

Plast 1 A/S  
Jan Kaya-Mortensen  
Usserød Kongevej 132

DK- 2970 Hørsholm

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Date September 30, 2020  
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**Order No.:** 55267641  
**Test Report No.:** PB2003955  
**Version 3 replaces Version 2**

**Client:** Plast 1 A/S  
Jan Kaya-Mortensen  
Usserød Kongevej 132  
DK- 2970 Hørsholm

**Date of order:** 07.05.2020 / 14.09.2020  
**Sample received:** 07.05.2020 / 11.09.2020  
**Testing Period:** 07.05.2020 – 18.06.2020 // 14.09.2020 – 30.09.2020

**Test item:** Dishes series (3 colours, green, grey and white)

**Scope of investigation:** Testing of food contact materials

**Result:** PASS

**Test Result:** - following page / pages-

Accredited Analytical Laboratory D-PL-11060-03-00 in Stuttgart and Halle (Saale)

<b>Sample No.:</b>	55267641
<b>Sample designation:</b>	Dishes series (3 colours, green, grey and white)
<b>Sample description:</b>	Food contact articles

The samples are, in accordance to article 1 subsection 2 of the regulation (EC) 1935/2004, commodities because it is intended and foreseen to come into contact with foodstuff.

**Product photos:**



*55267641 001 - Dishes series green*



*55267641 002 - Dishes series grey*



*55267641 003 - Dishes series white*



*55268888 001 – cup, green*

**Test results****I) Plate, cup green****1) Specific migration of metals:**

<b>Sample No.:</b>	55267641 001			
<b>Sample designation:</b>	Cup green			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
Barium (Ba)	mg/ L	< LQ	0,01	1
Lithium (Li)	mg/ L	< LQ	0,01	0,6
Manganese (Mn)	mg/ L	< LQ	0,002	0,6
Iron (Fe)	mg/ L	< LQ	0,02	48
Copper (Cu)	mg/ L	< LQ	0,01	5
Cobalt (Co)	mg/ L	< LQ	0,01	0,05
Zinc (Zn)	mg/ L	0,02	0,01	5
Aluminium (Al)	mg/ L	0,02	0,01	1
Nickel (Ni)	mg/ L	< LQ	0,02	0,02
Antimony (Sb)	mg/ L	< LQ	0,004	0,04

<sup>1</sup> Test conditions: 3% acetic acid, 2 h, 70 °C, first migration

The tested sample meets the limit values for the migration of metals according to annex II of the Regulation (EU) 10/2011 on plastic materials and articles intended to come into contact with food.

**2) Sensorical examination:**

<b>Sample No.:</b>	55267641 001	
<b>Sample designation:</b>	Cup green	
<b>Parameter</b>	<b>Result</b>	<b>Limit</b>
Sensorical test <sup>1,2</sup> - smell	0	<3
Sensorical test <sup>1,2</sup> - taste	2,5	

<sup>1</sup> Scale of intensity:

- 0 - no noticeable change of smell and taste
- 1 - marginal change of smell and taste
- 2 - slight change of smell and taste
- 3 - clear change of smell and taste
- 4 - strong change of smell and taste

<sup>2</sup> Test conditions: water, 2 h, 70 °C

According to article 3 subsection 1 c of the regulation (EC) 1935/2004 materials and articles shall be manufactured in compliance with good manufacturing practise so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could bring about a deterioration in the organoleptic characteristics thereof.

The tested sample meets this requirement.

### 3) NIAS-Screening:

<b>Sample No.:</b>	55267641 001			
<b>Sample designation:</b>	Cup green			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
<b>NIAS-Screening (non intentional added substances)</b>				
tris(2,4-di-tert-butylphenyl) phosphate (CAS 95906-11-9) (oxidation product of Irgafos 168)	mg/ dm <sup>2</sup>	0,10	0,0040	60
	mg/ kg	0,60	0,024	
Erucic Acid amide (CAS 112-84-5)	mg/ dm <sup>2</sup>	0,25	0,0040	Sum 60 mg/ kg
	mg/ kg	1,5	0,024	
Fatty acid	mg/ dm <sup>2</sup>	0,04	0,0040	
	mg/ kg	0,24	0,024	
Irgafos 168 (CAS 31570-04-4)	mg/ dm <sup>2</sup>	0,25	0,0040	-
	mg/ kg	1,5	0,024	60
Saturated hydrocarbons (sum)	mg/ dm <sup>2</sup>	2,5	0,0040	-
	mg/ kg	15	0,024	-

Test conditions: 95% ethanol, 2 h, 70 °C, first migration

### 4) Primary aromatic amines:

<b>Sample No.:</b>	55267641 001			
<b>Sample designation:</b>	Cup green			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
<b>Primary aromatic amines <sup>1</sup></b>	mg/ kg	< LQ	0,0025	0,01

<sup>1</sup> Test conditions: 3 % acetic acid, 2 h, 70 °C, first migration

According Regulation (EU) 10/2011 on plastic materials and articles intended to come into contact with food, article 10 combined with annex II plastic materials and articles shall not release primary aromatic amines in a detectable quantity into food or food simulant (detection limit is 0,01 mg per kg of food or food simulant).

The tested sample meets this requirement.

**II) Plate, cup grey**
**1) Specific migration of metals:**

<b>Sample No.:</b>	55267641 002			
<b>Sample designation:</b>	Cup grey			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
Barium (Ba)	mg/ L	< LQ	0,01	1
Lithium (Li)	mg/ L	< LQ	0,01	0,6
Manganese (Mn)	mg/ L	< LQ	0,002	0,6
Iron (Fe)	mg/ L	< LQ	0,02	48
Copper (Cu)	mg/ L	< LQ	0,01	5
Cobalt (Co)	mg/ L	< LQ	0,01	0,05
Zinc (Zn)	mg/ L	0,09	0,01	5
Aluminium (Al)	mg/ L	0,03	0,01	1
Nickel (Ni)	mg/ L	< LQ	0,02	0,02
Antimony (Sb)	mg/ L	< LQ	0,004	0,04

<sup>1</sup> Test conditions: 3% acetic acid, 2 h, 70 °C, first migration

The tested sample meets the limit values for the migration of metals according to annex II of the Regulation (EU) 10/2011 on plastic materials and articles intended to come into contact with food.

## 2) Primary aromatic amines:

<b>Sample No.:</b>	55267641 002			
<b>Sample designation:</b>	Cup grey			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
<b>Primary aromatic amines <sup>1</sup></b>	mg/ kg	< LQ	0,0025	0,01

<sup>1</sup> Test conditions: 3 % acetic acid, 2 h, 70 °C, first migration

According Regulation (EU) 10/2011 on plastic materials and articles intended to come into contact with food, article 10 combined with annex II plastic materials and articles shall not release primary aromatic amines in a detectable quantity into food or food simulant (detection limit is 0,01 mg per kg of food or food simulant).

The tested sample meets this requirement.

## 3) Overall migration

<b>Sample No.:</b>	55267641 002			
<b>Sample designation:</b>	Plate and cup grey			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
Overall migration Extract: 3 % acetic acid <sup>1</sup>	mg/ dm <sup>2</sup>	3,7	0,5	10
Overall migration Extract: 10 % ethanol <sup>1</sup>	mg/ dm <sup>2</sup>	2,5	0,5	10
Overall migration Extract: oil <sup>2</sup>	mg/ dm <sup>2</sup>	< LQ	5	10

<sup>1</sup> Test conditions: 2 h, 70 °C, first migration, surface area: 147 cm<sup>2</sup>; volume: 200 mL; performed on cup

<sup>2</sup> Test conditions: 2 h, 70 °C, first migration, surface-volume-ratio: 6:1, performed on plate

According to article 12 (1) of the Regulation (EU) 10/2011 plastic materials and articles shall not transfer their constituents to food simulants in quantities exceeding 10 milligrams per dm<sup>2</sup>.

The tested samples meet this requirement.

**4) Specific migration of substances:**

<b>Sample No.:</b>	55267641 002			
<b>Sample designation:</b>	Cup grey			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
Vinylacetat (CAS 108-05-4)	mg/ kg	< LQ	1	12
2,6-Di-tert-butyl-p-kresol (BHT) (CAS 128-37-0)	mg/ kg	< LQ	1	3
1,3,5-tris(3,5-di-tert-butyl-4- hydroxybenzyl)- 1,3,5-triazine- 2,4,6(1H,3H,5H)-trione (CAS: 27676-62-6)	mg/kg	< LQ	1	5
N,N-bis(2-hydroxyethyl)alkyl (C8-C18) amine (Ref 39090)	mg/kg	< LQ	0,1	1,2
N,N-bis(2-hydroxyethyl)alkyl(C8-C18) amine hydrochlorides ((Ref 39120)				
9,9-bis(methoxymethyl)fluorene (CAS 182121-12-6)	mg/kg	< LQ	0,01	0,05
1,1,1-Trimethylolpropane (CAS 77-99-6)	mg/kg	< LQ	0,1	6
2,5-Bis(5-tert-butyl-2-benzoxazolyl)thiophen (CAS 7128-64-5)	mg/kg	< LQ	0,06	0,6
3,5-di-tert-butyl-4-hydroxybenzylphosphonic acid, mo-noethyl ester, calcium salt (CAS no 65140-91-2)	mg/ L	< LQ	0,6	6
n-Octylphosphonic acid (CAS no 4724-48-5)	mg/ L	< LQ	0,01	0,05
Bis(4-propylbenzylidene)propylsorbitol (CAS 882073-43-0)	mg/ L	< LQ	0,5	5

<sup>1</sup> Test conditions: 3% acetic acid, 2 h, 70 °C, first migration

According to article 11 of the Regulation (EU) 10/ 2011 plastic materials and articles shall not transfer their constituents to foods in quantities exceeding the specific migration limits (SML) set out in Annex I.

The sample meets the limit values for the tested substances.



**5) Sensorical examination:**

<b>Sample No.:</b>	55267641 002	
<b>Sample designation:</b>	Cup grey	
<b>Parameter</b>	<b>Result</b>	<b>Limit</b>
Sensorical test <sup>1,2</sup> - smell	0	<3
Sensorical test <sup>1,2</sup> - taste	2,5	

<sup>1</sup> Scale of intensity:

- 0 - no noticeable change of smell and taste
- 1 - marginal change of smell and taste
- 2 - slight change of smell and taste
- 3 - clear change of smell and taste
- 4 - strong change of smell and taste

<sup>2</sup> Test conditions: water, 2 h, 70 °C

According to article 3 subsection 1 c of the regulation (EC) 1935/2004 materials and articles shall be manufactured in compliance with good manufacturing practise so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could bring about a deterioration in the organoleptic characteristics thereof.

The tested sample meets this requirement.

**III) Plate, cup white****1) Specific migration of metals:**

<b>Sample No.:</b>	55267641 003			
<b>Sample designation:</b>	Cup white			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
Barium (Ba)	mg/ L	< LQ	0,01	1
Lithium (Li)	mg/ L	< LQ	0,01	0,6
Manganese (Mn)	mg/ L	< LQ	0,002	0,6
Iron (Fe)	mg/ L	< LQ	0,02	48
Copper (Cu)	mg/ L	< LQ	0,01	5
Cobalt (Co)	mg/ L	< LQ	0,01	0,05
Zinc (Zn)	mg/ L	0,02	0,01	5
Aluminium (Al)	mg/ L	0,03	0,01	1
Nickel (Ni)	mg/ L	< LQ	0,02	0,02
Antimony (Sb)	mg/ L	< LQ	0,004	0,04

<sup>1</sup> Test conditions: 3% acetic acid, 2 h, 70 °C, first migration

The tested sample meets the limit values for the migration of metals according to annex II of the Regulation (EU) 10/2011 on plastic materials and articles intended to come into contact with food.

## 2) Primary aromatic amines:

<b>Sample No.:</b>	55267641 003			
<b>Sample designation:</b>	Cup white			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
<b>Primary aromatic amines <sup>1</sup></b>	mg/ kg	< LQ	0,0025	0,01

<sup>1</sup> Test conditions: 3 % acetic acid, 2 h, 70 °C, first migration

According Regulation (EU) 10/2011 on plastic materials and articles intended to come into contact with food, article 10 combined with annex II plastic materials and articles shall not release primary aromatic amines in a detectable quantity into food or food simulant (detection limit is 0,01 mg per kg of food or food simulant).

The tested sample meets this requirement.

## 3) Sensorical examination:

<b>Sample No.:</b>	55267641 003		
<b>Sample designation:</b>	Cup and spoon white		
<b>Parameter</b>	<b>Result</b>	<b>Limit</b>	
Sensorical test <sup>1,2</sup> - smell	0	<3	
Sensorical test <sup>1,2</sup> - taste	2,5		
Sensorical test <sup>1,3</sup> - smell	0		
Sensorical test <sup>1,3</sup> - taste	0,5		

<sup>1</sup> Scale of intensity:

- 0 - no noticeable change of smell and taste
- 1 - marginal change of smell and taste
- 2 - slight change of smell and taste
- 3 - clear change of smell and taste
- 4 - strong change of smell and taste

<sup>2</sup> Test conditions: water, 2 h, 70 °C, performed on cup

<sup>3</sup> Test conditions: water, 30 minutes, 40 °C, performed on spoon

According to article 3 subsection 1 c of the regulation (EC) 1935/2004 materials and articles shall be manufactured in compliance with good manufacturing practise so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could bring about a deterioration in the organoleptic characteristics thereof.

The tested samples meet this requirement.

LQ: Limit of quantification

Worked out:

Person in charge:

DEKRA Automobil GmbH – Handwerkstr. 17 – 70565 Stuttgart  
 Alexandra Haußmann Phone 0711/ 7861-3705

**IV) Cup, green:****1) Catalyst residues:**

<b>Sample No.:</b>	55268888 001			
<b>Sample designation:</b>	Cup green			
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>	<b>LQ</b>	<b>Limit</b>
<b>Catalyst residues</b>				
Chromium	mg/kg	< LQ	10	10
Vanadium	mg/kg	< LQ	10	20
Zirconium	mg/kg	< LQ	10	100
Hafnium	mg/kg	< LQ	10	100

According to BfR-recommendation III (Polyethylene) products shall not contain more than 10 ppm chromium, 20 ppm vanadium, 100 ppm zirconium and 100 ppm hafnium.  
The sample meets this requirement.

**Test methods:**

**Primary aromatic amines (extract):** SPE and HPLC-DAD (based on DIN EN 14362-1:2017-05) \*

**Specific migration metals:** VO (EU) 10/2011 / DIN EN ISO 17294-2:2017-01

**NIAS-Screening:** VO (EU) 10/2011 / GC-QTOF-MS/FID \*

**Catalyst residues:** DIN EN ISO 17294-2:2017-01

**Global migration:** VO (EU) 10/2011 / QMA 1424 and DIN EN 1186-1:2002-07

**Global migration with oil:** VO (EU) 10/2011 / DIN EN 1186 \*

**Sensorical examination:** DIN 10955:2004-06

**Specific migration of 2,6-Di-tert-butyl-p-kresol (BHT):** VO (EU) 10/2011 / HPLC-DAD

**Specific migration of 1,1,1-Trimethylolpropane, 2,5-Bis(5-tert-butyl-2-benzoxazolyl)thiophen, 3,5-di-tert-butyl-4-hydroxybenzylphosphonic acid, monoethyl ester, calcium salt, Bis(4-propylbenzylidene)propylsorbitol, n-Octylphosphonic acid :** VO (EU) 10/2011 / LC-MS/MS \*

**Specific migration of N,N-bis(2-hydroxyethyl)alkyl (C8-C18) amine, N,N-bis(2-hydroxyethyl)alkyl(C8-C18) amine hydrochlorides, 3,5-tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine- 2,4,6(1H,3H,5H)-trione:** VO (EU) 10/2011 / LC \*

**Specific migration of 9,9-bis(methoxymethyl)fluorene:** VO (EU) 10/2011 / GC-MS after extraction \*

**Specific migration of Vinylacetat:** VO (EU) 10/2011 / HS-GC-MS after extraction \*

**Catalyst residues:** DIN EN ISO 17294-2:2017-01

**Hints:**

The test results refer exclusively to the samples specified. A reproduction in excerpts of the test report must not be made without the written consent of the test laboratory. Chemical and material blanks are taken into account when determining the results. Samples will be stored for max. 6 months (for exceptions and specific storage times see QMH).

\*The analysis of the specific migrations, the global migration with oil, the NIAS-screening and the primary aromatic amines were performed by an accredited partner lab

Stuttgart, September 30, 2020

**DEKRA Automobil GmbH**

Laboratory for Environmental and Product Analysis



Alexandra Haußmann  
Project Manager Food Contact