

Report No.: 48252328b 001

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Client: **Mars Valve Co., Ltd.**
No. 83, Sec. 1, Chongde 8th Rd., Beitun Dist., Taichung City 406032, Taiwan,
R.O.C.

Test item(s): 4 material(s) of metal, 3 material(s) of plastic

Identification/Model No(s): BALL VALVE

Sample obtaining method: Sending by customer

Condition at delivery: Test item complete and undamaged.

Sample receiving date: 2024-09-16

Testing period: 2024-09-16 – 2025-01-14

Place of testing: TÜV Rheinland Hong Kong Ltd.

Test specification:

Selected parameter(s) requested by the customer with reference to following regulation:
Article 3 (1) of Regulation (EC) No. 1935/2004 and Commission Regulation (EU)
No.10/2011 and its amendments

- Sensorial examination
- Specific Release of Metals
- Global Migration
- Specific Migration of Heavy Metals
- Specific Migration of Primary Aromatic Amines from Plastic
- Tetrafluoroethylene

Test result:

Pass
Pass
Pass
Pass
Pass
Pass

For and on behalf of
TÜV Rheinland Taiwan Ltd.

Arthur Cheng

Arthur Cheng/Project Manager
Name/Position



2025-01-17
Date

Report Authenticity Verification, please email: softlines@tw.tuv.com.

*Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.
This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts.
This test report does not entitle to carry any safety mark on this or similar products.
"Decision Rule" document announced in our website (<https://www.tuv.com/landingpage/en/qm-gcn/>) describes the statement of conformity and its rule of
enforcement for test results are applicable throughout this test report.*

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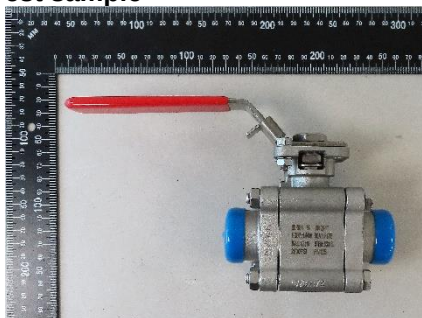
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Material List:

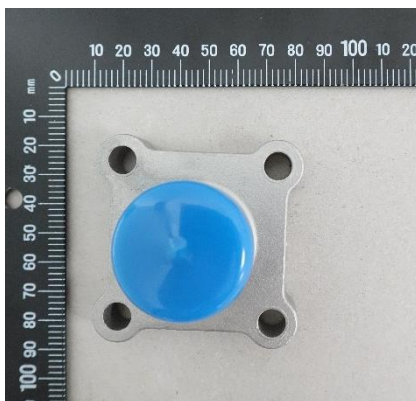
Item: BALL VALVE

Material No.	Material	Color	Location
1	Metal	Metallic	TCL240916-02; CF8M/1.4408
2	Metal	Metallic	TCL240916-02; CF3M/1.4409
3	Metal	Metallic	TCL240916-02; SS316
4	Metal	Metallic	TCL240916-02; SS316L
5	Plastic	White	TCL240916-02; PTFE
8	Plastic	Black	TCL240916-02; CTFE
9	Plastic	White	TCL240916-02; TFM1600

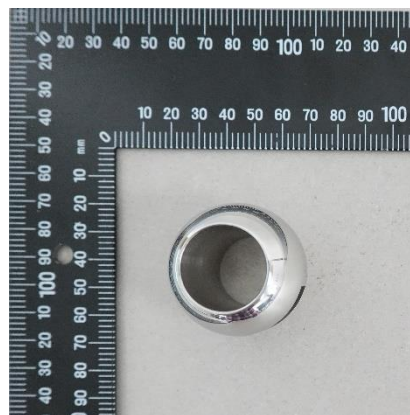
* Test parts were selected by the client.

Test sample**Material Photo**

1



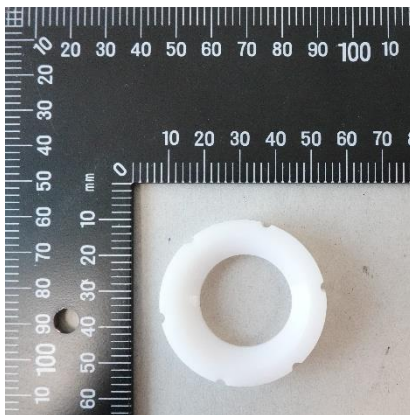
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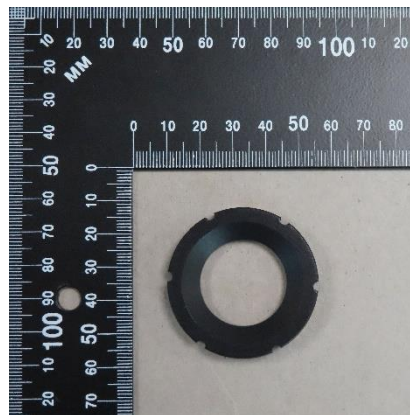
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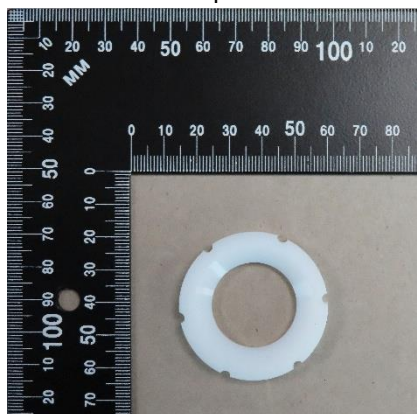
4



5



8



9

Test Results

1. Sensorial examination

Test method: It is examined to the extent of food simulant being used, which comes into contact with the product, undergoes detectable changes in taste and smell.

For this purpose, the food simulant was stored in the product under the below mentioned time and temperature. Afterwards, the food simulant was examined by an appropriate number of tasters with regard to any divergence in smell and taste. Another test sample, which was used as a reference, was treated by the same way except that it had no contact with the product to be tested.

Before testing, the product had been cleaned according to the product's instruction manual or in the absence of such manual, by normal household cleaning.

The test is carried out on the basis of ISO 13302 by paired comparison test:

Evaluation scheme:

- 0 = No discernible deviation
- 1 = Barely discernible deviation
- 2 = Weak deviation
- 3 = Clear deviation
- 4 = Strong deviation
- Limit: 3 (failed)

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Water	10 day(s) / 40 °C

Material No.	Mat.1	Mat.2	Mat.3
Parameter:	Result	Result	Result
Transfer of Smell:	0	0	0
Transfer of Taste:	1	1	0

Material No.	Mat.4	Mat.5	Mat.8
Parameter:	Result	Result	Result
Transfer of Smell:	0	0	0
Transfer of Taste:	0	0	0

Material No.	Mat.9
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

The examined item does meet the requirement.

2. Specific Release of Metals

Test method: The sample preparation is performed with reference to "Technical Guide on Metals and alloys used in food contact materials and articles" - 2nd Edition. Presence of elements were detected by means of ICP-MS.

Limit: Technical Guide on Metals and alloys used in food contact materials and articles – 2nd Edition

The following food simulant and condition was applied:

Food simulant	Test duration / Temperature
Citric Acid 0.5 %	0.5 hour(s) / 40 °C

Material no.			Mat.1			
			Sum 1 st + 2 nd test		3 rd test	
Parameter	Unit	RL	Result	Limits ^{(*)2}	Result	Limits ^{(*)1}
Silver (Ag)	mg/kg	0.05	<RL	0.56	<RL	0.08
Aluminum (Al)	mg/kg	0.1	<RL	35	<RL	5
Cobalt (Co)	mg/kg	0.01	0.02	0.14	<RL	0.02
Chromium (III) (Cr)	mg/kg	0.01	1.00	7	0.12	1
Copper (Cu)	mg/kg	0.5	<RL	28	<RL	4
Iron (Fe)	mg/kg	5	6	280	<RL	40
Manganese (Mn)	mg/kg	0.1	0.2	3.85	<RL	0.55
Molybdenum (Mo)	mg/kg	0.02	0.17	0.84	<RL	0.12
Nickel (Ni)	mg/kg	0.01	0.34	0.98	0.04	0.14
Tin (Sn)	mg/kg	10	<RL	700	<RL	100
Vanadium (V)	mg/kg	0.01	<RL	0.07	<RL	0.01
Zinc (Zn)	mg/kg	1	<RL	35	<RL	5
Zirconium (Zr)	mg/kg	0.1	<RL	14	<RL	2
Arsenic (As)	mg/kg	0.002	<RL	0.014	<RL	0.002
Barium (Ba)	mg/kg	0.1	<RL	8.4	<RL	1.2
Beryllium (Be)	mg/kg	0.01	<RL	0.07	<RL	0.01
Cadmium (Cd)	mg/kg	0.002	<RL	0.035	<RL	0.005
Mercury (Hg)	mg/kg	0.003	<RL	0.021	<RL	0.003
Lithium (Li)	mg/kg	0.02	<RL	0.336	<RL	0.048
Lead (Pb)	mg/kg	0.01	0.0115	0.07	<RL	0.01
Antimony (Sb)	mg/kg	0.01	<RL	0.28	<RL	0.04
Thallium (Tl)	mg/kg	0.0005	<RL	0.007	<RL	0.001
Magnesium (Mg)	mg/kg	0.1	<RL	-	<RL	-
Titanium (Ti)	mg/kg	0.1	<RL	-	<RL	-

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Material no.			Mat.2			
			Sum 1 st + 2 nd test		3 rd test	
Parameter	Unit	RL	Result	Limits (*2)	Result	Limits (*1)
Silver (Ag)	mg/kg	0.05	<RL	0.56	<RL	0.08
Aluminum (Al)	mg/kg	0.1	<RL	35	<RL	5
Cobalt (Co)	mg/kg	0.01	<RL	0.14	<RL	0.02
Chromium (III) (Cr)	mg/kg	0.01	0.15	7	0.02	1
Copper (Cu)	mg/kg	0.5	<RL	28	<RL	4
Iron (Fe)	mg/kg	5	<RL	280	<RL	40
Manganese (Mn)	mg/kg	0.1	<RL	3.85	<RL	0.55
Molybdenum (Mo)	mg/kg	0.02	<RL	0.84	<RL	0.12
Nickel (Ni)	mg/kg	0.01	0.06	0.98	<RL	0.14
Tin (Sn)	mg/kg	10	<RL	700	<RL	100
Vanadium (V)	mg/kg	0.01	<RL	0.07	<RL	0.01
Zinc (Zn)	mg/kg	1	<RL	35	<RL	5
Zirconium (Zr)	mg/kg	0.1	<RL	14	<RL	2
Arsenic (As)	mg/kg	0.002	<RL	0.014	<RL	0.002
Barium (Ba)	mg/kg	0.1	<RL	8.4	<RL	1.2
Beryllium (Be)	mg/kg	0.01	<RL	0.07	<RL	0.01
Cadmium (Cd)	mg/kg	0.002	<RL	0.035	<RL	0.005
Mercury (Hg)	mg/kg	0.003	<RL	0.021	<RL	0.003
Lithium (Li)	mg/kg	0.02	<RL	0.336	<RL	0.048
Lead (Pb)	mg/kg	0.01	<RL	0.07	<RL	0.01
Antimony (Sb)	mg/kg	0.01	<RL	0.28	<RL	0.04
Thallium (Tl)	mg/kg	0.0005	<RL	0.007	<RL	0.001
Magnesium (Mg)	mg/kg	0.1	<RL	-	<RL	-
Titanium (Ti)	mg/kg	0.1	<RL	-	<RL	-

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Material no.			Mat.3			
			Sum 1 st + 2 nd test		3 rd test	
Parameter	Unit	RL	Result	Limits (*2)	Result	Limits (*1)
Silver (Ag)	mg/kg	0.05	<RL	0.56	<RL	0.08
Aluminum (Al)	mg/kg	0.1	<RL	35	<RL	5
Cobalt (Co)	mg/kg	0.01	<RL	0.14	<RL	0.02
Chromium (III) (Cr)	mg/kg	0.01	0.14	7	0.02	1
Copper (Cu)	mg/kg	0.5	<RL	28	<RL	4
Iron (Fe)	mg/kg	5	<RL	280	<RL	40
Manganese (Mn)	mg/kg	0.1	0.1	3.85	<RL	0.55
Molybdenum (Mo)	mg/kg	0.02	<RL	0.84	<RL	0.12
Nickel (Ni)	mg/kg	0.01	0.08	0.98	<RL	0.14
Tin (Sn)	mg/kg	10	<RL	700	<RL	100
Vanadium (V)	mg/kg	0.01	<RL	0.07	<RL	0.01
Zinc (Zn)	mg/kg	1	<RL	35	<RL	5
Zirconium (Zr)	mg/kg	0.1	<RL	14	<RL	2
Arsenic (As)	mg/kg	0.002	<RL	0.014	<RL	0.002
Barium (Ba)	mg/kg	0.1	<RL	8.4	<RL	1.2
Beryllium (Be)	mg/kg	0.01	<RL	0.07	<RL	0.01
Cadmium (Cd)	mg/kg	0.002	<RL	0.035	<RL	0.005
Mercury (Hg)	mg/kg	0.003	<RL	0.021	<RL	0.003
Lithium (Li)	mg/kg	0.02	<RL	0.336	<RL	0.048
Lead (Pb)	mg/kg	0.01	<RL	0.07	<RL	0.01
Antimony (Sb)	mg/kg	0.01	<RL	0.28	<RL	0.04
Thallium (Tl)	mg/kg	0.0005	<RL	0.007	<RL	0.001
Magnesium (Mg)	mg/kg	0.1	<RL	-	<RL	-
Titanium (Ti)	mg/kg	0.1	<RL	-	<RL	-

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Material no.			Mat.4			
			Sum 1 st + 2 nd test		3 rd test	
Parameter	Unit	RL	Result	Limits (*2)	Result	Limits (*1)
Silver (Ag)	mg/kg	0.05	<RL	0.56	<RL	0.08
Aluminum (Al)	mg/kg	0.1	<RL	35	<RL	5
Cobalt (Co)	mg/kg	0.01	<RL	0.14	<RL	0.02
Chromium (III) (Cr)	mg/kg	0.01	0.01	7	<RL	1
Copper (Cu)	mg/kg	0.5	<RL	28	<RL	4
Iron (Fe)	mg/kg	5	<RL	280	<RL	40
Manganese (Mn)	mg/kg	0.1	0.1	3.85	<RL	0.55
Molybdenum (Mo)	mg/kg	0.02	<RL	0.84	<RL	0.12
Nickel (Ni)	mg/kg	0.01	0.02	0.98	<RL	0.14
Tin (Sn)	mg/kg	10	<RL	700	<RL	100
Vanadium (V)	mg/kg	0.01	<RL	0.07	<RL	0.01
Zinc (Zn)	mg/kg	1	<RL	35	<RL	5
Zirconium (Zr)	mg/kg	0.1	<RL	14	<RL	2
Arsenic (As)	mg/kg	0.002	<RL	0.014	<RL	0.002
Barium (Ba)	mg/kg	0.1	<RL	8.4	<RL	1.2
Beryllium (Be)	mg/kg	0.01	<RL	0.07	<RL	0.01
Cadmium (Cd)	mg/kg	0.002	<RL	0.035	<RL	0.005
Mercury (Hg)	mg/kg	0.003	<RL	0.021	<RL	0.003
Lithium (Li)	mg/kg	0.02	<RL	0.336	<RL	0.048
Lead (Pb)	mg/kg	0.01	<RL	0.07	<RL	0.01
Antimony (Sb)	mg/kg	0.01	<RL	0.28	<RL	0.04
Thallium (Tl)	mg/kg	0.0005	<RL	0.007	<RL	0.001
Magnesium (Mg)	mg/kg	0.1	<RL	-	<RL	-
Titanium (Ti)	mg/kg	0.1	<RL	-	<RL	-

Abbreviations: RL = Reporting Limit
 mg/kg = Milligram per kilogram
 < = Less than

Remark:

- *1 Compliance is established on the findings on the third test for products intended for repeated use.
- *2 In addition, the sum of each metal in the first and second test should not exceed the sevenfold limit.
- *3 The examined item does meet the requirement.

3. Global Migration

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	10 day(s) / 40 °C
Ethanol 95 %	10 day(s) / 40 °C
Isooctane	2 day(s) / 20 °C

Material no.	Mat.5					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Acetic acid 3 %	mg/dm ²	2	<RL	<RL	<RL	10
Ethanol 95 %	mg/dm ²	2	<RL	<RL	<RL	10
Isooctane	mg/dm ²	2	2	<RL	<RL	10

Material no.	Mat.8					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Acetic acid 3 %	mg/dm ²	2	<RL	<RL	<RL	10
Ethanol 95 %	mg/dm ²	2	<RL	<RL	<RL	10
Isooctane	mg/dm ²	2	<RL	<RL	<RL	10

Material no.	Mat.9					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Acetic acid 3 %	mg/dm ²	2	<RL	<RL	<RL	10
Ethanol 95 %	mg/dm ²	2	3	<RL	<RL	10
Isooctane	mg/dm ²	2	<RL	<RL	<RL	10

Abbreviations: < = Less than
 RL = Reporting Limit
 mg/dm² = Milligram per square decimetre

The examined item does meet the requirement.

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4. Specific Migration of metals

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments. Determination by ICP-MS and colorimetric method

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	10 day(s) / 40 °C

Material no.	Mat.5					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Aluminium	mg/kg	0.1	n.d.	n.d.	n.d.	1
Antimony	mg/kg	0.01	n.d.	n.d.	n.d.	0.04
Arsenic	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Barium	mg/kg	0.1	n.d.	n.d.	n.d.	1
Cadmium	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Total Chromium	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Cobalt	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
Copper	mg/kg	0.5	n.d.	n.d.	n.d.	5
Iron	mg/kg	5	n.d.	n.d.	n.d.	48
Lead	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Lithium	mg/kg	0.1	n.d.	n.d.	n.d.	0.6
Manganese	mg/kg	0.1	n.d.	n.d.	n.d.	0.6
Mercury	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Nickel	mg/kg	0.01	n.d.	n.d.	n.d.	0.02
Zinc	mg/kg	1	n.d.	n.d.	n.d.	5
Europium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Gadolinium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Lanthanum	mg/kg	0.01	n.d.	n.d.	n.d.	-
Terbium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of Lanthanide substances	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
Ammonium	mg/kg	10	n.d.	n.d.	n.d.	-
Calcium	mg/kg	10	n.d.	n.d.	n.d.	-
Magnesium	mg/kg	10	n.d.	n.d.	n.d.	-
Potassium	mg/kg	10	n.d.	n.d.	n.d.	-
Sodium	mg/kg	10	n.d.	n.d.	n.d.	-

Material no.	Mat.8					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Aluminium	mg/kg	0.1	n.d.	n.d.	n.d.	1
Antimony	mg/kg	0.01	n.d.	n.d.	n.d.	0.04
Arsenic	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Barium	mg/kg	0.1	n.d.	n.d.	n.d.	1
Cadmium	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Total Chromium	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Cobalt	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
Copper	mg/kg	0.5	n.d.	n.d.	n.d.	5
Iron	mg/kg	5	n.d.	n.d.	n.d.	48
Lead	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Lithium	mg/kg	0.1	n.d.	n.d.	n.d.	0.6
Manganese	mg/kg	0.1	n.d.	n.d.	n.d.	0.6
Mercury	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Nickel	mg/kg	0.01	n.d.	n.d.	n.d.	0.02
Zinc	mg/kg	1	n.d.	n.d.	n.d.	5
Europium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Gadolinium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Lanthanum	mg/kg	0.01	n.d.	n.d.	n.d.	-
Terbium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of Lanthanide substances	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
Ammonium	mg/kg	10	n.d.	n.d.	n.d.	-
Calcium	mg/kg	10	n.d.	n.d.	n.d.	-
Magnesium	mg/kg	10	n.d.	n.d.	n.d.	-
Potassium	mg/kg	10	n.d.	n.d.	n.d.	-
Sodium	mg/kg	10	n.d.	n.d.	n.d.	-

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Material no.	Mat.9					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Aluminium	mg/kg	0.1	n.d.	n.d.	n.d.	1
Antimony	mg/kg	0.01	n.d.	n.d.	n.d.	0.04
Arsenic	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Barium	mg/kg	0.1	n.d.	n.d.	n.d.	1
Cadmium	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Total Chromium	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Cobalt	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
Copper	mg/kg	0.5	n.d.	n.d.	n.d.	5
Iron	mg/kg	5	n.d.	n.d.	n.d.	48
Lead	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Lithium	mg/kg	0.1	n.d.	n.d.	n.d.	0.6
Manganese	mg/kg	0.1	n.d.	n.d.	n.d.	0.6
Mercury	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.
Nickel	mg/kg	0.01	n.d.	n.d.	n.d.	0.02
Zinc	mg/kg	1	n.d.	n.d.	n.d.	5
Europium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Gadolinium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Lanthanum	mg/kg	0.01	n.d.	n.d.	n.d.	-
Terbium	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of Lanthanide substances	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
Ammonium	mg/kg	10	n.d.	n.d.	n.d.	-
Calcium	mg/kg	10	n.d.	n.d.	n.d.	-
Magnesium	mg/kg	10	n.d.	n.d.	n.d.	-
Potassium	mg/kg	10	n.d.	n.d.	n.d.	-
Sodium	mg/kg	10	n.d.	n.d.	n.d.	-

Abbreviations: RL = Reporting limit
 mg/kg = Milligram per kilogram
 n.d. = Not detected (< Reporting limit)

Remark:

- *1 Single component with an amount below reporting limit was not considered by the calculation of the sum. In the case of all lanthanide substances europium, gadolinium, lanthanum and terbium were not detected, the result is stated n.d.
- *2 The migration is subject to Article 11(3) and Article 12
- *3 The examined item does meet the requirement.

5. Specific Migration of Primary Aromatic Amines from Plastic

Test method: The migratory behaviour is examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments. Determination by LC-MS/MS.

Limit: Commission Regulation (EU) No 10/2011 and its amendments

The following food simulant and condition was applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	10 day(s) / 40 °C

Material no.		Mat.5					
Parameter	CAS no.	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
2,4-Diaminoanisole	615-05-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2,4-toluenediamine	95-80-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-oxydianiline	101-80-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Benzidine	92-87-5	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-methylenedianiline	101-77-9	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-anisidine	90-04-0	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-Toluidine	95-53-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-bi-o-toluidine	119-93-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
3,3'-Dimethoxybenzidine	119-90-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-chloroaniline	106-47-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
p-cresidine	120-71-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-chloro-o-toluidine	95-69-2	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-aminobiphenyl	92-67-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-Methylene-di-o-toluidine	838-88-0	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-thiodianiline	139-65-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2-Naphthylamine	91-59-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
3,3'-Dichlorobenzidine	91-94-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-aminoazobenzene	60-09-3	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-aminoazotoluene	97-56-3	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2,4,5-Trimethylaniline	137-17-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2-Methyl-5-nitroaniline	99-55-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
m-phenylenediamine	108-45-2	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Benzoguanamine	91-76-9	mg/kg	0.01	n.d.	n.d.	n.d.	5
4,4'-Methylenebis-(3-chloro-2,6-diethylaniline)	106246-33-7	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
PAAs not listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006 and its amendments							
p-toluidine	106-49-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
p-phenylenediamine	106-50-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Methyl-4-nitroaniline	99-52-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
o-phenylenediamine	95-54-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
1,5-naphthylenediamine	2243-62-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
Aniline	62-53-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4-Dimethylaniline	95-68-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,6-Dimethylaniline	87-62-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Chloro-2-methylaniline	95-79-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,6-toluenediamine	823-40-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Amino-6-methyl-1,3-dihydro-2H-benzimidazol-2-one	67014-36-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-aminobenzamide	2835-68-9	mg/kg	0.01	n.d.	n.d.	n.d.	-

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3-Amino-4-methylbenzamide	19406-86-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
m-Anisidine	536-90-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
m-toluidine	108-44-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Ethoxyaniline	156-43-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-ethoxyaniline	94-70-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Chloro-3-methoxyaniline	13726-14-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
1,3-Diiminoisoindoline	3468-11-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Amino-4-methoxybenzanilide	120-35-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4,5-Trichloroaniline	636-30-6	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-chloro-2,5-dimethoxyaniline	6358-64-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Methoxy-4-nitroaniline	97-52-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Chloro-2-methoxyaniline	95-03-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Chloroaniline	108-42-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Chloroaniline	95-51-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dimethyl-2-aminoterephthalate	5372-81-6	mg/kg	0.01	n.d.	n.d.	n.d.	-
Biphenyl-2-ylamine	90-41-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,5-Dichloroaniline	95-82-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Nitroaniline	88-74-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Aminotoluene-3-sulfonic acid	88-44-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Aminonaphthalene-1-sulfonic acid	81-16-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4-Dinitroaniline	97-02-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Chloro-4-nitroaniline	121-87-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of Primary Aromatic Amines*1	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.

Material no.		Mat.8					
Parameter	CAS no.	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
2,4-Diaminoanisole	615-05-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2,4-toluenediamine	95-80-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-oxydianiline	101-80-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Benzidine	92-87-5	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-methylenedianiline	101-77-9	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-anisidine	90-04-0	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-Toluidine	95-53-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-bi-o-toluidine	119-93-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
3,3'-Dimethoxybenzidine	119-90-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-chloroaniline	106-47-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
p-cresidine	120-71-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-chloro-o-toluidine	95-69-2	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-aminobiphenyl	92-67-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-Methylene-di-o-toluidine	838-88-0	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-thiodianiline	139-65-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2-Naphthylamine	91-59-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
3,3'-Dichlorobenzidine	91-94-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-aminoazobenzene	60-09-3	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-aminoazotoluene	97-56-3	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2,4,5-Trimethylaniline	137-17-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2-Methyl-5-nitroaniline	99-55-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
m-phenylenediamine	108-45-2	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.

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Benzoguanamine	91-76-9	mg/kg	0.01	n.d.	n.d.	n.d.	5
4,4'-Methylenebis-(3-cholor-2,6-diethylaniline)	106246-33-7	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
PAAs not listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006 and its amendments							
p-toluidine	106-49-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
p-phenylenediamine	106-50-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Methyl-4-nitroaniline	99-52-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
o-phenylenediamine	95-54-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
1,5-naphthylenediamine	2243-62-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
Aniline	62-53-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4-Dimethylaniline	95-68-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,6-Dimethylaniline	87-62-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Chloro-2-methylaniline	95-79-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,6-toluenediamine	823-40-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Amino-6-methyl-1,3-dihydro-2H-benzimidazol-2-one	67014-36-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-aminobenzamide	2835-68-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Amino-4-methylbenzamide	19406-86-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
m-Anisidine	536-90-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
m-toluidine	108-44-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Ethoxyaniline	156-43-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-ethoxyaniline	94-70-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Chloro-3-methoxyaniline	13726-14-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
1,3-Diiminoisoindoline	3468-11-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Amino-4-methoxybenzanilide	120-35-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4,5-Trichloroaniline	636-30-6	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-chloro-2,5-dimethoxyaniline	6358-64-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Methoxy-4-nitroaniline	97-52-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Chloro-2-methoxyaniline	95-03-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Chloroaniline	108-42-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Chloroaniline	95-51-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dimethyl-2-aminoterephthalate	5372-81-6	mg/kg	0.01	n.d.	n.d.	n.d.	-
Biphenyl-2-ylamine	90-41-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,5-Dichloroaniline	95-82-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Nitroaniline	88-74-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Aminotoluene-3-sulfonic acid	88-44-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Aminonaphthalene-1-sulfonic acid	81-16-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4-Dinitroaniline	97-02-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Chloro-4-nitroaniline	121-87-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of Primary Aromatic Amines*1	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.

Material no.		Mat.9					
Parameter	CAS no.	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
2,4-Diaminoanisole	615-05-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2,4-toluenediamine	95-80-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-oxydianiline	101-80-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Benzidine	92-87-5	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-methylenedianiline	101-77-9	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-anisidine	90-04-0	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-Toluidine	95-53-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.

4,4'-bi-o-toluidine	119-93-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
3,3'-Dimethoxybenzidine	119-90-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-chloroaniline	106-47-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
p-cresidine	120-71-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-chloro-o-toluidine	95-69-2	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-aminobiphenyl	92-67-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-Methylene-di-o-toluidine	838-88-0	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-thiodianiline	139-65-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2-Naphthylamine	91-59-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
3,3'-Dichlorobenzidine	91-94-1	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
4-aminoazobenzene	60-09-3	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
o-aminoazotoluene	97-56-3	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2,4,5-Trimethylaniline	137-17-7	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
2-Methyl-5-nitroaniline	99-55-8	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
m-phenylenediamine	108-45-2	mg/kg	0.002	n.d.	n.d.	n.d.	n.d.
Benzoguanamine	91-76-9	mg/kg	0.01	n.d.	n.d.	n.d.	5
4,4'-Methylenebis-(3-chloro-2,6-diethylaniline)	106246-33-7	mg/kg	0.01	n.d.	n.d.	n.d.	0.05
PAAs not listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006 and its amendments							
p-toluidine	106-49-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
p-phenylenediamine	106-50-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Methyl-4-nitroaniline	99-52-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
o-phenylenediamine	95-54-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
1,5-naphthylenediamine	2243-62-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
Aniline	62-53-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4-Dimethylaniline	95-68-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,6-Dimethylaniline	87-62-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Chloro-2-methylaniline	95-79-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,6-toluenediamine	823-40-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Amino-6-methyl-1,3-dihydro-2H-benzimidazol-2-one	67014-36-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-aminobenzamide	2835-68-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Amino-4-methylbenzamide	19406-86-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
m-Anisidine	536-90-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
m-toluidine	108-44-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Ethoxyaniline	156-43-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-ethoxyaniline	94-70-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Chloro-3-methoxyaniline	13726-14-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
1,3-Diiminoisindoline	3468-11-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Amino-4-methoxybenzanilide	120-35-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4,5-Trichloroaniline	636-30-6	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-chloro-2,5-dimethoxyaniline	6358-64-1	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Methoxy-4-nitroaniline	97-52-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
5-Chloro-2-methoxyaniline	95-03-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
3-Chloroaniline	108-42-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Chloroaniline	95-51-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dimethyl-2-aminoterephthalate	5372-81-6	mg/kg	0.01	n.d.	n.d.	n.d.	-
Biphenyl-2-ylamine	90-41-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,5-Dichloroaniline	95-82-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Nitroaniline	88-74-4	mg/kg	0.01	n.d.	n.d.	n.d.	-
4-Aminotoluene-3-sulfonic acid	88-44-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
2-Aminonaphthalene-1-sulfonic acid	81-16-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
2,4-Dinitroaniline	97-02-9	mg/kg	0.01	n.d.	n.d.	n.d.	-

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2-Chloro-4-nitroaniline	121-87-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of Primary Aromatic Amines*1	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.

Abbreviations: RL = Reporting Limit
 mg/kg = Milligram per kilogram
 n.d. = Not detected

Remark: *1 Sum of Primary Aromatic Amines does not include the value of Benzoguanamine and 4,4'-Methylenebis-(3-chloro-2,6-diethylaniline) as the SML of both substances should refer to EU 10/2011 Union list.
 Single components with an amount of less than reporting limit were not considered by the calculation of the sum. In the case of all of Primary Aromatic Amines were not detected, the result is stated n.d.

*2 The examined item does meet the requirement.

6. Tetrafluoroethylene

Test Method: Determination by HS-GC-MS.

Material no.	Mat.5			
Parameter	CAS No.	Unit	RL	Result
Tetrafluoroethylene	116-14-3	mg/kg	0.01	<RL (*1)

Material no.	Mat.8			
Parameter	CAS No.	Unit	RL	Result
Tetrafluoroethylene	116-14-3	mg/kg	0.01	<RL (*1)

Material no.	Mat.9			
Parameter	CAS No.	Unit	RL	Result
Tetrafluoroethylene	116-14-3	mg/kg	0.01	<RL (*1)

Abbreviations: mg/kg = Milligram per kilogram in material
 RL = Reporting Limit
 < = Less than

Remark:

*1. Assuming complete migration by using the conventional surface-to-volume ratio of 6 dm² / 1 kg food, the calculated migration value is <0.05 mg/kg food. According to Commission Regulation (EU) No 10/2011 and its amendments, the specific migration limit of Tetrafluoroethylene is 0.05 mg/kg. Therefore the examined item does meet the requirement.

--- End of Test-Report ---