

DEKLARACJA ZGODNOŚCI WE
EC DECLARATION OF CONFORMITY

My / We LAVA GROUP S.C./ Reiter Polska Sp. Z o.o.
(nazwa producenta/ manufacturer's name)

Ul. Eugeniusza Romera 4B, 02-784 Warszawa
(adres producenta / manufacturer's address)

niniejszym deklarujemy, że następujący wyrób:
declare, under our responsibility, that the product:


BUTELKA NA WODĘ (HTR01) wykonana z tworzywa sztucznego (tritanu)
(nazwa wyrobu / name of the article) (typ wyrobu / type or model) water bottle


Spełnia wymagania następujących norm:
to which this declaration relates is in conformity with the following standards:

DIN 10955: 2004-06;
EN 1186-1: 2002;
EN 1186-3: 2022;
EN 13130-1: 2004;
European Pharmacopeia 5.0, Ph. Eur. Method 2.5.5.;
(numer i data wydania normy / title, number and date of issue of the standards)

oraz jest zgodny z postanowieniami następujących rozporządzeń (dyrektyw):
(following the provisions of):

The EC 1935/2004;
The EU 10/2011
The (LFGB), Section 30 and 31;
The EC 2023/2006;


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Warszawa dnia 01.11.2023r.
(place and date)



**BUREAU
VERITAS**

TEST REPORT

Technical Report : (6623) 289-1053
DATE : October 23, 2023
PAGE : 1 OF 18

APPLICANT:

Date of Submission: October 16, 2023
Test Period: October 16, 2023 to October 23, 2023
Sample Mode: Sample Presentation
Sample Description: Sample(s) received is/are stated to be:
A) WATER BOTTLE; COFFEE MUG; WATER BOTTLE; TRITAN BOTTLE
Test Item(s): Details see page 3

Color: / Model No./ Style No(s): HBTN01;HCM01;HBN02;
Age Grade: / HTR01
Vendor: / PO No.: /
Manufacturer: / Supplier Reference: /
End Buyer: / Country of Origin: China
Country of Destination: Oversea Country

REMARK

If there are questions or concerns on this report, please contact the following persons:

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Technical enquiry

**Bureau Veritas
Consumer Products Service Shanghai Co., Ltd.**

Laboratory Test Location:
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PREPARED BY : _____ Amy


Gorden Yu
Lab Manager

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/>, and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



**BUREAU
VERITAS**

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SUMMARY OF TEST RESULTS

| TEST REQUESTED | CONCLUSION |
|--|-------------------|
| Overall Migration Test for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |
| Specific Migration of Heavy Metals for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |
| Specific Migration of Primary Aromatic Amine for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |
| Migration of Heavy Metals Contents for Metal in Contact with Foodstuffs – Council of Europe Resolution CM/Res(2013)9 and Article 3 of Regulation (EC) No. 1935/2004 | PASS |
| Specific Migration of 2,2,4,4-Tetramethyl-1,3-cyclobutanediol(TMCD) for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |

- Note:
- 1) The tested part of the sample was specified by client.
 - 2) The test requested was specified by client.
 - 3) The test conclusion was given based on the results of tested part.
 - 4) Selected test was specified by client.



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Photo of the Tested Sample





TEST RESULT

Sample Description Assigned by Laboratory:

| Test Item | Description | Client Claimed Material |
|-----------|----------------------|-------------------------|
| 1 | Black plastic | PP |
| 2 | Grey plastic | PP |
| 3 | Silvery metal | - |
| 4 | Transparent silicone | Silicone |
| 5 | Black plastic | TPE |
| 6 | Pink plastic | Tritan |
| 7 | Whole sample | - |
| 8 | Whole sample | - |
| 9 | Whole sample | - |
| 10 | Whole sample | - |
| 11 | Whole sample | - |

Overall Migration Test for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: OM 3: 2h at 70 °C (50% Ethanol/ 3% Acetic acid)

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 1 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 5.54 | | | - | - |
| Volume of stimulant used | mL | 600 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 2 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 5.85 | | | - | - |
| Volume of stimulant used | mL | 550 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 4 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 3.06 | | | - | - |
| Volume of stimulant used | mL | 380 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |



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TEST RESULT

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 5 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 1.00 | | | - | - |
| Volume of stimulant used | mL | 100 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 6 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 3.79 | | | - | - |
| Volume of stimulant used | mL | 550 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

Note: “<” = less than
mg/dm² = milligram per square decimeter
mg/kg = milligram per kilogram

Method: EN 1186-1: 2002; EN 1186-3: 2022

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
2) For article intended for repeated use, the migration tests are carried out three times on the same test sample.



TEST RESULT

Specific Migration of Heavy Metals for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: 2h at 70 °C (3% Acetic acid)

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 1 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 1.77 | | | - |
| Volume of stimulant used | - | mL | 600 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |



TEST RESULT

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 2 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 2.06 | | | - |
| Volume of stimulant used | - | mL | 550 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |



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TEST RESULT

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 5 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 0.60 | | | - |
| Volume of stimulant used | - | mL | 100 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |



TEST RESULT

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 6 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 3.75 | | | - |
| Volume of stimulant used | - | mL | 550 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |

Note: “<” = less than
 mg/kg = milligram per kilogram

Method: EN 13130-1: 2004 and analysis by Inductively Coupled Argon Plasma Spectrometer (ICP).

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.

2) For article intended for repeated use, the migration tests are carried out three times on the same test sample.

3) Due to the fact that SML for As, Cr, Pb, Hg is specified as not detectable meaning < 0.01 mg/kg and SML for Cd is specified as not detectable meaning < 0.002 mg/kg, assessment has to be performed using the 1st migrate in any case no matter whether article/materials is intended for single or repeated use.



TEST RESULT

Specific Migration of Primary Aromatic Amine for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: 2 h at 70 °C (3% Acetic acid)

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 1 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 1.77 | | | - |
| Volume of stimulant used | mg/kg | 600 | | | - |
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 1 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 1.77 | | | - |
| Volume of stimulant used | mg/kg | 600 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl-4,4'-diaminodiphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3'-dimethylazobenzene/ 4-o-tolyazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 2 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 2.06 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|-----------------------------------|-------|-------------|-------------|-------------|-------------------------|
| | | 2 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 2.06 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



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TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl-4,4'-diaminodiphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-o-tolylazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---------------------------|-------|-------------|-------------|-------------|-------------------------|
| | | 5 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 0.60 | | | - |
| Volume of stimulant used | mg/kg | 100 | | | - |



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TEST RESULT

| | | | | | |
|---|-------|--------|--------|--------|-----------|
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 5 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 0.60 | | | - |
| Volume of stimulant used | mg/kg | 100 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl-4,4'-diaminodiphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-o-tolyazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 6 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 3.75 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|--|-------|-------------|-------------|-------------|-------------------------|
| | | 6 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 3.75 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl- | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| 4,4'-diaminodiphenylmethane | | | | | |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-o-tolyazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: EN 13130-1: 2004, LC-MS/ LC-MS/MS analysis.

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
2) PAA listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006 and 1,3-phenylenediamine are specified as not detectable meaning < 0.002 mg/kg. assessment has to be performed using the 1st migrate in any case no matter whether article/materials is intended for single or repeated use.



TEST RESULT

Migration of Heavy Metals Contents for Metal in Contact with Foodstuffs – Council of Europe Resolution CM/Res(2013)9 and Article 3 of Regulation (EC) No. 1935/2004

Test Condition: 0.5 % Citric acid: 70 °C, 2hrs

| Parameter | Unit | Result | | | Seven Times of Maximum Specific Release Limit(s) (SRLs) ^[a, b] |
|--------------------------|-------|-------------|-------------|---|---|
| | | 3 | | | |
| | | 1st Migrate | 2nd Migrate | Sum of 1st & 2nd Migrate ^[b] | |
| Filling volume | mL | 400 | 400 | - | - |
| Volume of stimulant used | mL | 400 | 400 | - | - |
| Aluminum (Al) | mg/kg | <0.1 | <0.1 | <0.1 | 35 |
| Antimony (Sb) | mg/kg | <0.004 | <0.004 | <0.004 | 0.28 |
| Chromium (Cr) | mg/kg | <0.1 | <0.1 | <0.1 | 1.75 |
| Cobalt (Co) | mg/kg | <0.005 | <0.005 | <0.005 | 0.14 |
| Copper (Cu) | mg/kg | <0.5 | <0.5 | <0.5 | 28 |
| Iron (Fe) | mg/kg | <5 | <5 | <5 | 280 |
| Magnesium (Mg) | mg/kg | <0.5 | <0.5 | <0.5 | - |
| Manganese (Mn) | mg/kg | <0.1 | <0.1 | <0.1 | 12.6 |
| Molybdenum (Mo) | mg/kg | <0.01 | <0.01 | <0.01 | 0.84 |
| Nickel (Ni) | mg/kg | <0.02 | <0.02 | <0.02 | 0.98 |
| Silver (Ag) | mg/kg | <0.01 | <0.01 | <0.01 | 0.56 |
| Tin (Sn) | mg/kg | <5 | <5 | <5 | 700 |
| Titanium (Ti) | mg/kg | <0.5 | <0.5 | <0.5 | - |
| Vanadium (V) | mg/kg | <0.01 | <0.01 | <0.01 | 0.07 |
| Zinc (Zn) | mg/kg | <5 | <5 | <5 | 35 |
| Arsenic (As) | mg/kg | <0.002 | <0.002 | <0.002 | 0.014 |
| Barium (Ba) | mg/kg | <0.1 | <0.1 | <0.1 | 8.4 |
| Beryllium (Be) | mg/kg | <0.001 | <0.001 | <0.001 | 0.07 |
| Cadmium (Cd) | mg/kg | <0.001 | <0.001 | <0.001 | 0.035 |
| Lead (Pb) | mg/kg | 0.00319 | <0.002 | <0.00519 | 0.07 |
| Lithium (Li) | mg/kg | <0.01 | <0.01 | <0.01 | 0.336 |
| Mercury (Hg) | mg/kg | <0.003 | <0.003 | <0.003 | 0.021 |
| Thallium (Tl) | mg/kg | <0.0001 | <0.0001 | <0.0001 | 0.0007 |
| Conclusion | - | - | - | PASS | - |



TEST RESULT

| Parameter | Unit | Result | Maximum Specific Release Limit(s) (SRLs) ^[a] |
|--------------------------|-------|-------------|---|
| | | 3 | |
| | | 3rd Migrate | |
| Filling volume | mL | 400 | - |
| Volume of stimulant used | mL | 400 | - |
| Aluminum (Al) | mg/kg | <0.1 | 5 |
| Antimony (Sb) | mg/kg | <0.004 | 0.04 |
| Chromium (Cr) | mg/kg | <0.1 | 0.250 |
| Cobalt (Co) | mg/kg | <0.005 | 0.02 |
| Copper (Cu) | mg/kg | <0.5 | 4 |
| Iron (Fe) | mg/kg | <5 | 40 |
| Magnesium (Mg) | mg/kg | <0.5 | - |
| Manganese (Mn) | mg/kg | <0.1 | 1.8 |
| Molybdenum (Mo) | mg/kg | <0.01 | 0.12 |
| Nickel (Ni) | mg/kg | <0.02 | 0.14 |
| Silver (Ag) | mg/kg | <0.01 | 0.08 |
| Tin (Sn) | mg/kg | <5 | 100 |
| Titanium (Ti) | mg/kg | <0.5 | - |
| Vanadium (V) | mg/kg | <0.01 | 0.01 |
| Zinc (Zn) | mg/kg | <5 | 5 |
| Arsenic (As) | mg/kg | <0.002 | 0.002 |
| Barium (Ba) | mg/kg | <0.1 | 1.2 |
| Beryllium (Be) | mg/kg | <0.001 | 0.01 |
| Cadmium (Cd) | mg/kg | <0.001 | 0.005 |
| Lead (Pb) | mg/kg | <0.002 | 0.01 |
| Lithium (Li) | mg/kg | <0.01 | 0.048 |
| Mercury (Hg) | mg/kg | <0.003 | 0.003 |
| Thallium (Tl) | mg/kg | <0.0001 | 0.0001 |
| Conclusion | - | PASS | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: With reference to Metals and Alloys used in Food Contact Materials and articles - A Practical Guide to Manufacturers and Regulators (2013 1st Edition) published by European Directorate for the Quality of Medicines and HealthCare (EDQM), Chapter 3.

Remark: 1) ^[a] denotes as this (these) maximum specific release limit(s) was (were) referenced from Metals and Alloys used in Food Contact Materials and articles - A Practical Guide to Manufacturers and Regulators (2013 1st Edition) published by European Directorate for the Quality of Medicines and HealthCare (EDQM), Chapter 1, Article 4, Tables 1 and 2.
2) Appropriate test condition(s) was (were) selected according to Guidelines on Testing Conditions for Articles in Contact with Foodstuffs (With a Focus on Kitchenware) (2009 1st Edition) published by European Commission Joint Research Center (JRC).
3) ^[b] denotes as the sum of the results of the first and second migrates should not be exceed seven times the SRL



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TEST RESULT

Specific Migration of 2,2,4,4-Tetramethyl-1,3-cyclobutanediol(TMCD) for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: 3% Acetic acid: 70 °C, 2 hrs

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit(3 rd) |
|---|----------------|-----------------|-------------|-------------|-------------|---|
| | | | 6 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 3.79 | | | - |
| Volume of simulant used | - | mL | 550 | | | - |
| 2,2,4,4-Tetramethyl-1,3-cyclobutanediol(TMCD) | 3% Acetic acid | mg/kg | <2.5 | <2.5 | <2.5 | 5 |
| Conclusion | - | - | PASS | | | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: EN 13130-1: 2004 and analysis by Gas Chromatograph Mass Spectrometer (GC-MS).

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
2) For article intended for repeated use, the migration tests are carried out three times on the same test sample.

END



TEST REPORT

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APPLICANT:

Date of Submission: October 16, 2023
 Test Period: October 16, 2023 to November 6, 2023
 Sample Mode: Sample Presentation
 Sample Description: Sample(s) received is/are stated to be:
 A) WATER BOTTLE; COFFEE MUG; WATER BOTTLE; TRITAN BOTTLE
 Test Item(s): Details see page 3

Color: / Model No./ Style No(s): HBTN01;HCM01;HBN02; HTR01
 Age Grade: / PO No.: /
 Vendor: / Supplier Reference: /
 Manufacturer: / Country of Origin: China
 End Buyer: / Country of Destination: Oversea Country

SUMMARY OF TEST RESULTS

| TEST REQUESTED | CONCLUSION |
|--|------------|
| Bisphenol A Contents for Plastic Materials in Contact with Foodstuffs – French Loi 2012-1442 | DATA |

- Note:
- 1) The tested part of the sample was specified by client.
 - 2) The test requested was specified by client.
 - 3) The test conclusion was given based on the results of tested part.
 - 4) Selected test was specified by client.

REMARK

If there are questions or concerns on this report, please contact the following persons:

General enquiry and invoicing

Mr. Max Ling
 (021) 2416 6833
 Max.ling@cn.bureauveritas.com
 Ms. Yucy Li
 (021) 2408 1904
 yucy.li@bureauveritas.com

Technical enquiry



**Bureau Veritas
 Consumer Products Service Shanghai Co., Ltd.**

Laboratory Test Location:
 No.368,Guangzhong Road, Zhuanqiao Town, Minhang, Shanghai
 No.168,Guanghua Road, Zhuanqiao Town, Minhang, Shanghai

PREPARED BY : _____ Amy



 Gordon Yu
 Lab Manager

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/>, and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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Photo of the Tested Sample





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TEST RESULT

Sample Description Assigned by Laboratory:

| Test Item | Description | Client Claimed Material |
|-----------|--|-------------------------|
| 1 | Black plastic | PP |
| 2 | Grey plastic (2023-11-2 Second submission) | PP |
| 3 | Pink plastic (2023-11-2 Second submission) | ABS |
| 4 | Transparent silicone | Silicone |
| 5 | Black plastic | TPE |
| 6 | Pink plastic | Tritan |
| 7 | Black coating | Coating |
| 8 | Blue coating | Coating |
| 9 | Red coating | Coating |
| 10 | Black plastic | - |

Bisphenol A Contents for Plastic Materials in Contact with Foodstuffs – French Loi 2012-1442

| Parameter | Unit | Result | | | | Maximum Allowable Limit |
|-------------------|-------|--------|------|------|------|-------------------------|
| | | 1 | 2 | 3 | 4 | |
| Bisphenol A | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | Not Detected |
| Conclusion | - | DATA | DATA | DATA | DATA | - |

| Parameter | Unit | Result | | | | Maximum Allowable Limit |
|-------------------|-------|--------|------|------|------|-------------------------|
| | | 5 | 6 | 7 | 8 | |
| Bisphenol A | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | Not Detected |
| Conclusion | - | DATA | DATA | DATA | DATA | - |

| Parameter | Unit | Result | | Maximum Allowable Limit |
|-------------------|-------|--------|------|-------------------------|
| | | 9 | 10 | |
| Bisphenol A | mg/kg | <0.1 | <0.1 | Not Detected |
| Conclusion | - | DATA | DATA | - |

Note: “<” = less than
注释: “<” = 小于

Method: Solvent extraction and analysis by Liquid Chromatograph Mass Spectrometer (LC-MS).
方法: 溶剂萃取, LC-MS 分析

END



TEST REPORT

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 DATE : October 24, 2023
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APPLICANT:

Date of Submission: October 16, 2023
 Test Period: October 16, 2023 to October 24, 2023
 Sample Mode: Sample Presentation
 Sample Description: Sample(s) received is/are stated to be:
 A) WATER BOTTLE; COFFEE MUG; WATER BOTTLE; TRITAN BOTTLE
 Test Item(s): Details see page 3

Color: / Model No./ Style No(s): HBTN01;HCM01;HBN02; HTR01
 Age Grade: / PO No.: /
 Vendor: / Supplier Reference: /
 Manufacturer: / Country of Origin: China
 End Buyer: / Country of Destination: Oversea Country

REMARK

If there are questions or concerns on this report, please contact the following persons:

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Bureau Veritas 检验检测专用章
Consumer Products Service Shanghai Co., Ltd.

Laboratory Test Location:
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PREPARED BY : _____ Amy

Gordon Yu
Lab Manager

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SUMMARY OF TEST RESULTS

| TEST REQUESTED | CONCLUSION |
|--|-------------------|
| Sensory Test (Odour and Taste) for Materials in Contact with Foodstuffs – EC No. 1935/2004 and § 30 and 31 LFGB and BfR Recommendation | PASS |
| Overall Migration Test for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |
| Peroxides Value for Plastic Materials in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation | PASS |
| Specific Migration of Heavy Metals for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |
| Specific Migration of Primary Aromatic Amine for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |
| Total Chromium, Hafnium, Vanadium and Zirconium Content for Plastic Materials in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation | PASS |
| Migration of Heavy Metals Contents for Metal in Contact with | PASS |
| Volatile Organic Matter Content for Plastic Materials in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation | PASS |
| Extractable Matter Content for Silicon in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation | PASS |
| Specific Migration of 2,2,4,4-Tetramethyl-1,3-cyclobutanediol(TMCD) for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments | PASS |

- Note:
- 1) The tested part of the sample was specified by client.
 - 2) The test requested was specified by client.
 - 3) The test conclusion was given based on the results of tested part.
 - 4) Selected test was specified by client.



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Photo of the Tested Sample





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TEST RESULT

Sample Description Assigned by Laboratory:

| Test Item | Description | Client Claimed Material |
|-----------|----------------------|-------------------------|
| 1 | Black plastic | PP |
| 2 | Grey plastic | PP |
| 3 | Silvery metal | - |
| 4 | Transparent silicone | Silicone |
| 5 | Black plastic | TPE |
| 6 | Pink plastic | Tritan |
| 7 | Whole sample | - |
| 8 | Whole sample | - |
| 9 | Whole sample | - |
| 10 | Whole sample | - |
| 11 | Whole sample | - |

Sensory Test (Odour and Taste) for Materials in Contact with Foodstuffs – EC No. 1935/2004 and § 30 and 31 LFGB and BfR Recommendation

| Parameter | Result | | Maximum Allowable Limit |
|---|--------|------|-------------------------|
| | 7 | 8 | |
| Odour transfer into foodstuff through simulant, Mineral water | 0 | 0 | 2.5 Scale |
| Taste transfer into foodstuff through simulant, Mineral water | 0 | 0 | 2.5 Scale |
| Conclusion | PASS | PASS | - |

| Parameter | Result | | Maximum Allowable Limit |
|---|--------|------|-------------------------|
| | 9 | 10 | |
| Odour transfer into foodstuff through simulant, Mineral water | 0 | 0 | 2.5 Scale |
| Taste transfer into foodstuff through simulant, Mineral water | 0 | 0 | 2.5 Scale |
| Conclusion | PASS | PASS | - |

| Parameter | Result | | Maximum Allowable Limit |
|---|--------|--|-------------------------|
| | 11 | | |
| Odour transfer into foodstuff through simulant, Mineral water | 0 | | 2.5 Scale |
| Taste transfer into foodstuff through simulant, Mineral water | 0 | | 2.5 Scale |
| Conclusion | PASS | | - |

Note: Scale: 0 = no perceptible off-odour (or taste transfer);
1 = off-odour (or taste transfer) just perceptible (but still difficult to define);
2 = slight off-odour (or taste transfer);
3 = distinct off-odour (or taste transfer);
4 = strong off-odour (or taste transfer)

Method: DIN 10955: 2004-06



TEST RESULT

Overall Migration Test for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: OM 3: 2h at 70 °C (50% Ethanol/ 3% Acetic acid)

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 1 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 5.54 | | | - | - |
| Volume of stimulant used | mL | 600 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 2 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 5.85 | | | - | - |
| Volume of stimulant used | mL | 550 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 4 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 3.06 | | | - | - |
| Volume of stimulant used | mL | 380 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 5 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 1.00 | | | - | - |
| Volume of stimulant used | mL | 100 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |



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TEST RESULT

| Simulant Used | Unit | Result | | | Maximum Allowable Limit (3 rd) | Analytical Tolerance |
|---------------------------|--------------------|-------------|-------------|-------------|--|----------------------|
| | | 6 | | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | | |
| Food contact surface area | dm ² | 3.79 | | | - | - |
| Volume of stimulant used | mL | 550 | | | - | - |
| 50% Ethanol | mg/dm ² | <5 | <5 | <5 | 10 | +2 |
| 3% Acetic acid | mg/dm ² | <5 | <5 | <5 | | |
| Conclusion | - | PASS | | | - | - |

Note: “<” = less than
mg/dm² = milligram per square decimeter
mg/kg = milligram per kilogram

Method: EN 1186-1: 2002; EN 1186-3: 2022

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
2) For article intended for repeated use, the migration tests are carried out three times on the same test sample.

Peroxides Value for Plastic Materials in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation

| Parameter | Result | | | Maximum Allowable Limit |
|------------|--------|--------|--------|-------------------------|
| | 1 | 2 | 4 | |
| Peroxides | Absent | Absent | Absent | Absent |
| Conclusion | PASS | PASS | PASS | - |

Method: European Pharmacopeia 5.0, Ph. Eur. Method 2.5.5.



TEST RESULT

Specific Migration of Heavy Metals for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: 2h at 70 °C (3% Acetic acid)

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 1 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 1.77 | | | - |
| Volume of stimulant used | - | mL | 600 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |



TEST RESULT

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 2 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 2.06 | | | - |
| Volume of stimulant used | - | mL | 550 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |



TEST RESULT

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 5 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 0.60 | | | - |
| Volume of stimulant used | - | mL | 100 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |



TEST RESULT

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit |
|--|----------------|-----------------|-------------|-------------|-------------|-------------------------|
| | | | 6 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 3.75 | | | - |
| Volume of stimulant used | - | mL | 550 | | | - |
| Barium (Ba) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Cobalt (Co) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Copper (Cu) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Iron (Fe) | 3% Acetic acid | mg/kg | <4.8 | <4.8 | <4.8 | 48 |
| Lithium (Li) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Manganese (Mn) | 3% Acetic acid | mg/kg | <0.06 | <0.06 | <0.06 | 0.6 |
| Zinc (Zn) | 3% Acetic acid | mg/kg | <0.5 | <0.5 | <0.5 | 5 |
| Aluminum (Al) | 3% Acetic acid | mg/kg | <0.1 | <0.1 | <0.1 | 1 |
| Nickel (Ni) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.02 |
| Antimony (Sb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.04 |
| Arsenic (As) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Cadmium (Cd) | 3% Acetic acid | mg/kg | <0.002 | <0.002 | <0.002 | Not detected |
| Chromium (Cr) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Europium (Eu) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Gadolinium (Gd) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lanthanum (La) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Lead (Pb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Mercury (Hg) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | Not detected |
| Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Sum of Europium (Eu), Gadolinium (Gd), Lanthanum (La), and/or Terbium (Tb) | 3% Acetic acid | mg/kg | <0.01 | <0.01 | <0.01 | 0.05 |
| Conclusion | - | - | PASS | | | - |

Note: “<” = less than
 mg/kg = milligram per kilogram

Method: EN 13130-1: 2004 and analysis by Inductively Coupled Argon Plasma Spectrometer (ICP).

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
 2) For article intended for repeated use, the migration tests are carried out three times on the same test sample.
 3) Due to the fact that SML for As, Cr, Pb, Hg is specified as not detectable meaning < 0.01 mg/kg and SML for Cd is specified as not detectable meaning < 0.002 mg/kg, assessment has to be performed using the 1st migrate in any case no matter whether article/materials is intended for single or repeated use.



TEST RESULT

Specific Migration of Primary Aromatic Amine for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: 2 h at 70 °C (3% Acetic acid)

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 1 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 1.77 | | | - |
| Volume of stimulant used | mg/kg | 600 | | | - |
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 1 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 1.77 | | | - |
| Volume of stimulant used | mg/kg | 600 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl-4,4'-diaminodiphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3'-dimethylazobenzene/ 4-o-tolyazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 2 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 2.06 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylylidine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylylidine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|-----------------------------------|-------|-------------|-------------|-------------|-------------------------|
| | | 2 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 2.06 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



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TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl-4,4'-diaminodiphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-o-tolylazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---------------------------|-------|-------------|-------------|-------------|-------------------------|
| | | 5 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 0.60 | | | - |
| Volume of stimulant used | mg/kg | 100 | | | - |



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TEST RESULT

| | | | | | |
|---|-------|--------|--------|--------|-----------|
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 5 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 0.60 | | | - |
| Volume of stimulant used | mg/kg | 100 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl-4,4'-diaminodiphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-o-tolyazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|---|-------|-------------|-------------|-------------|-------------------------|
| | | 6 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 3.75 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| Aniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.01(sum) |
| 2,4-Dimethylaniline / 2,4-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Dimethylaniline / 2,6-xylydine | mg/kg | <0.002 | <0.002 | <0.002 | |
| p-Phenylenediamine / 1,4-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 2,6-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | |
| 1,5-Diaminenaphthalene | mg/kg | <0.002 | <0.002 | <0.002 | |
| Conclusion | - | PASS | | | - |

Primary Aromatic Amines (PAAs)

| Parameter | Unit | Result | | | Maximum Allowable Limit |
|--|-------|-------------|-------------|-------------|-------------------------|
| | | 6 | | | |
| | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | mg/kg | 3.75 | | | - |
| Volume of stimulant used | mg/kg | 550 | | | - |
| 4-aminobiphenyl / 4-biphenylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-anisidine / 2-methoxyaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Benzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-aniline / p-chloroaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Chloro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Diaminodiphenylether / 4,4'-oxydianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4-Methylenedi-o-toluidine / 3,3'-dimethyl- | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |



TEST RESULT

| | | | | | |
|--|-------|--------|--------|--------|-------|
| 4,4'-diaminodiphenylmethane | | | | | |
| 2-Methoxy-5-methylaniline / p-cresidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-Methoxy-m-phenylenediamine / 2,4-diaminoanisole | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-Toluidine / 2-aminotoluene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4-Toluenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3-Dimethylbenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2,4,5-Trimethylaniline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| m-Phenylenediamine / 1,3-phenylenediamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 2-naphthylamine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-o-tolylazo-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 5-nitro-o-toluidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dichlorobenzidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 3,3'-dimethoxybenzidine / o-dianisidine | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4,4'-thiodianiline | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| 4-amino azobenzene | mg/kg | <0.002 | <0.002 | <0.002 | 0.002 |
| Conclusion | - | PASS | | | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: EN 13130-1: 2004, LC-MS/ LC-MS/MS analysis.

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
2) PAA listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006 and 1,3-phenylenediamine are specified as not detectable meaning < 0.002 mg/kg. assessment has to be performed using the 1st migrate in any case no matter whether article/materials is intended for single or repeated use.



TEST RESULT

Total Chromium, Hafnium, Vanadium and Zirconium Content for Plastic Materials in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation

| Parameter | Unit | Result | | Maximum Allowable Limit |
|----------------------|-------|--------|------|-------------------------|
| | | 1 | 2 | |
| Total Chromium (Cr) | mg/kg | <2 | 5.85 | 10 |
| Total Hafnium (Hf) | mg/kg | <10 | <10 | 100 |
| Total Vanadium (V) | mg/kg | <2 | <2 | 20 |
| Total Zirconium (Zr) | mg/kg | <10 | <10 | 100 |
| Conclusion | - | PASS | PASS | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: Acid digestion and analysis by Inductively Coupled Argon Plasma Spectrometer (ICP).

Remark: The limit refers to BfR Recommendation VII.

Migration of Heavy Metals Contents for Metal in Contact with Foodstuffs

Test Condition: 0.5 % Citric acid: 70 °C, 2hrs

| Parameter | Unit | Result | | | Seven Times of Maximum Specific Release Limit(s) (SRLs) ^[a, b] |
|--------------------------|-------|-------------|-------------|---|---|
| | | 3 | | | |
| | | 1st Migrate | 2nd Migrate | Sum of 1st & 2nd Migrate ^[b] | |
| Filling volume | mL | 400 | 400 | - | - |
| Volume of stimulant used | mL | 400 | 400 | - | - |
| Aluminum (Al) | mg/kg | <0.1 | <0.1 | <0.1 | 35 |
| Antimony (Sb) | mg/kg | <0.004 | <0.004 | <0.004 | 0.28 |
| Chromium (Cr) | mg/kg | <0.1 | <0.1 | <0.1 | 1.75 |
| Cobalt (Co) | mg/kg | <0.005 | <0.005 | <0.005 | 0.14 |
| Copper (Cu) | mg/kg | <0.5 | <0.5 | <0.5 | 28 |
| Iron (Fe) | mg/kg | <5 | <5 | <5 | 280 |
| Magnesium (Mg) | mg/kg | <0.5 | <0.5 | <0.5 | - |
| Manganese (Mn) | mg/kg | <0.1 | <0.1 | <0.1 | 12.6 |
| Molybdenum (Mo) | mg/kg | <0.01 | <0.01 | <0.01 | 0.84 |
| Nickel (Ni) | mg/kg | <0.02 | <0.02 | <0.02 | 0.98 |
| Silver (Ag) | mg/kg | <0.01 | <0.01 | <0.01 | 0.56 |
| Tin (Sn) | mg/kg | <5 | <5 | <5 | 700 |
| Titanium (Ti) | mg/kg | <0.5 | <0.5 | <0.5 | - |
| Vanadium (V) | mg/kg | <0.01 | <0.01 | <0.01 | 0.07 |
| Zinc (Zn) | mg/kg | <5 | <5 | <5 | 35 |
| Arsenic (As) | mg/kg | <0.002 | <0.002 | <0.002 | 0.014 |
| Barium (Ba) | mg/kg | <0.1 | <0.1 | <0.1 | 8.4 |
| Beryllium (Be) | mg/kg | <0.001 | <0.001 | <0.001 | 0.07 |
| Cadmium (Cd) | mg/kg | <0.001 | <0.001 | <0.001 | 0.035 |
| Lead (Pb) | mg/kg | <0.002 | <0.002 | <0.002 | 0.07 |
| Lithium (Li) | mg/kg | <0.01 | <0.01 | <0.01 | 0.336 |
| Mercury (Hg) | mg/kg | <0.003 | <0.003 | <0.003 | 0.021 |
| Thallium (Tl) | mg/kg | <0.0001 | <0.0001 | <0.0001 | 0.0007 |
| Conclusion | - | - | - | PASS | - |



TEST RESULT

| Parameter | Unit | Result | Maximum Specific Release Limit(s) (SRLs) ^[a] |
|--------------------------|-------|-------------|---|
| | | 3 | |
| | | 3rd Migrate | |
| Filling volume | mL | 400 | - |
| Volume of stimulant used | mL | 400 | - |
| Aluminum (Al) | mg/kg | <0.1 | 5 |
| Antimony (Sb) | mg/kg | <0.004 | 0.04 |
| Chromium (Cr) | mg/kg | <0.1 | 0.250 |
| Cobalt (Co) | mg/kg | <0.005 | 0.02 |
| Copper (Cu) | mg/kg | <0.5 | 4 |
| Iron (Fe) | mg/kg | <5 | 40 |
| Magnesium (Mg) | mg/kg | <0.5 | - |
| Manganese (Mn) | mg/kg | <0.1 | 1.8 |
| Molybdenum (Mo) | mg/kg | <0.01 | 0.12 |
| Nickel (Ni) | mg/kg | <0.02 | 0.14 |
| Silver (Ag) | mg/kg | <0.01 | 0.08 |
| Tin (Sn) | mg/kg | <5 | 100 |
| Titanium (Ti) | mg/kg | <0.5 | - |
| Vanadium (V) | mg/kg | <0.01 | 0.01 |
| Zinc (Zn) | mg/kg | <5 | 5 |
| Arsenic (As) | mg/kg | <0.002 | 0.002 |
| Barium (Ba) | mg/kg | <0.1 | 1.2 |
| Beryllium (Be) | mg/kg | <0.001 | 0.01 |
| Cadmium (Cd) | mg/kg | <0.001 | 0.005 |
| Lead (Pb) | mg/kg | <0.002 | 0.01 |
| Lithium (Li) | mg/kg | <0.01 | 0.048 |
| Mercury (Hg) | mg/kg | <0.003 | 0.003 |
| Thallium (Tl) | mg/kg | <0.0001 | 0.0001 |
| Conclusion | - | PASS | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: With reference to Metals and Alloys used in Food Contact Materials and articles - A Practical Guide to Manufacturers and Regulators (2013 1st Edition) published by European Directorate for the Quality of Medicines and HealthCare (EDQM), Chapter 3.

Remark: 1) ^[a] denotes as this (these) maximum specific release limit(s) was (were) referenced from Metals and Alloys used in Food Contact Materials and articles - A Practical Guide to Manufacturers and Regulators (2013 1st Edition) published by European Directorate for the Quality of Medicines and HealthCare (EDQM), Chapter 1, Article 4, Tables 1 and 2.
2) Appropriate test condition(s) was (were) selected according to Guidelines on Testing Conditions for Articles in Contact with Foodstuffs (With a Focus on Kitchenware) (2009 1st Edition) published by European Commission Joint Research Center (JRC).
3) ^[b] denotes as the sum of the results of the first and second migrates should not be exceed seven times the SRL



TEST RESULT

Volatile Organic Matter Content for Plastic Materials in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation

| Parameter | Unit | Result | Maximum Allowable Limit |
|-------------------------|---------|--------|-------------------------|
| | | 4 | |
| Volatile Organic Matter | % (w/w) | 0.32 | 0.5 |
| Conclusion | - | PASS | - |

Note: “<” = less than
% w/w = percent weight by weight

Method: Gravimetric method.

Remark: The limit refers to BfR Recommendation XV.

Extractable Matter Content for Silicon in Contact with Foodstuffs – § 30 and 31 LFGB and BfR Recommendation

| Parameter | Unit | Result | Maximum Allowable Limit |
|--------------------|-------|--------|-------------------------|
| | | 4 | |
| Extractable Matter | % w/w | <0.05 | 0.5 |
| Conclusion | - | PASS | - |

Note: “<” = less than
% w/w = percent weight by weight

Method: Gravimetric method after reflux for 5 hours with water.

Remark: The limit refers to BfR Recommendation XV.

Specific Migration of 2,2,4,4-Tetramethyl-1,3-cyclobutanediol(TMCD) for Plastic Materials in Contact with Foodstuffs – Commission Regulation (EU) No. 10/2011 and Its Amendments

Test Condition: 3% Acetic acid: 70 °C, 2 hrs

| Parameter | Simulant Used | Unit | Result | | | Maximum Allowable Limit(3 rd) |
|---|----------------|-----------------|-------------|-------------|-------------|---|
| | | | 6 | | | |
| | | | 1st Migrate | 2nd Migrate | 3rd Migrate | |
| Food contact surface area | - | dm ² | 3.79 | | | - |
| Volume of simulant used | - | mL | 550 | | | - |
| 2,2,4,4-Tetramethyl-1,3-cyclobutanediol(TMCD) | 3% Acetic acid | mg/kg | <2.5 | <2.5 | <2.5 | 5 |
| Conclusion | - | - | PASS | | | - |

Note: “<” = less than
mg/kg = milligram per kilogram

Method: EN 13130-1: 2004 and analysis by Gas Chromatograph Mass Spectrometer (GC-MS).

Remark: 1) The migration test is carried out according to EU regulation No. 10/2011 and the corresponding regulatory statutes.
2) For article intended for repeated use, the migration tests are carried out three times on the same test sample.

END