# TEST REPORT



**Applicant:** Mid Ocean Brands B.V.

**Address:** Unit 711-716, 7/F., Tower A, 83 King Lam Street Cheung Sha Wan, Kowloon, Hong Kong

The following sample(s) and sample information was/were submitted and identified by client as:

**Sample Name:** Sports Bottle in RPET

**Model:** MO2792

**Vendor code :** 107978

**Receiving Date:** Oct 17,2025

**Test Period:** From Oct 17,2025 to Nov 21,2025

**Add Information:** -

## Test Summary:

| # | Test item(s) | Result |
|---|---|---|
| 1 | Item 50 of Annex XVII of REACH Regulation (EC) 1907/2006 & amendment (EU) No 1272/2013<br>Polycyclic-aromatic hydrocarbons (PAHs) content | **PASS** |
| 2 | Item 23 of Annex XVII of REACH Regulation (EC) 1907/2006<br>Cadmium content | **PASS** |
| 3 | Item 51&52 of Annex XVII of REACH Regulation (EC) 1907/2006.<br>Phthalate content ( DIBP、DEHP、DBP、BBP、DINP、DIDP 、DNOP) | **PASS** |
| 4 | Item 63 of Annex XVII of REACH Regulation (EC) 1907/2006<br>Total Lead content | **PASS** |
| 5 | Azo colorants content - Item 43 of Annex XVII of the REACH Regulation (EC) No 1907/2006 & amendment (EC) No 552/2009 and (EU) No 126/2013 | **PASS** |
| 6 | ISO 105-X12:2016 - Colour Fastness to Rubbing | **PASS** |

**********Please refer to the following page for detailed results**********

Authorized Signatory

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(Technical Director)

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| # | Test Item(s) | Conclusion |
|---|---|---|
| **Regulation (EC) No 1935/2004, the Commission Regulation (EU) No 10/2011 and its amendment (EU)2023/1442 and (EU) 2024/3190 - For Plastic Material** | | |
| 7 | Overall migration | **PASS** |
| 8 | Specific migration of Heavy Metal | **PASS** |
| 9 | Specific migration of Primary Aromatic Amine | **PASS** |
| 10 | Bisphenol A (BPA) content | **PASS** |
| **Regulation (EC) No 1935/2004,the Commission Regulation (EU) 2024/3190 and Council of Europe Resolution AP (2004) 5- For Silicone Material** | | |
| 11 | Overall migration | **PASS** |
| 12 | Bisphenol A Contents | **PASS** |
| **French Arrêté du 25 Novembre 1992 and French Décret 2007-766 with amendments - For Silicone Material** | | |
| 13 | Overall migration | **PASS** |
| 14 | Bisphenol A Contents | **PASS** |
| 15 | Specific migration of Organotin (as Tin) | **PASS** |
| 16 | Peroxide Value | **PASS** |
| 17 | Volatile organic matter | **PASS** |

## Result:

### 1. Polycyclic-aromatic hydrocarbons (PAHs) content - Item 50 of Annex XVII of REACH Regulation (EC) 1907/2006 & amendment (EU) No 1272/2013

**AfPS-GS-2019-01:PAK，determined by GC-MS**

| Test item(s) | | Results | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|
| | | Category I *1 | | | | |
| | | 1 | 2+12+13 | 3+16+22 | | |
| 1 | Benz[a]anthracene(BaA) CAS#56-55-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 2 | Chrysene(CHR) CAS#218-01-9 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 3 | Benz[b]fluoranthene(BbFA) CAS#205-99-2 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 4 | Benz[k]fluoranthene(BkFA) CAS#207-08-9 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 5 | Benz[j]fluoranthene(BjFA) CAS#205-82-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 6 | Benzo[a]pyrene(BaP) CAS#50-32-8 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 7 | Benzo[e]pyrene(BeP) CAS#192-97-2 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 8 | Dibenz [a,h]anthracene (DBahA) CAS#53-70-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | - | - |

| Test item(s) | | Results | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|
| | | Category I *1 | | | | |
| | | 4+7 | 5+17+23 | 6+21+27 | | |
| 1 | Benz[a]anthracene(BaA) CAS#56-55-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 2 | Chrysene(CHR) CAS#218-01-9 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 3 | Benz[b]fluoranthene(BbFA) CAS#205-99-2 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 4 | Benz[k]fluoranthene(BkFA) CAS#207-08-9 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 5 | Benz[j]fluoranthene(BjFA) CAS#205-82-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 6 | Benzo[a]pyrene(BaP) CAS#50-32-8 | N.D. | N.D. | N.D. | 1 | 0.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | Benzo[e]pyrene(BeP)<br>CAS#192-97-2 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 8 | Dibenz [a,h]anthracene (DBahA)<br>CAS#53-70-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | - | - |

| **Test item(s)** | | **Results** | | | **Limit (mg/kg)** | **MDL (mg/kg)** |
|---|---|---|---|---|---|---|
| | | **Category I** *1 | | | | |
| | | **8+20+26** | **9+19+25** | **10+18+24** | | |
| 1 | Benz[a]anthracene(BaA)<br>CAS#56-55-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 2 | Chrysene(CHR)<br>CAS#218-01-9 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 3 | Benz[b]fluoranthene(BbFA)<br>CAS#205-99-2 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 4 | Benz[k]fluoranthene(BkFA)<br>CAS#207-08-9 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 5 | Benz[j]fluoranthene(BjFA)<br>CAS#205-82-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 6 | Benzo[a]pyrene(BaP)<br>CAS#50-32-8 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 7 | Benzo[e]pyrene(BeP)<br>CAS#192-97-2 | N.D. | N.D. | N.D. | 1 | 0.2 |
| 8 | Dibenz [a,h]anthracene (DBahA)<br>CAS#53-70-3 | N.D. | N.D. | N.D. | 1 | 0.2 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | - | - |

| **Test item(s)** | | **Results** | **Limit (mg/kg)** | **MDL (mg/kg)** |
|---|---|---|---|---|
| | | **Category I** *1 | | |
| | | **11** | | |
| 1 | Benz[a]anthracene(BaA)<br>CAS#56-55-3 | N.D. | 1 | 0.2 |
| 2 | Chrysene(CHR)<br>CAS#218-01-9 | N.D. | 1 | 0.2 |
| 3 | Benz[b]fluoranthene(BbFA)<br>CAS#205-99-2 | N.D. | 1 | 0.2 |
| 4 | Benz[k]fluoranthene(BkFA)<br>CAS#207-08-9 | N.D. | 1 | 0.2 |
| 5 | Benz[j]fluoranthene(BjFA)<br>CAS#205-82-3 | N.D. | 1 | 0.2 |

| | | | | |
|---|---|---|---|---|
| 6 | Benzo[a]pyrene(BaP)<br>CAS#50-32-8 | N.D. | 1 | 0.2 |
| 7 | Benzo[e]pyrene(BeP)<br>CAS#192-97-2 | N.D. | 1 | 0.2 |
| 8 | Dibenz [a,h]anthracene (DBahA)<br>CAS#53-70-3 | N.D. | 1 | 0.2 |
| - | **Conclusion** | **PASS** | - | - |

Remark: (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)
1：Result category
Category I：Articles come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use.
Category II ：Toys, including activity toys, and childcare articles, that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use.

## 2. Cadmium content - Item 23 of Annex XVII of REACH Regulation (EC) 1907/2006

**IEC 62321-5:2013, determined by AAS**

| Test item(s) | | Result | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|
| | | 11 | | |
| 1 | Cadmium (Cd)<br>CAS#7440-43-9 | N.D. | 1000 | 10 |
| - | **Conclusion** | **PASS** | - | - |

| Test item(s) | | Result | | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|---|
| | | 1 | 2+12+13 | 3+16+22 | 4+7 | | |
| 1 | Cadmium (Cd)<br>CAS#7440-43-9 | N.D. | N.D. | N.D. | N.D. | 100 | 10 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | **PASS** | - | - |

| Test item(s) | | Result | | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|---|
| | | 5+17+23 | 6+21+27 | 8+20+26 | 9+19+25 | | |
| 1 | Cadmium (Cd)<br>CAS#7440-43-9 | N.D. | N.D. | N.D. | N.D. | 100 | 10 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | **PASS** | - | - |

| Test item(s) | | Result | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|
| | | 10+18+24 | | |
| 1 | Cadmium (Cd) CAS#7440-43-9 | N.D. | 100 | 10 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 3. Phthalate content（DIBP、DEHP、DBP、BBP、DINP、DIDP 、DNOP） - Item 51& 52 of Annex XVII of REACH Regulation (EC) 1907/2006

**EN 14372:2004 & IEC 62321-8:2017, determined by GC-MS**

| Test item(s) | | | Result | | | | Limit (%) | MDL (%) |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2+12+13 | 3+16+22 | 4+7 | | |
| 1 | DBP | Dibutyl Phthalate CAS# 84-74-2 | N.D. | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 2 | BBP | Benzylbutyl Phthalate CAS# 85-68-7 | N.D. | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 3 | DEHP | Bis-(2-ethylhexyl)Phthalate CAS# 117-81-7 | N.D. | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 4 | DIBP | Diisobutyl phthalate CAS# 84-69-5 | N.D. | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 5 | DNOP | Di-n-octyl phthalate CAS# 117-84-0 | N.D. | N.D. | N.D. | N.D. | - | 0.005 |
| 6 | DINP | Di-iso-nonyl phthalate CAS# 28553-12-0/68515-48-0 | N.D. | N.D. | N.D. | N.D. | - | 0.010 |
| 7 | DIDP | Diisodecyl phthalate CAS# 26761-40-0 | N.D. | N.D. | N.D. | N.D. | - | 0.010 |
| - | Sum of 1, 2, 3 & 4 | | N.D. | N.D. | N.D. | N.D. | 0.1 | - |
| - | Sum of 5, 6 & 7 | | N.D. | N.D. | N.D. | N.D. | 0.1 | - |
| - | **Conclusion** | | **PASS** | **PASS** | **PASS** | **PASS** | - | - |

| Test item(s) | | | Result | | | Limit (%) | MDL (%) |
|---|---|---|---|---|---|---|---|
| | | | 5+17+23 | 6+21+27 | 8+20+26 | | |
| 1 | DBP | Dibutyl Phthalate CAS# 84-74-2 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 2 | BBP | Benzylbutyl Phthalate CAS# 85-68-7 | N.D. | N.D. | N.D. | 0.1 | 0.005 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | DEHP | Bis-(2-ethylhexyl)Phthalate CAS# 117-81-7 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 4 | DIBP | Diisobutyl phthalate CAS# 84-69-5 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 5 | DNOP | Di-n-octyl phthalate CAS# 117-84-0 | N.D. | N.D. | N.D. | - | 0.005 |
| 6 | DINP | Di-iso-nonyl phthalate CAS# 28553-12-0/68515-48-0 | N.D. | N.D. | N.D. | - | 0.010 |
| 7 | DIDP | Diisodecyl phthalate CAS# 26761-40-0 | N.D. | N.D. | N.D. | - | 0.010 |
| - | Sum of 1, 2, 3 & 4 | | N.D. | N.D. | N.D. | 0.1 | - |
| - | Sum of 5, 6 & 7 | | N.D. | N.D. | N.D. | 0.1 | - |
| **-** | **Conclusion** | | **PASS** | **PASS** | **PASS** | **-** | **-** |

| **Test item(s)** | | | **Result** | | | **Limit (%)** | **MDL (%)** |
|---|---|---|---|---|---|---|---|
| | | | **9+19+25** | **10+18+24** | **11** | | |
| 1 | DBP | Dibutyl Phthalate CAS# 84-74-2 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 2 | BBP | Benzylbutyl Phthalate CAS# 85-68-7 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 3 | DEHP | Bis-(2-ethylhexyl)Phthalate CAS# 117-81-7 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 4 | DIBP | Diisobutyl phthalate CAS# 84-69-5 | N.D. | N.D. | N.D. | 0.1 | 0.005 |
| 5 | DNOP | Di-n-octyl phthalate CAS# 117-84-0 | N.D. | N.D. | N.D. | - | 0.005 |
| 6 | DINP | Di-iso-nonyl phthalate CAS# 28553-12-0/68515-48-0 | N.D. | N.D. | N.D. | - | 0.010 |
| 7 | DIDP | Diisodecyl phthalate CAS# 26761-40-0 | N.D. | N.D. | N.D. | - | 0.010 |
| - | Sum of 1, 2, 3 & 4 | | N.D. | N.D. | N.D. | 0.1 | - |
| - | Sum of 5, 6 & 7 | | N.D. | N.D. | N.D. | 0.1 | - |
| **-** | **Conclusion** | | **PASS** | **PASS** | **PASS** | **-** | **-** |

Remark(s): (a) MDL: Method detected limit
(b) N.D.: Not detected (result is less than MDL)

## 4. Total Lead content -Item 63 of Annex XVII of REACH Regulation (EC) 1907/2006

**IEC 62321-5:2013, determined by AAS**

| Test item(s) | | Result | | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|---|
| | | 1 | 2+12+13 | 3+16+22 | 4+7 | | |
| 1 | Lead(Pb) CAS#7439-92-1 | N.D. | N.D. | N.D. | N.D. | 500 | 10 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | **PASS** | - | - |

| Test item(s) | | Result | | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|---|
| | | 5+17+23 | 6+21+27 | 8+20+26 | 9+19+25 | | |
| 1 | Lead(Pb) CAS#7439-92-1 | N.D. | N.D. | N.D. | N.D. | 500 | 10 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | **PASS** | - | - |

| Test item(s) | | Result | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|
| | | 10+18+24 | 11 | 14+15 | | |
| 1 | Lead(Pb) CAS#7439-92-1 | N.D. | N.D. | N.D. | 500 | 10 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 5. Azo colourants content - Item 43 of Annex XVII of REACH Regulation (EC) No 1907/2006 & amendment EC No 552/2009 and (EU) No 126/2013

**ISO 14362-1:2017& ISO 14362-3:2017, determined by GC-MS and HPLC**

| Test Item(s) | | Result | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|
| | | 9+19+25 | | |
| 1 | Biphenyl-4-ylamine/4-aminobiphenyl/ Xenylamine CAS#92-67-1 | N.D. | 30 | 5 |
| 2 | Benzidine CAS#92-87-5 | N.D. | 30 | 5 |
| 3 | 4-chloro-o-toluidine CAS#95-69-2 | N.D. | 30 | 5 |
| 4 | 2-Naphthylamine CAS#91-59-8 | N.D. | 30 | 5 |

| | | | | |
|---|---|---|---|---|
| 5 | o-aminoazotoluene/4-o-tolyazao-o-toluidine /4-amino-2',3-dimethylazobenzene*<br>CAS#97-56-3 | N.D. | 30 | 5 |
| 6 | 5-nitro-o-toluidine/2-amino-4-nitrotoluol*<br>CAS#99-55-8 | N.D. | 30 | 5 |
| 7 | 4-chloroaniline<br>CAS#106-47-8 | N.D. | 30 | 5 |
| 8 | 4-methoxy-m-phenylenediamine/ 2,4-diaminoanisole<br>CAS#615-05-4 | N.D. | 30 | 5 |
| 9 | 4,4'-methylenedianiline/ 4,4'-diaminodiphenylmethane<br>CAS#101-77-9 | N.D. | 30 | 5 |
| 10 | 3,3'-dichlorobenzidine/ 3,3'-dichlorobiphenyl-4,4'-ylenediamine<br>CAS#91-94-1 | N.D. | 30 | 5 |
| 11 | 3,3'-dimethoxybenzidine/o-dianisidine<br>CAS#119-90-4 | N.D. | 30 | 5 |
| 12 | 3,3'-dimethylbenzidine/4,4'-bi-o-toluidine<br>CAS#119-93-7 | N.D. | 30 | 5 |
| 13 | 4,4'-methylenedi-o-toluidine<br>CAS#838-88-0 | N.D. | 30 | 5 |
| 14 | 6-methoxy-m-toluidine/p-cresidine<br>CAS#120-71-8 | N.D. | 30 | 5 |
| 15 | 4,4'-methylene-bis-(2-chloro-aniline)/ 2,2'-dichloro-4,4'-methylene-dianiline<br>CAS#101-14-4 | N.D. | 30 | 5 |
| 16 | 4,4'-oxydianiline<br>CAS#101-80-4 | N.D. | 30 | 5 |
| 17 | 4,4'-thiodianiline<br>CAS#139-65-1 | N.D. | 30 | 5 |
| 18 | o-toluidine/2-aminotoluen<br>CAS#95-53-4 | N.D. | 30 | 5 |
| 19 | 2,4-diaminotoluene/2,4-toluylendiamine/ methyl-m-phenylenediamine<br>CAS#95-80-7 | N.D. | 30 | 5 |
| 20 | 2,4,5-trimethylaniline<br>CAS#137-17-7 | N.D. | 30 | 5 |
| 21 | o-anisidine/2-methoxyaniline<br>CAS#90-04-0 | N.D. | 30 | 5 |
| 22 | 4-aminoazobenzene**<br>CAS#60-09-3 | N.D. | 30 | 5 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) N.D.: Not detected (result is less than MDL)
(c) MDL: Method detected limit
*: The amines o-aminoazotoluene (No 5, CAS No.97-56-3) and 2-amino-4-nitrotoluene (No 6, CAS No.99-55-8) are further reduced to o-toluidine (No 18, CAS No. 95-53-4) and 2, 4-diaminotoluene (No 19, CAS No. 95-80-7).
**: Azo colorants that are able to form 4-aminoazobenzene (No 22, CAS No. 60-09-3) generate, under the condition of this method, aniline (CAS No. 62-53-3) and 1, 4-phenylendiamine (CAS No. 106-50-3).Due to detection limits, only aniline may be detected. If aniline is detected above 5mg/kg, then the presence of these colorants should be tested by ISO 14362-3:2017.

## 6. ISO 105-X12:2016 - Colour Fastness to Rubbing

**(Minimum requirement(Grade): Dry≥2-3，Wet≥2-3)**

| Test Item(s) | Result(s) | | | Requirement |
|---|---|---|---|---|
| | 9 | 19 | 25 | |
| Staining-Dry(Grade) | 4 | 4-5 | 4-5 | ≥2-3 |
| Staining-Wet(Grade) | 4-5 | 4-5 | 4-5 | ≥2-3 |
| **Conclusion** | **PASS** | **PASS** | **PASS** | / |

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

## Regulation (EC) No 1935/2004, the Commission Regulation (EU) No 10/2011 and its amendment (EU)2023/1442 and (EU) 2024/3190 - For Plastic Material

## 7. Overall migration

**EN 1186-1:2002 & EN 1186-3:2022**

| Test Item(s) | | Result | | | Limit ($mg/dm^2$) | MDL ($mg/dm^2$) |
|---|---|---|---|---|---|---|
| | | 1 | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | 3%acetic acid ,40℃ , 10d | N.D. | N.D. | N.D. | 10 | 3 |
| 2 | 50%Ethanol,40℃ , 10d | N.D. | N.D. | N.D. | 10 | 3 |
| - | **Conclusion** | - | - | **PASS** | - | - |

| Test Item(s) | | Result | | | Limit ($mg/dm^2$) | MDL ($mg/dm^2$) |
|---|---|---|---|---|---|---|
| | | 2 | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | 3%acetic acid ,40℃ , 10d | N.D. | N.D. | N.D. | 10 | 3 |
| 2 | 50%Ethanol,40℃ , 10d | N.D. | N.D. | N.D. | 10 | 3 |
| - | **Conclusion** | - | - | **PASS** | - | - |

| Test Item(s) | | Result | | | Limit ($mg/dm^2$) | MDL ($mg/dm^2$) |
|---|---|---|---|---|---|---|
| | | 3 | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | 3%acetic acid ,40℃ , 10d | N.D. | N.D. | N.D. | 10 | 3 |
| 2 | 50%Ethanol,40℃ , 10d | N.D. | N.D. | N.D. | 10 | 3 |
| - | **Conclusion** | - | - | **PASS** | - | - |

Remark(s): (a) $mg/dm^2$: milligram square decimetre
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 8. Specific migration of Heavy Metal

**EN 13130-1: 2004, determined by ICP-OES,ICP-MS,IC**

Test condition: 3%Acetic acid, 40℃ , 10d

| Test Item(s) | | Result(s) | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|
| | | 1 | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | Aluminum (Al) | N.D. | N.D. | N.D. | 1 | 0.1 |
| 2 | Ammonium | N.D. | N.D. | N.D. | - | 0.1 |
| 3 | Antimony (Sb) | N.D. | N.D. | N.D. | 0.04 | 0.01 |
| 4 | Arsenic (As) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 5 | Barium (Ba) | N.D. | N.D. | N.D. | 1 | 0.1 |
| 6 | Cadmium(Cd) | N.D. | N.D. | N.D. | Not Detected | 0.002 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | Calcium(Ca) | N.D. | N.D. | N.D. | - | 0.1 |
| 8 | Chromium (Cr) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 9 | Cobalt (Co) | N.D. | N.D. | N.D. | 0.05 | 0.01 |
| 10 | Copper (Cu) | N.D. | N.D. | N.D. | 5 | 0.5 |
| 11 | Europium (Eu) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 12 | Gadolinium (Gd) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 13 | Iron (Fe) | N.D. | N.D. | N.D. | 48 | 1 |
| 14 | Lanthanum (La) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 15 | Lead(Pb) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 16 | Lithium (Li) | N.D. | N.D. | N.D. | 0.6 | 0.1 |
| 17 | Magnesium(Mg) | N.D. | N.D. | N.D. | - | 0.1 |
| 18 | Manganese (Mn) | N.D. | N.D. | N.D. | 0.6 | 0.05 |
| 19 | Mercury(Hg) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 20 | Nickel (Ni) | N.D. | N.D. | N.D. | 0.02 | 0.01 |
| 21 | Potassium(K) | N.D. | N.D. | N.D. | - | 0.1 |
| 22 | Sodium(Na) | 0.1 | N.D. | N.D. | - | 0.1 |
| 23 | Terbium (Tb) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 24 | Zinc (Zn) | N.D. | N.D. | N.D. | 5 | 1 |
| - | **Conclusion** | - | - | **PASS** | - | - |

| **Test Item(s)** | | **Result(s)** | | | **Limit (mg/kg)** | **MDL (mg/kg)** |
|---|---|---|---|---|---|---|
| | | **2** | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | Aluminum (Al) | N.D. | N.D. | N.D. | 1 | 0.1 |
| 2 | Ammonium | N.D. | N.D. | N.D. | - | 0.1 |
| 3 | Antimony (Sb) | N.D. | N.D. | N.D. | 0.04 | 0.01 |
| 4 | Arsenic (As) | N.D. | N.D. | N.D. | Not Detected | 0.01 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | Barium (Ba) | N.D. | N.D. | N.D. | 1 | 0.1 |
| 6 | Cadmium(Cd) | N.D. | N.D. | N.D. | Not Detected | 0.002 |
| 7 | Calcium(Ca) | 5.7 | 4.1 | 3.6 | - | 0.1 |
| 8 | Chromium (Cr) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 9 | Cobalt (Co) | N.D. | N.D. | N.D. | 0.05 | 0.01 |
| 10 | Copper (Cu) | N.D. | N.D. | N.D. | 5 | 0.5 |
| 11 | Europium (Eu) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 12 | Gadolinium (Gd) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 13 | Iron (Fe) | N.D. | N.D. | N.D. | 48 | 1 |
| 14 | Lanthanum (La) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 15 | Lead(Pb) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 16 | Lithium (Li) | N.D. | N.D. | N.D. | 0.6 | 0.1 |
| 17 | Magnesium(Mg) | 0.1 | N.D. | N.D. | - | 0.1 |
| 18 | Manganese (Mn) | N.D. | N.D. | N.D. | 0.6 | 0.05 |
| 19 | Mercury(Hg) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 20 | Nickel (Ni) | N.D. | N.D. | N.D. | 0.02 | 0.01 |
| 21 | Potassium(K) | N.D. | N.D. | N.D. | - | 0.1 |
| 22 | Sodium(Na) | N.D. | N.D. | N.D. | - | 0.1 |
| 23 | Terbium (Tb) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 24 | Zinc (Zn) | N.D. | N.D. | N.D. | 5 | 1 |
| - | **Conclusion** | - | - | **PASS** | - | - |

| **Test Item(s)** | | **Result(s)** | | | **Limit (mg/kg)** | **MDL (mg/kg)** |
|---|---|---|---|---|---|---|
| | | **3** | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | Aluminum (Al) | N.D. | N.D. | N.D. | 1 | 0.1 |
| 2 | Ammonium | N.D. | N.D. | N.D. | - | 0.1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | Antimony (Sb) | N.D. | N.D. | N.D. | 0.04 | 0.01 |
| 4 | Arsenic (As) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 5 | Barium (Ba) | N.D. | N.D. | N.D. | 1 | 0.1 |
| 6 | Cadmium(Cd) | N.D. | N.D. | N.D. | Not Detected | 0.002 |
| 7 | Calcium(Ca) | N.D. | N.D. | N.D. | - | 0.1 |
| 8 | Chromium (Cr) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 9 | Cobalt (Co) | N.D. | N.D. | N.D. | 0.05 | 0.01 |
| 10 | Copper (Cu) | N.D. | N.D. | N.D. | 5 | 0.5 |
| 11 | Europium (Eu) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 12 | Gadolinium (Gd) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 13 | Iron (Fe) | N.D. | N.D. | N.D. | 48 | 1 |
| 14 | Lanthanum (La) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 15 | Lead(Pb) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 16 | Lithium (Li) | N.D. | N.D. | N.D. | 0.6 | 0.1 |
| 17 | Magnesium(Mg) | N.D. | N.D. | N.D. | - | 0.1 |
| 18 | Manganese (Mn) | N.D. | N.D. | N.D. | 0.6 | 0.05 |
| 19 | Mercury(Hg) | N.D. | N.D. | N.D. | Not Detected | 0.01 |
| 20 | Nickel (Ni) | N.D. | N.D. | N.D. | 0.02 | 0.01 |
| 21 | Potassium(K) | N.D. | N.D. | N.D. | - | 0.1 |
| 22 | Sodium(Na) | N.D. | N.D. | N.D. | - | 0.1 |
| 23 | Terbium (Tb) | N.D. | N.D. | N.D. | 0.05* | 0.01 |
| 24 | Zinc (Zn) | N.D. | N.D. | N.D. | 5 | 1 |
| - | **Conclusion** | - | - | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)
(d)*:The sum of all lanthanide substances migrating to the food or food simulant does not exceed the specific migration limit of 0,05 mg/kg

## 9. Specific migration of Primary Aromatic Amine

**EN 13130-1:2004, determined by LC-MS/MS**

Test Condition: 50%Ethanol, 40℃ , 10d

| Test Item(s) | | Result(s) | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|
| | | 1 | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | biphenyl-4-ylamine 4- aminobiphenyl xenylamine CAS No.:92-67-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 2 | Benzidine CAS No.:92-87-5 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 3 | 4-chloro-o-toluidine CAS No.:95-69-2 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 4 | 2-Naphthylamine CAS No.:91-59-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 5 | o-aminoazotoluene 4-amino-2',3-dimethylazobenzene 4-o-tolylazo-o-toluidine CAS No.:97-56-3 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 6 | 5-nitro-o-toluidine CAS No.:99-55-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 7 | 4-Chloroaniline CAS No.:106-47-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 8 | 4-methoxy-m-phenylenediamine CAS No.:615-05-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 9 | 4,4'-methylenedianiline 4,4'-diaminodiphenylmethane CAS No.:101-77-9 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 10 | 3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine CAS No.:91-94-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 11 | 3,3'-dimethoxybenzidine o-dianisidine CAS No.:119-90-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 12 | 3,3'-dimethylbenzidine 4,4'-bi-o-toluidine CAS No.:119-93-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 13 | 4,4'-methylenedi-o-toluidine CAS No.:838-88-0 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 14 | 6-methoxy-m-toluidine p- cresidine CAS No.:120-71-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 15 | 4,4'-methylene-bis-(2-chloro- aniline) 2,2'-dichloro-4,4'-methylene- dianiline CAS No.:101-14-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | 4,4'-oxydianiline<br>CAS No.:101-80-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 17 | 4,4'-thiodianiline<br>CAS No.:139-65-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 18 | o-toluidine<br>2-aminotoluene<br>CAS No.:95-53-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 19 | 4-methyl-m-phenylenediamine<br>CAS No.:95-80-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 20 | 2,4,5-trimethylaniline<br>CAS No.:137-17-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 21 | o-anisidine<br>2-methoxyaniline<br>CAS No.:90-04-0 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 22 | 4-amino azobenzene<br>CAS No.:60-09-3 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 23 | m-Phenylenediamine (m- PDA)<br>CAS No.:108-45-2 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 24 | 1,5- Diaminenaphthalene<br>CAS No.:2243-62-01 | N.D. | N.D. | N.D. | - | 0.002 |
| 25 | Aniline (ANL)<br>CAS No.:62-53-3 | N.D. | N.D. | N.D. | - | 0.002 |
| 26 | 2,4-Dimethylaniline (2,4-DMA)<br>CAS No.:95-68-1 | N.D. | N.D. | N.D. | - | 0.002 |
| 27 | 2,6-Dimethylaniline (2,6-DMA)<br>CAS No.:87-62-7 | N.D. | N.D. | N.D. | - | 0.002 |
| 28 | m-Phenylenediamine (m- PDA)<br>CAS No.:108-45-2 | N.D. | N.D. | N.D. | - | 0.002 |
| 29 | p-Phenylenediamine (p-PDA)<br>CAS No.:106-50-3 | N.D. | N.D. | N.D. | - | 0.002 |
| 30 | 2,6-Toluenediamine (2,6- TDA)<br>CAS No.:823-40-5 | N.D. | N.D. | N.D. | - | 0.002 |
| - | Sum of 24~30 | N.D. | N.D. | N.D. | 0.01 | - |
| - | **Conclusion** | - | - | **PASS** | - | - |

| **Test Item(s)** | | **Result(s)** | | | **Limit (mg/kg)** | **MDL (mg/kg)** |
|---|---|---|---|---|---|---|
| | | **2** | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | biphenyl-4-ylamine 4- aminobiphenyl xenylamine<br>CAS No.:92-67-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 2 | Benzidine<br>CAS No.:92-87-5 | N.D. | N.D. | N.D. | 0.002 | 0.002 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | 4-chloro-o-toluidine<br>CAS No.:95-69-2 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 4 | 2-Naphthylamine<br>CAS No.:91-59-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 5 | o-aminoazotoluene 4-amino-2',3-dimethylazobenzene 4-o-tolylazo-o-toluidine<br>CAS No.:97-56-3 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 6 | 5-nitro-o-toluidine<br>CAS No.:99-55-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 7 | 4-Chloroaniline<br>CAS No.:106-47-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 8 | 4-methoxy-m-phenylenediamine<br>CAS No.:615-05-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 9 | 4,4'-methylenedianiline 4,4'-diaminodiphenylmethane<br>CAS No.:101-77-9 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 10 | 3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine<br>CAS No.:91-94-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 11 | 3,3'-dimethoxybenzidine o-dianisidine<br>CAS No.:119-90-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 12 | 3,3'-dimethylbenzidine 4,4'-bi-o-toluidine<br>CAS No.:119-93-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 13 | 4,4'-methylenedi-o-toluidine<br>CAS No.:838-88-0 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 14 | 6-methoxy-m-toluidine p- cresidine<br>CAS No.:120-71-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 15 | 4,4'-methylene-bis-(2-chloro- aniline) 2,2'-dichloro-4,4'-methylene- dianiline<br>CAS No.:101-14-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 16 | 4,4'-oxydianiline<br>CAS No.:101-80-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 17 | 4,4'-thiodianiline<br>CAS No.:139-65-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 18 | o-toluidine 2-aminotoluene<br>CAS No.:95-53-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 19 | 4-methyl-m-phenylenediamine<br>CAS No.:95-80-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 20 | 2,4,5-trimethylaniline<br>CAS No.:137-17-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 21 | o-anisidine 2-methoxyaniline<br>CAS No.:90-04-0 | N.D. | N.D. | N.D. | 0.002 | 0.002 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | 4-amino azobenzene<br>CAS No.:60-09-3 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 23 | m-Phenylenediamine (m- PDA)<br>CAS No.:108-45-2 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 24 | 1,5- Diaminenaphthalene<br>CAS No.:2243-62-01 | N.D. | N.D. | N.D. | - | 0.002 |
| 25 | Aniline (ANL)<br>CAS No.:62-53-3 | N.D. | N.D. | N.D. | - | 0.002 |
| 26 | 2,4-Dimethylaniline (2,4-DMA)<br>CAS No.:95-68-1 | N.D. | N.D. | N.D. | - | 0.002 |
| 27 | 2,6-Dimethylaniline (2,6-DMA)<br>CAS No.:87-62-7 | N.D. | N.D. | N.D. | - | 0.002 |
| 28 | m-Phenylenediamine (m- PDA)<br>CAS No.:108-45-2 | N.D. | N.D. | N.D. | - | 0.002 |
| 29 | p-Phenylenediamine (p-PDA)<br>CAS No.:106-50-3 | N.D. | N.D. | N.D. | - | 0.002 |
| 30 | 2,6-Toluenediamine (2,6- TDA)<br>CAS No.:823-40-5 | N.D. | N.D. | N.D. | - | 0.002 |
| - | Sum of 24~30 | N.D. | N.D. | N.D. | 0.01 | - |
| - | **Conclusion** | - | - | **PASS** | - | - |

| **Test Item(s)** | | **Result(s)** | | | **Limit (mg/kg)** | **MDL (mg/kg)** |
|---|---|---|---|---|---|---|
| | | **3** | | | | |
| | | 1st | 2nd | 3rd | | |
| 1 | biphenyl-4-ylamine 4- aminobiphenyl xenylamine<br>CAS No.:92-67-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 2 | Benzidine<br>CAS No.:92-87-5 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 3 | 4-chloro-o-toluidine<br>CAS No.:95-69-2 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 4 | 2-Naphthylamine<br>CAS No.:91-59-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 5 | o-aminoazotoluene 4-amino-2',3-dimethylazobenzene 4-o-tolylazo-o-toluidine<br>CAS No.:97-56-3 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 6 | 5-nitro-o-toluidine<br>CAS No.:99-55-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 7 | 4-Chloroaniline<br>CAS No.:106-47-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 8 | 4-methoxy-m-phenylenediamine<br>CAS No.:615-05-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | 4,4'-methylenedianiline<br>4,4'-diaminodiphenylmethane<br>CAS No.:101-77-9 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 10 | 3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine<br>CAS No.:91-94-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 11 | 3,3'-dimethoxybenzidine o-dianisidine<br>CAS No.:119-90-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 12 | 3,3'-dimethylbenzidine<br>4,4'-bi-o-toluidine<br>CAS No.:119-93-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 13 | 4,4'-methylenedi-o-toluidine<br>CAS No.:838-88-0 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 14 | 6-methoxy-m-toluidine p- cresidine<br>CAS No.:120-71-8 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 15 | 4,4'-methylene-bis-(2-chloro- aniline)<br>2,2'-dichloro-4,4'-methylene- dianiline<br>CAS No.:101-14-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 16 | 4,4'-oxydianiline<br>CAS No.:101-80-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 17 | 4,4'-thiodianiline<br>CAS No.:139-65-1 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 18 | o-toluidine<br>2-aminotoluene<br>CAS No.:95-53-4 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 19 | 4-methyl-m-phenylenediamine<br>CAS No.:95-80-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 20 | 2,4,5-trimethylaniline<br>CAS No.:137-17-7 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 21 | o-anisidine<br>2-methoxyaniline<br>CAS No.:90-04-0 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 22 | 4-amino azobenzene<br>CAS No.:60-09-3 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 23 | m-Phenylenediamine (m- PDA)<br>CAS No.:108-45-2 | N.D. | N.D. | N.D. | 0.002 | 0.002 |
| 24 | 1,5- Diaminenaphthalene<br>CAS No.:2243-62-01 | N.D. | N.D. | N.D. | - | 0.002 |
| 25 | Aniline (ANL)<br>CAS No.:62-53-3 | N.D. | N.D. | N.D. | - | 0.002 |
| 26 | 2,4-Dimethylaniline (2,4-DMA)<br>CAS No.:95-68-1 | N.D. | N.D. | N.D. | - | 0.002 |
| 27 | 2,6-Dimethylaniline (2,6-DMA)<br>CAS No.:87-62-7 | N.D. | N.D. | N.D. | - | 0.002 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 28 | m-Phenylenediamine (m- PDA)<br>CAS No.:108-45-2 | N.D. | N.D. | N.D. | - | 0.002 |
| 29 | p-Phenylenediamine (p-PDA)<br>CAS No.:106-50-3 | N.D. | N.D. | N.D. | - | 0.002 |
| 30 | 2,6-Toluenediamine (2,6- TDA)<br>CAS No.:823-40-5 | N.D. | N.D. | N.D. | - | 0.002 |
| - | Sum of 24~30 | N.D. | N.D. | N.D. | 0.01 | - |
| - | **Conclusion** | - | - | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 10. Bisphenol A Contents

**In-house Method, determined by LC-MS/MS**

| Test Item | | Result | | | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | | |
| 1 | Bisphenol A | N.D. | N.D. | N.D. | Prohibit | 0.001 |
| - | **Conclusion** | **PASS** | **PASS** | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

**Regulation (EC) No 1935/2004 ,the Commission Regulation (EU) 2024/3190 and Council of Europe Resolution AP (2004) 5- For Silicone Material**

## 11. Overall Migration

**EN 1186-1:2002 & EN 1186-3:2022**

| Test Item | | Result | Limit ($mg/dm^2$) | MDL ($mg/dm^2$) |
|---|---|---|---|---|
| | | 4-3rd | | |
| 1 | 3%acetic acid ,40℃ , 10d | N.D. | 10 | 3 |
| 2 | 50%Ethanol,40℃ , 10d | N.D. | 10 | 3 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) $mg/dm^2$: milligram square decimetre
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 12. Bisphenol A Contents

**In-house Method, determined by LC-MS/MS**

| Test Item | | Result | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|
| | | 4 | | |
| 1 | Bisphenol A | N.D. | Prohibit | 0.001 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

**French Arrêté du 25 Novembre 1992 and French Décret 2007-766 with amendments - For Silicone Material**

## 13. Overall Migration for Silicone Materials in Contact with Foodstuffs

**EN 1186-1:2002 & EN 1186-3:2022**

| Test Item(s) | | Result | Limit ($mg/dm^2$) | MDL ($mg/dm^2$) |
|---|---|---|---|---|
| | | $4^{-3rd}$ | | |
| 1 | 3%acetic acid ,40℃ , 10d | N.D. | 10 | 3 |
| 2 | 50%Ethanol,40℃ , 10d | N.D. | 10 | 3 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) $mg/dm^2$: milligram square decimetre
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 14. Bisphenol A (BPA) content

**In-house Method,determined by LC-MS/MS**

| Test Item(s) | | Result | Client's Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|
| | | 4 | | |
| 1 | Bisphenol A | N.D. | Prohibit | 0.001 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) MDL: Method detected limit
(b) N.D.: Not detected (result is less than MDL)

## 15. Specific migration of Organotin(as Tin)

**EN 13130-1:2004, determined by ICP-OES**

Test condition: 3% Acetic acid, 40℃ , 10d

| Test Item(s) | | Result | Limit (mg/kg) | MDL (mg/kg) |
|---|---|---|---|---|
| | | 4-3rd | | |
| 1 | Organotin(as Sn) | N.D. | 0.1 | 0.01 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

## 16. Peroxide Value

**Europe pharmacopoeia,9.0 chapter 2.5.5.**

| Test Item(s) | | Result | Requirement |
|---|---|---|---|
| | | 4 | |
| 1 | Peroxide Value | Negative | Negative |
| - | **Conclusion** | **PASS** | - |

## 17. Volatile organic matter

**French Arrêté du Novembre 1992 Annex III.**

Test condition: 200℃, 4h

| Test Item(s) | | Result | Limit (%) | MDL (%) |
|---|---|---|---|---|
| | | 4 | | |
| 1 | Volatile Compounds | 0.28 | 0.5 | 0.1 |
| - | **Conclusion** | **PASS** | - | - |

Remark(s): (a) MDL: Method detected limit

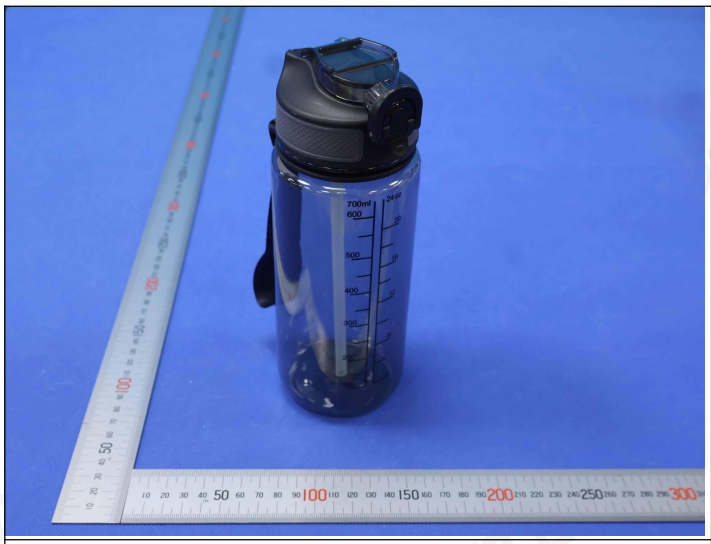
## Material List:

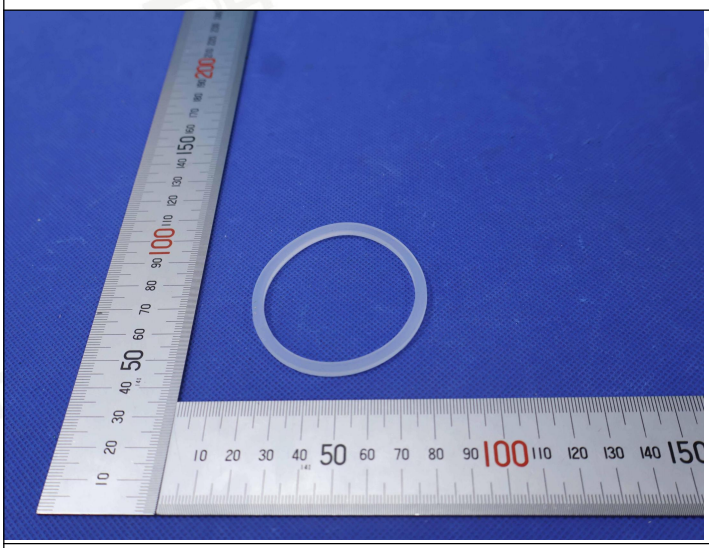
| Material # | Sample Description / Position | Client's Material Statement |
|---|---|---|
| 1 | Translucent plastic,straw | PE |
| 2 | Black plastic,lid | PP |
| 3 | Transparent black plastic,bottle | RPET |
| 4 | Translucent silicone,seal ring | Silicone |
| 5 | Transparent black plastic,lid | - |
| 6 | Grey plastic,straw holder | - |
| 7 | Translucent silicone,suction nozzle | - |
| 8 | Grey soft plastic,lid | - |
| 9 | Black textile,belt | - |
| 10 | Black plastic,ring | - |
| 11 | Black coating,bottle | - |
| 12 | Bright black plastic,buckle | - |
| 13 | Bright black plastic,button | - |
| 14 | Silvery metal,spring | - |
| 15 | Silvery metal,axle | - |
| 16 | Transparent red plastic,bottle | - |
| 17 | Transparent red plastic,lid | - |
| 18 | Red plastic,ring | - |
| 19 | Red textile,belt | - |
| 20 | Red soft plastic,lid | - |
| 21 | Red plastic,straw holder | - |
| 22 | Transparent green plastic,bottle | - |
| 23 | Transparent green plastic,lid | - |

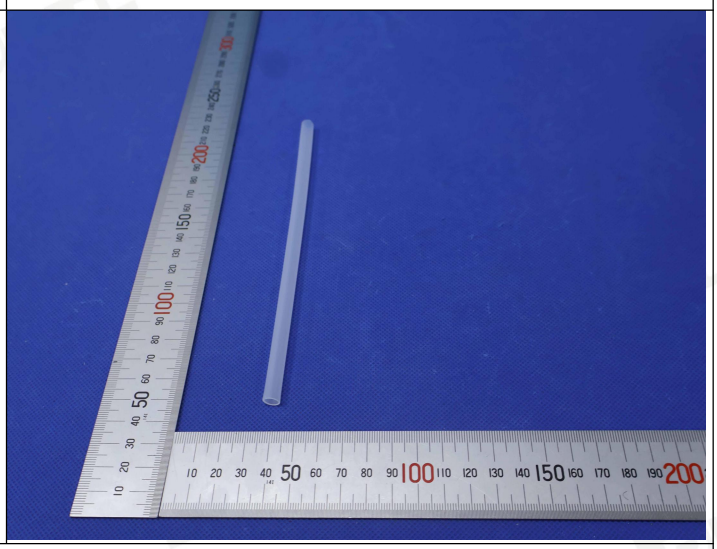
| | | |
|---|---|---|
| 24 | Green plastic,ring | - |
| 25 | Green textile,belt | - |
| 26 | Green soft plastic,lid | - |
| 27 | Green plastic,straw holder | - |

Remark(s): The test material point is selected by client,the chemical test conclusions in the report only apply to the test material.

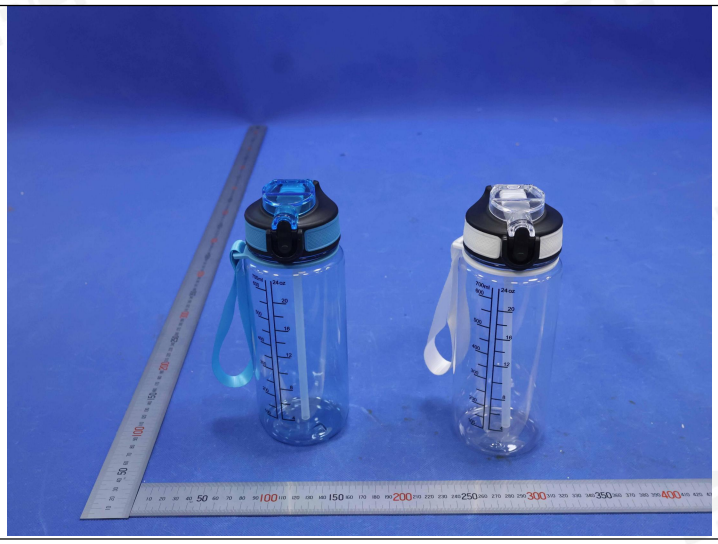
## Photo(s):







Test Sample Photo



Product Photo，For reference only

**<<< <<< END OF REPORT >>> >>>**

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