-5 | 3-4 or better |
| I | Pile loss or flattening of pile. Assess using Grey Scales | N/A | 4 or better |
| J | Corrosion/damage to trim(s) including chipping / scratching of coatings | N/A | No corrosion / damage |
| K | Delamination of fused components | N/A | No delamination |
| L | Loss or damage to applied components | No loss or damage | No loss or damage |
| M | Free running of zip fastening. Assess free running in both directions. Open and close open – ended zip fasteners | N/A | Runs freely in both direction |
| N | Differential shrinkage of components / parts. Assess for distorting, wrinkling or twisting of components and/or puckering of seams. | No change(s) observed | No change(s) observed |
| O | Unraveling / breaks in stitching | No unraveling or breaks observed | No unraveling or breaks observed |
| P | Wadding has moved within casing (outer and lining) and/or migrated through casing | N/A | No movement or migration observed |
| Q | Other change(s) observed | No change(s) observed | No change(s) observed |
| **Conclusion** | | General appearance of washed sample is satisfactory | |

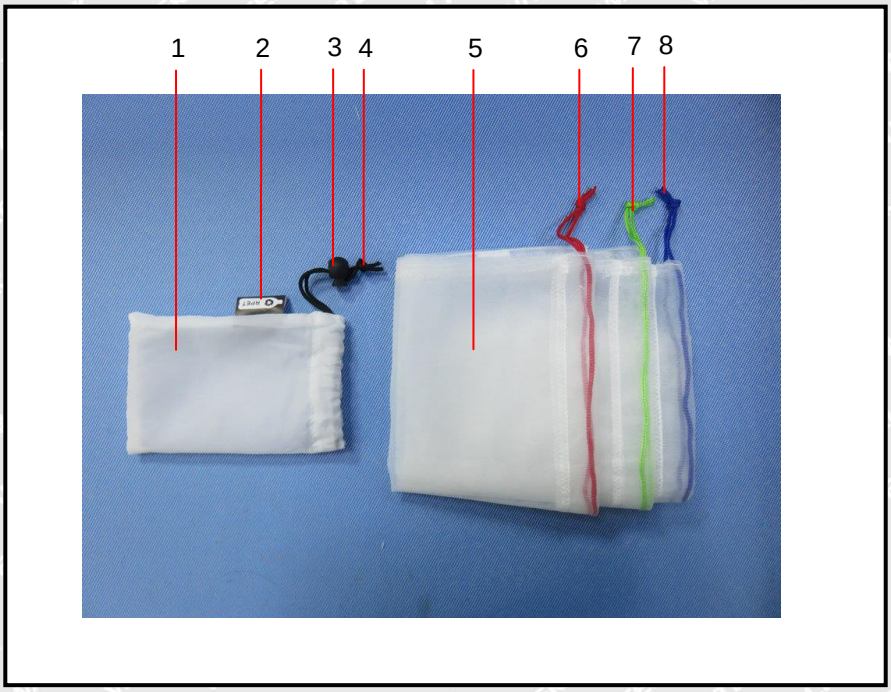
**Note:**
(1) Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.
(2) N/A = Not Applicable

**Test Specimen Description:**

No.1: White fabric
No.2: Black-white fabric
No.3: Black plastic buckle
No.4: Black drawstring
No.5: White net fabric
No.6: Red drawstring
No.7: Green drawstring
No.8: Blue drawstring

**Sample photo:**

**Photograph of parts tested:**




====== End of Report ======