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Client: ZHEJIANG UKPACK PACKAGING CO, LTD

**Contact Information:** Tangjiazha village, Ditang Street Yuyao City, Zhejiang, China 315490

**Buyer's name:** n.a.

NINGBO SUREDING PACKAGING CO.,LTD *Manufacturer's name:* 

2-2 TONGJI ROAD, SIMEN TOWN, YUYAO, ZHEJIANG

Components of Syrup dispenser pump

Identification/ UKS10

Model No(s): Components of Sauce dispenser pump

UKS30, UKR30, UKM30, UKFND30

Sample Receiving date: 2022-12-08

**Testing Period:** 2022-12-09 to 2023-01-10

**Delivery condition:** Apparent good, Samples tested as received

Test specification: Test conclusion:

Performed parameter(s) for the compliance with the following regulations concerning materials in contact with foodstuff:

**PASS** 

- German §31 LFGB (Lebens mittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch)

Other Information:

For detailed sample picture please refer to last page

Not available

For and on behalf of TÜV Rheinland / CCIC (Ningbo)Co., Ltd.

2023-01-16 Chris W. W. Wang / Assistant Manager

Date Name / Position

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 markon 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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Indication: Food contact

**Product:** Commodity, contact with foodstuff

§ 2 (6) No. 1, German Food, Commodities and Animal Feed Code of Law (LFGB)

## Description of test specimen

Item

1 Components of Syrup dispenser pump

Components of Sauce dispenser pump

## 1. Material List:

Sample No.	Material	Color	Location
1	PE	Semi-transparent	Refer to photo
2	PE	Beige	Refer to photo
3	PP	Semi-transparent	Refer to photo
4	PP	White	Refer to photo
5	PP	Black	Refer to photo
6	PP	Blue	Refer to photo
7	PP	Golden	Refer to photo
8	PP	Dark blue	Refer to photo
10	SUS 304	Silver Refer to pho	
11	Glass	Transparent	Refer to photo

## Remark:

According to client's information all PE, PP and SUS 304 items in same color are produced of same material. Tests were performed on randomly selected items.



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# 2. Overall Results:

Test No.	Tested Item	Conclusion
1	Sensorial examination	PASS
2	Global Migration	PASS
3	Specific Migration of Metals	PASS
4	Specific Migration of Polycyclic Aromatic Hydrocarbons (PAHs)	PASS
5	Colourfastness	PASS
6	Nonylphenol in Polymers	PASS
7	Screening of Plasticizer	PASS
8	Specific Release of Metals	PASS
9	Release of Heavy Metals from Glassware	PASS



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### 3. Results

### 3.1 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 DIN 10955:2004 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		

Test No.:	1
Sample No.:	1
Parameter:	Result
Transfer of Smell:	0
Transier of Smell.	U

Test No.:	2
Sample No.:	2
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0



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Test No.:	3
Sample No.:	3
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0
Test No.:	4
Sample No.:	4
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0
Test No.:	5
Sample No.:	5
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0
Test No.:	6
Sample No.:	6
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0
Test No.:	7
Sample No.:	7
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0
Test No.:	8
Sample No.:	8
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0



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Test No.:	9
Sample No.:	10
Parameter:	Result
Transfer of Smell:	0



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## 3.2 Global Migration

Test method: The migratory behaviour is 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) <b>/</b> 40 °C	
Ethanol 95 %	10 day(s) / 40 °C	
Isooctane	2 day(s) <b>/</b> 20 °C	

Test No.:	1(*2)(*3)					
Sample No.:	1					
Migration ratio:		167 ml / 1.0 dm <sup>2</sup>				
Parameter	Unit RL Migration Migration Result Result					
Acetic acid 3 %	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Ethanol 95 %	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Isooctane	mg/dm²	2	7	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10

Test No.:	2(*2)(*3)					
Sample No.:	2					
Migration ratio:		167 ml / 1.0 dm <sup>2</sup>				
Parameter	Unit RL Migration Result Result 1st 2nd 3rd Migration Migration Limit					
Acetic acid 3 %	mg/dm²	2	3	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Ethanol 95 %	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Isooctane	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10



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Test No.:	3(*2)(*3)					
Sample No.:	3					
Migration ratio:		167 ml / 1.0 dm <sup>2</sup>				
Parameter	Unit RL Migration Migration Li Result					Limit
Acetic acid 3 %	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Ethanol 95 %	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Isooctane	mg/dm²	2	4	2	<rl< td=""><td>10</td></rl<>	10

Test No.:	4 <sup>(*2)(*3)</sup>					
Sample No.:	4					
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>					
Parameter	Unit RL Migration Migration Limit  Result Result					
Acetic acid 3 %	mg/dm <sup>2</sup>	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Ethanol 95 %	mg/dm <sup>2</sup>	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10
Isooctane	mg/dm <sup>2</sup>	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10

Test No.:		5 <sup>(*2)(*3)</sup>						
Sample No.:		5						
Migration ratio:			167 ml	/ 1.0 dm <sup>2</sup>				
Parameter	Unit	Unit RL Migration Migration Algorithm Result Result						
Acetic acid 3 %	mg/dm <sup>2</sup>	mg/dm <sup>2</sup> 2 <rl 1<="" <rl="" td=""></rl>						
Ethanol 95 %	mg/dm <sup>2</sup>	mg/dm <sup>2</sup> 2 <rl 10<="" <rl="" td=""></rl>						
Isooctane	mg/dm <sup>2</sup>	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10		



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Test No.:		6(*2)(*3)						
Sample No.:		6						
Migration ratio:			167 ml	/ 1.0 dm <sup>2</sup>				
Parameter	Unit	Unit RL Migration Result Result 1st 2nd 3rd Migration Migration Limit						
Acetic acid 3 %	mg/dm <sup>2</sup>	mg/dm <sup>2</sup> 2 2 <rl 10<="" <rl="" td=""></rl>						
Ethanol 95 %	mg/dm²	mg/dm <sup>2</sup> 2 <rl 10<="" <rl="" td=""></rl>						
Isooctane	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10		

Test No.:	7 <sup>(*2)(*3)</sup>						
Sample No.:	7						
Migration ratio:			167 ml	/ 1.0 dm <sup>2</sup>			
Parameter	Unit	Unit RL Migration Migration Limit Result Result					
Acetic acid 3 %	mg/dm <sup>2</sup>	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10	
Ethanol 95 %	mg/dm <sup>2</sup> 2 <rl 10<="" <rl="" td=""></rl>						
Isooctane	mg/dm²	2	<rl< td=""><td><rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<></td></rl<>	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10	

Test No.:		8(*2)(*3)						
Sample No.:		8						
Migration ratio:			167 ml	/ 1.0 dm <sup>2</sup>				
Parameter	Unit	Unit RL Migration Migration Migration Limit  Result Result						
Acetic acid 3 %	mg/dm <sup>2</sup>	mg/dm <sup>2</sup> 2 <rl 10<="" <rl="" td=""></rl>						
Ethanol 95 %	mg/dm <sup>2</sup>	mg/dm <sup>2</sup> 2 <rl 10<="" <rl="" td=""></rl>						
Isooctane	mg/dm²	2	3	<rl< td=""><td><rl< td=""><td>10</td></rl<></td></rl<>	<rl< td=""><td>10</td></rl<>	10		

## Abbreviations:

RL = Reporting Limit

mg/dm<sup>2</sup> = Milligram per square decimetre

ml/dm<sup>2</sup> = Mililitre per square decimetre

< = Less than



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### Remark:

- \*1 Acc. to DIN EN 1186-1 the following analytical tolerances have been observed:
  - 3 mg/dm<sup>2</sup> in migration tests using rectified olive oil or substitutes,
  - 1 mg/dm<sup>2</sup> in migration tests using aqueous simulants

A material or article that exceeds the overall migration limit by an amount not greater than the analytical tolerance mentioned above should therefore be deemed to be in compliance with the overall migration limit.

- \*2 Stability test is included in this test parameter.
- \*3 The migration results do not show increase between subsequent tests and therefore it meets the stability requirement.



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# 3.3 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.

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

The following food simulant and condition were applied:

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

Test No.:	1 <sup>(*2)(*3)</sup>							
Material No.:		1						
Migration ratio:			167	ml / 1.0 dm <sup>2</sup>				
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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		



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Test No.:		2(*2)(*3)							
Material No.:		2							
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>								
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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			



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Test No.:	3(*2)(*3)							
Material No.:		3						
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>							
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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		



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Test No.:		4(*2)(*3)							
Material No.:		4							
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>								
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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			



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Test No.:	5(*2)(*3)								
Material No.:		5							
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>								
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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			



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Test No.:	6(*2)(*3)								
Material No.:				6					
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>								
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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			



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Test No.:	7(*2)(*3)								
Material No.:		7							
Migration ratio:	167 ml / 1.0 dm <sup>2</sup>								
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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			



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Test No.:		8(*2)(*3)							
Material No.:		8							
Migration ratio:			167	ml / 1.0 dm <sup>2</sup>					
Parameter	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> 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			

## Abbreviations:

RL = Reporting limit

n.d. = Not detected

mg/kg = Milligram per kilogram

ml/dm<sup>2</sup> = Mililitre per square decimetre

< = Less than



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## 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 Stability test is included in this test parameter.
- \*3 The migration results do not show increase between subsequent tests and therefore it meets the stability requirement.



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## 3.4 Specific Migration of Polycyclic Aromatic Hydrocarbons (PAHs)

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU)

No. 10/2011 and its amendments. Determination by GC-MS.

Limit: Please refer to remark 1

The following food simulant and condition was applied:

Food simulant	Test duration / Temperature
Isooctane	2 day(s) / 20 °C

Test No.:	1(*3)(*4)						
Material No.:	1						
Migration ratio:				167 ml / 1.0	0 dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	2(*3)(*4)						
Material No.:	2						
Migration ratio:				167 ml / 1.	0 dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	3(*3)(*4)						
Material No.:	3						
Migration ratio:				167 ml / 1.0	O dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	4(*3)(*4)						
Material No.:	4						
Migration ratio:				167 ml / 1.0	0 dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	5(*3)(*4)						
Material No.:	5						
Migration ratio:				167 ml / 1.0	0 dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	6(*3)(*4)						
Material No.:	6						
Migration ratio:				167 ml / 1.0	0 dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	7(*3)(*4)						
Material No.:	7						
Migration ratio:				167 ml / 1.0	O dm <sup>2</sup>		
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	-
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	-
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-
Sum of 15 PAHs	-	mg/kg	0.01	n.d.	n.d.	n.d.	n.d.



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Test No.:	8(*3)(*4)							
Material No.:	8							
Migration ratio:				167 ml / 1.0	0 dm <sup>2</sup>			
Parameter	CAS No.	Unit	RL	1 <sup>st</sup> Migration Result	2 <sup>nd</sup> Migration Result	3 <sup>rd</sup> Migration Result	Limit	
Benzo[a]pyrene (BaP)	50-32-8	mg/kg	0.01	n.d.	n.d.	n.d.	•	
Benzo[e]pyrene	192-97-2	mg/kg	0.01	n.d.	n.d.	n.d.	1	
Benzo[a]anthracene	56-55-3	mg/kg	0.01	n.d.	n.d.	n.d.	1	
Benzo[b]fluoranthene	205-99-2	mg/kg	0.01	n.d.	n.d.	n.d.	•	
Benzo[j]fluoranthene	205-82-3	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Benzo[k]fluoranthene	207-08-9	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Chrysene	218-01-9	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.01	n.d.	n.d.	n.d.	•	
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Indeno[1,2,3-c,d]pyrene	193-39-5	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Naphthalene	91-20-3	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Anthracene	120-12-7	mg/kg	0.01	n.d.	n.d.	n.d.	1	
Fluoranthene	206-44-0	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Phenanthrene	85-01-8	mg/kg	0.01	n.d.	n.d.	n.d.	1	
Pyrene	129-00-0	mg/kg	0.01	n.d.	n.d.	n.d.	-	
Sum of 15 PAHs	-	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

ml/dm<sup>2</sup> = Mililitre per square decimetre

< = Less than

## Remark:

- \*1 Polycyclic aromatic hydrocarbons (PAHs) are not listed substances for the production of plastic materials acc. to Regulation (EU) No. 10/2011, Annex I. A threshold of detection <0.01 mg/kg should be met.
- \*2 Single component with an amount below reporting limit was not considered by the calculation of the sum. In the case all of PAHs were not detected, the result is stated n.d.
- \*3 Stability test is included in this test parameter.



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\*4 The migration results do not show increase between subsequent tests and therefore it meets the stability requirement.

## 3.5 Colourfastness

Test method: 24th Communication on the testing of plastics in Bundesgesundheitsbl. 15 (1972) 285

Requirement: BfR Recommendations on Food Contact Materials (formerly "Plastics

Recommendations") Part IX "Colorants for Plastics and other Polymers used in

Commodities" - No transfer of colorants to foodstuffs is permitted

Test No.:	1	2
Sample No.:	2	5
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
Water	No	No
Acetic acid 3 %	No	No
Ethanol 50 %	No	No
Oil	No	No

Test No.:	3	4		
Sample No.:	6	7		
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample		
Water	No	No		
Acetic acid 3 %	No	No		
Ethanol 50 %	No	No		
Oil	No	No		

Test No.:	5
Sample No.:	8
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample
Water	No
Acetic acid 3 %	No
Acetic acid 3 % Ethanol 50 %	No No

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## 3.6 Nonylphenol in Polymers

Test method: Organic solvent extraction, GC-MS

Limit: Nonylphenol is not a listed substance for the production of plastic materials acc. to

Regulation (EU) No 10/2011, Annex I

Test No.:			1	
Sample No.:			1	
Parameter	Unit	RL	Result	Technically Preventable Limit
Nonylphenol	mg/kg	5	n.d.	5

## Abbreviations:

n.d. = Not detected (<Reporting Limit)

RL = Reporting Limit

mg/kg = Milligram per kilogram



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# 3.7 Screening of Plasticizer (#)

Test method: Extraction and Detection with reference to CPSC-CH-C1001-09.3. Screening list of

plasticizers acc. to table 1.

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

Test No.:			1		
Sample No.:			1		
Parameter	CAS No.	Unit	RL	Result	Limit (1, 2)
Benzylbutyl phthalate (BBP)	85-68-7	%	0.01	n.d.	0.1
Diethylhexyl phthalate (DEHP)	117-81-7	%	0.01	n.d.	0.1
Dibutyl phthalate (DBP)	84-74-2	%	0.01	n.d.	0.05
Diisononyl phthalate (DINP)	28553-12-0, 68515-48-0	%	0.01	n.d.	0.1
Diisodecyl phthalate (DIDP)	26761-40-0, 68515-49-1	%	0.01	n.d.	0.1

### Abbreviations:

n.d. = Not detected (<Reporting Limit)

RL = Reporting Limit

% = Percentage

### Remark:

- \*1 If used as a plasticizer the following restrictions apply:
  - BBP, DINP, DIDP: Can be used as a) as a plasticizer in repeated use materials and articles or b) as a plasticizer in single-use materials and articles containing non-fatty foods except for infant formulae and follow-on formulae as defined by Directive 2006/141/EC or processed cereal-based foods and baby foods for infants and young children as defined by Directive 2006/125/EC
  - DEHP, DBP: Can be used as a plasticizer in repeated use materials and articles contacting non-fatty foods

Further limitations concerning the specific migration of the respective substance still apply.

\*2 If used as a technical support agent the total content limitation of the respective substance within the final product apply as indicated in the table above.

Table 1: Screening List of Plasticize	r
Plasticizer Name	CAS No.
Di-n-pentylphthalat (DnPP)	131-18-0
Benzylbutyl phthalate (BBP)	85-68-7
Diethylhexyl phthalate (DEHP)	117-81-7
Dibutyl phthalate (DBP)	84-74-2

Plasticizer Name	CAS No.
Pentyl-iso-pentylphthalat	84777-06-0
Bis-(2-methoxyethyl)phthalat	117-82-8
Diethylhexylterephthalat (DEHT)	6422-86-2
Di-(2-butoxyethyl)phthalat	117-83-9

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Disagraphy shtheleta (DIND)	28553-12-0,
Diisononyl phthalate (DINP)	68515-48-0
Disadaayl phthalata (DIDD)	26761-40-0,
Diisodecyl phthalate (DIDP)	68515-49-1
Di-n-octylphthalat (DNOP)	117-84-0
Dimethylphthalat (DMP)	131-11-3
Diethylphthalat (DEP)	84-66-2
Butyl-i-butylphthalat	17851-53-5
Trimethylpentandiolisobutyrat (TXIB)	6846-50-0
Diisononyladipat (DINA)	33703-08-1
Acetyltributylcitrat (ATBC)	77-90-7
Diethylhexyladipat (DEHA)	103-23-1
Hexamoll®	166412-78-8
Mesamoll®	91082-17-6
Triphenylphosphat	115-86-6
Tri-o-kresylphosphat	78-30-8
Tri-m-kresylphosphat	563-04-2
Tri-p-kresylphosphat	78-32-0
Butylbenzoat	136-60-7
Di(propylen glycol) dibenzoat, DPGDB	27138-31-4
Di(ethylen glycol) dibenzoat, DEGDB	120-55-8
LG FLEX EBN	610787-77-4
LG FLEX BET	610787-76-3
Tri(ethylhexyl)trimellitat, TOTM	3319-31-1
2-Ethylhexyldiphenylphosphat	1241-94-7
Di isa hantulahthalat DILlaD	90937-19-2,
Di-iso-heptylphthalat, DIHeP	71888-89-6

Diallylphthalat	131-17-9
Dicyclohexylphthalat (DCP)	84-61-7
Bis-(3,5,5-trimethylhexyl)phthalat	14103-61-8
Dicapryladipat	108-63-4
Di-n-butylmaleat (DBM)	1190-39-2,
Di-11-batylinaleat (DDIVI)	105-76-0
Di-(2-ethylhexyl)maleat	142-16-5
Butylstearat	123-95-5
Dimethyladipat	627-93-0
Dibutyladipat	105-99-7
Diicodocyladinat	27178-16-1,
Diisodecyladipat	27193-86-8
Di(2-(2-butoxyethoxy)ethyl)adipat	141-17-3
Bis(2-butoxyethyl)adipat	141-18-4
Stearylstearat	2778-96-3
Di-n-propylphthalat	131-16-8
Di-n-hexylphthalat, DNHP	84-75-3
Di-n-heptylphthalat	3648-21-3
Di-n-nonylphthalat, DnNP	84-76-4
Di-n-decylphthalat	84-77-5
Di-n-undecylphthalat	91082-17-6
Diisoundecylphthalat, DIUP	96507-86-7
Di(2-propylheptyl)phthalat, DPHP	53306-54-0
Diisooctylphthalat, DIOP	27554-26-3
Diisobutylphthalat, DIBP	84-69-5
Diisopentylphthalat DiPP	605-50-5



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## 3.8 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". The migratory behaviour is examined with reference to Chapter V, Article 18 of Commission regulation 10/2011 and its amendments. Presence of elements were detected by means of ICP-MS.

Limit: Technical Guide on Metals and alloys used in food contact materials

The following food simulant and condition was applied:

Food simulant	Test duration / Temperature	
Citric Acid 0.5 %	10 day(s) / 40 °C	

Test No.:	1					
Sample No.:	10					
Volume to surface area ratio				375 ml		
			Sum 1 <sup>st</sup>	+ 2 <sup>nd</sup> test	3 <sup>rd</sup> t	est
Parameter	Unit	RL	Result	Limits (*2)	Result	Limits (*1)
Silver (Ag)	mg/kg	0.05	<rl< td=""><td>0.56</td><td><rl< td=""><td>0.08</td></rl<></td></rl<>	0.56	<rl< td=""><td>0.08</td></rl<>	0.08
Aluminum (Al)	mg/kg	0.1	<rl< td=""><td>35</td><td><rl< td=""><td>5</td></rl<></td></rl<>	35	<rl< td=""><td>5</td></rl<>	5
Cobalt (Co)	mg/kg	0.01	<rl< td=""><td>0.14</td><td><rl< td=""><td>0.02</td></rl<></td></rl<>	0.14	<rl< td=""><td>0.02</td></rl<>	0.02
Chromium (Cr)	mg/kg	0.01	0.02	1.75	<rl< td=""><td>0.25</td></rl<>	0.25
Copper (Cu)	mg/kg	0.5	<rl< td=""><td>28</td><td><rl< td=""><td>4</td></rl<></td></rl<>	28	<rl< td=""><td>4</td></rl<>	4
Iron (Fe)	mg/kg	5	<rl< td=""><td>280</td><td><rl< td=""><td>40</td></rl<></td></rl<>	280	<rl< td=""><td>40</td></rl<>	40
Manganese (Mn)	mg/kg	0.1	<rl< td=""><td>12.6</td><td><rl< td=""><td>1.8</td></rl<></td></rl<>	12.6	<rl< td=""><td>1.8</td></rl<>	1.8
Molybdenum (Mo)	mg/kg	0.02	<rl< td=""><td>0.84</td><td><rl< td=""><td>0.12</td></rl<></td></rl<>	0.84	<rl< td=""><td>0.12</td></rl<>	0.12
Nickel (Ni)	mg/kg	0.01	<rl< td=""><td>0.98</td><td><rl< td=""><td>0.14</td></rl<></td></rl<>	0.98	<rl< td=""><td>0.14</td></rl<>	0.14
Tin (Sn)	mg/kg	10	<rl< td=""><td>700</td><td><rl< td=""><td>100</td></rl<></td></rl<>	700	<rl< td=""><td>100</td></rl<>	100
Vanadium (V)	mg/kg	0.01	<rl< td=""><td>0.07</td><td><rl< td=""><td>0.01</td></rl<></td></rl<>	0.07	<rl< td=""><td>0.01</td></rl<>	0.01
Zinc (Zn)	mg/kg	1	<rl< td=""><td>35</td><td><rl< td=""><td>5</td></rl<></td></rl<>	35	<rl< td=""><td>5</td></rl<>	5
Arsenic (As)	mg/kg	0.002	<rl< td=""><td>0.014</td><td><rl< td=""><td>0.002</td></rl<></td></rl<>	0.014	<rl< td=""><td>0.002</td></rl<>	0.002
Barium (Ba)	mg/kg	0.1	<rl< td=""><td>8.4</td><td><rl< td=""><td>1.2</td></rl<></td></rl<>	8.4	<rl< td=""><td>1.2</td></rl<>	1.2
Beryllium (Be)	mg/kg	0.01	<rl< td=""><td>0.07</td><td><rl< td=""><td>0.01</td></rl<></td></rl<>	0.07	<rl< td=""><td>0.01</td></rl<>	0.01
Cadmium (Cd)	mg/kg	0.002	<rl< td=""><td>0.035</td><td><rl< td=""><td>0.005</td></rl<></td></rl<>	0.035	<rl< td=""><td>0.005</td></rl<>	0.005
Mercury (Hg)	mg/kg	0.003	<rl< td=""><td>0.021</td><td><rl< td=""><td>0.003</td></rl<></td></rl<>	0.021	<rl< td=""><td>0.003</td></rl<>	0.003
Lithium (Li)	mg/kg	0.02	<rl< td=""><td>0.336</td><td><rl< td=""><td>0.048</td></rl<></td></rl<>	0.336	<rl< td=""><td>0.048</td></rl<>	0.048
Lead (Pb)	mg/kg	0.01	<rl< td=""><td>0.07</td><td><rl< td=""><td>0.01</td></rl<></td></rl<>	0.07	<rl< td=""><td>0.01</td></rl<>	0.01
Antimony (Sb)	mg/kg	0.01	<rl< td=""><td>0.28</td><td><rl< td=""><td>0.04</td></rl<></td></rl<>	0.28	<rl< td=""><td>0.04</td></rl<>	0.04



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Thallium (TI) mg/k	0.0001	<rl< th=""><th>0.0007</th><th><rl< th=""><th>0.0001</th></rl<></th></rl<>	0.0007	<rl< th=""><th>0.0001</th></rl<>	0.0001
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### 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.



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## 3.9 Release of Heavy Metals from Glassware

Test method: The test is performed reference to EN 1388-1:1995, EN 1388-2:1995 and DIN 51031:1986

respectively. The concentration of the elements is examined by means of atomic absorption

spectroscopy or ICP-MS.

Limit: Pb, Cd: Directive 84/500/EEC

Co: Working group of food chemistry experts from the federal states and the

Federal Office of Consumer Protection and Food Safety (ALS), 109th Session

2017, Opinion No.2017/15

Zn, Ba, Sb: Austrian Ceramic Ordinance

The following food simulant and condition was applied:

Food simulant	Test duration / Temperature	
Acetic acid 4 %	24 hours/ 22 °C	

Test No.:	1				
Category:		1			
Internal volume:		Less than one litre			
Sample No.:		11			
Parameter	Unit	Result	Limit (*1, 2)		
Lead (Pb)	mg/dm²	< 0.02	0.8		
Cadmium (Cd)	mg/dm²	< 0.002	0.07		
Cobalt (Co)	mg/dm²	< 0.01	0.02		
Zinc (Zn)	mg/article	< 0.5	3.0		
Barium (Ba)	mg/article	< 0.5	1.0		
Antimony (Sb)	mg/article	< 0.5	1.0		

### Abbreviations:

mg/dm<sup>2</sup> = Milligram per square decimetre

mg/article = Milligram per article

mg/I = Milligram per litre

< = Less than



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### Remarks:

\*1 According to EU Directive 84/500/EEC, articles in contact with food should not exceed the following limits

Category	Description	Lead	Cadmium
1	Articles which can't and articles which can be filled, the internal depth of which, measured from the lowest point to the horizontal plane passing through the upper rim, does not exceed 25 mm	0.8 mg/dm <sup>2</sup>	0.07 mg/dm <sup>2</sup>
2	Other articles which can be filled	4.0 mg/l	0.3 mg/l
3	Cooking ware; packaging and storage vessels having a capacity of more than three litres	1.5 mg/l	0.1 mg/l

<sup>\*2</sup> According to Austrian Ceramic Ordinance (BGBI. Nr. 893/1993 and its amendment), articles in contact with food should not exceed the following limits:

Category	Description	Zinc	Antimony	Barium
Internal	Less than one litre	3.0 mg/article <sup>(#)</sup>	1.0 mg/article <sup>(#)</sup>	1.0 mg/article <sup>(#)</sup>
volume	Greater than one litre	3.0 mg/l	1.0 mg/l	1.0 mg/l

<sup>(#)</sup> Calculation is based on the internal volume of the article

(#)- Test sub-contracted to a laboratory which complies with the requirement of ISO/IEC 17025:2017.



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# 4. Sample picture(s):



Sample 1



Above samples which are by client's declaration made of same material as tested Sample 1.



Sample 2



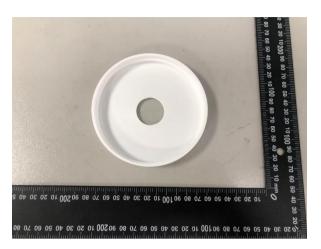
Sample 3



Above samples which are by client's declaration made of same material as tested Sample 3.



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Sample 4



Above samples which are by client's declaration made of same material as tested Sample 4.



Sample 5



Above samples which are by client's declaration made of same material as tested Sample 5.



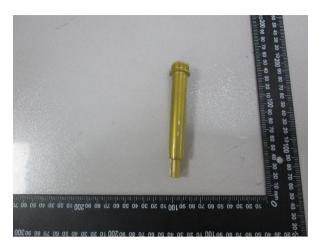
Sample 6



Above samples which are by client's declaration made of same material as tested Sample 6.



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Sample 7



Above samples which are by client's declaration made of same material as tested Sample 7.



Sample 8



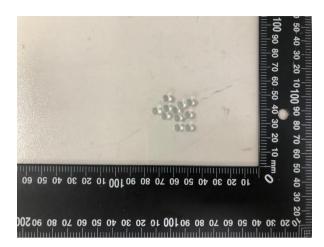
Sample 10



Above samples which are by client's declaration made of same material as tested Sample 10.



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UKS10

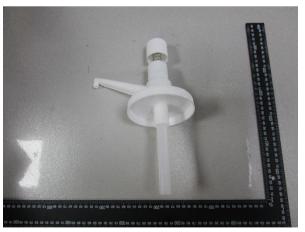
Sample 11











UKM30 UKFND30

### General Terms and Conditions of Business of TÜV Rheinland in Greater China

- These General Terms and Conditions of Business of TÜV Rheinland in Greater China ("GTCB") is made between the client and one or more member entities of TÜV Rheinland in 1.1 These General Terms and Conditions of Business of TÜV Rheinland in Greater Christ ("GTCB") is made between the clientand one or more member entites of TÜV Rheinland; The Greater Christ as applicable as the case may be ("TÜV Rheinland"). The Greater Christ as applicable as the case may be ("TÜV Rheinland"). The Greater Christ Chris

- b flutre contracts with the client without TUV Rheinland having to reter to mem separ easy in each individual case.

  Quotations

  Unless otherwise agreed, all quotations submitted by TÜV Rheinland can be changed by TÜV Rheinland without notice prior to its acceptance and confirmation by the other party.

  Coming into effect and duration of contraction resures upon the quotation letter of TÜV Rheinland or a separate contractual document being signed by both contracting parties, or upon the works requested by the dente being carried out by TÜV Rheinland if the diert instructs TÜV Rheinland without receiving a quotation from TÜV Rheinland if quotation, TÜV Rheinland is in its sole discretion, entitled to acceptite order by giving witten notice of such acceptance (including notice sert via electronic means) or by performing the requised services.

  The contraction mastra upon the coming into effect of the contract in accordance with added the contraction of the contraction o

- by the term provided our in the contractual term.

  Scope of services

  Three-month noise prior to the end of the contractual term.

  Scope of services

  The scope and type of the risk case to the provided by TÜV Rheinland shall be specified in the scope and type of the risk case on of TÜV Rheinland by hoth parties. If no such separate service scope of TÜV Rheinland exists, then the written confirmation of order by TÜV Rheinland shall be decise for the service to be provided Unless otherwise agreed, savious beyond the scope of the service description (e.g. checking the correctness and fundiorally ofparts, products, processes, installations, organizations natifisated in the service description as well as the intended use and application of such) are not owed. In particular, no seponsibility is assumed by the design, selection ofmaterials, construction orintended use of an examined part product, process or plant unless this is expressly stated in the order. The agreed services shall be particular for the production of the contraction orintended completes of the contraction of the contraction or the contraction orintended to describe the contraction orintended completes of the contraction orintended to describe the contraction orintended completes of the contraction orintended completes of the contraction orintended the contraction orintended completes or the contract of the contraction orintended to describe the contraction orintended completes or the contraction orintended completes or the contraction orintended completes or the contraction orintended to describe the contraction orintended completes or the contraction orintended completes or the contraction orintended completes or the contraction orintended to describe the contraction orintended to describe the contraction orintended completes or the cont
- assessmentunless oftensie agreed in writing or if manuaury provision to a queet a genum procedure to be followed.

  4.4 On execution of the work there shall be no simultaneous assumption of any guarantee of the correctness (properquality) and working order of either tested or examined parts nord the installation as a whole and its upstream and/or downstream processes, organisations, we and application in accordance with regulations, nor of the systems on which the installation is based. In particular, TUV Rheinland shall assume no responsibility for the construction, selection of materials and assembly of installations examined, nor for their use and application in accordance with regulations, unless these questions are expressly covered by the contract.

- selection of materials and assembly or insulations examined, not be application in accordancewith regulations unless shee equestions reexpressly covered by the contract.

  In the case of inspection work, TÜV Rheinland shall not be responsible for the accuracy or checking of the salety programmes or salety regulations on which the inspections are beauties of the riverse expressly agreed in writing, unless otherwise expressly agreed in writing to the provided by TÜV Rheinland chards for resulting additional expresses. The services to be provided by TÜV Rheinland chards for resulting additional expresses. The services to be provided by TÜV Rheinland chards the size of TÜV Rheinland as well as making available of and justifying confidence in the work results lest reports, test results, own work results in full or in extracts to third parties in accordance with clause 114. The clientunderstands and agreeded services. This also applies fiftee feinlengasses on work results in full or in extracts to third parties in accordance with clause 114. The clientunderstands and agreeded services. This also applies fiftee feinlengasses on work results in full or in extracts to third parties in accordance with clause 114. The clientunderstands and agreeded services. This also applies fiftee feinlengasses on work results in full or in extracts to third parties in accordance with clause 114. The clientunderstands and agreeded services. The performance contractivith TÜV Rheinland the client as agent to the parties of the parties tincump our not mitted to any testing and certification services to be provided by that besting and certification bodies). TUV Rheniand will provide the client as agent for sub-relevant services, in order to achieve the purpose of the contract, the clienthereby agent at TUV Rheniand can also sub-errors to the final part by provide agency-services, but TUV Rheniand shall not bear any responsibility and/or risk for any services to be provided by any find parties (including but not limited to the lessing and/or certification services to be entured and/or applied for by our company on behalf of the client to other that testing the parties of the client to the risk that the client testing and/or certification services to be entured to the terms under the contract. If the client is required to conduct any annual reviews/unrealization of the relevant testing and/or certification rules such less are not within the scope of the contract price resident size of the contract is the client taws and regulations or the testing and certification rules such less are not within the scope of the contract price and certification rules such less are not within the scope of the contract price, the client shall timely perform the obligation of such annual reviews/unrealiance and pay the corresponding tess. If the client trails to perform such obligations of the annual reviews/unrealiance or tess payment. It may lead to adverse consequences such as failure to borneraliand/evalidation of the contract, if the client requires TÜV Rheinland to deliver the service contentagreed in the contract, if the client requires TÜV Rheinland to deliver.
- bornelable by TÜVRheinland.

  49For the service contentagreed in the contract, if the clientrequires TÜVRheinland to deliver relevantest samples, data, etc. to any overseas laboratory or other places or sites to be designated by the client TÜVRheinland shall notake any responsibilities or risks for any problems during suchdelively and the transportation process (including but not limited to any problems during suchdelively and the transportation process (including but not limited to any problems during suchdelively and the transportation process (including but not limited to any problems during suchdelively and the transportation process including but not limited to any loss of or demanded to the service of the work involved which are prepareded line with the details provided by the client. They shall orly be indiring (tibering confirmed as binding by TÜVRheinland in writing.

  5.2 If binding periods of profromance have been agreed, these periods shall not commence until the clienthas submitted all required documents to TÜVR heinland.

- 5.3 Articles 5.1 and 5.2 also apply, even without express approval by the client, to all extensions of agreed periods/dates of performance not caused by TUV Rheinland
- of agreed periods idates of performance not caused by TDV Rheinland.

  TÜV Rheinland in ortrespons bib for a delay in performance, in particular if the client has not fulfilled his duties to cooperate in accordance with clause 6.1 or has not done so in time and in particular, has not provided TDV Rheinland with all documents and information required for the periormance of TDV Rheinland is delayed duties unlore see able circums tances such as force majeure, sit kes, business disuptions, governmental regulations, transport obstacks, etc. TDV Rheinland is entitled to postpone pedermance for a reasonable perior differenties for the perior delayed on the period of the perior delayed on the period of the perior delayed on the period of the perior delayed on the perio
- which corresponds atleast to the duration of the hindrance plus any time period which may be required to resume performance. If the client is obliged to comply with expending prescribed acadines, list the client's responsibility to agree on performancedates with TUN Rheinland, which enable the client to comply with the legal and/or officially prescribed deadlines. TUV Rheinland assumes no responsibility in this respectualess TUV Rheinland expressly agreed in writing specifically stating that ensuring the deadlines is the contracted.

- expressly agreed in writing specifically stating that ensuring the deadlines is the contractal obligation of 10V Rheinland. The clent's obligation to cooperate The client's obligation to cooperate The client's all quarantee that all cooperation required on its part, its agents or third parties will be provided in good time and at no cost to TÜVR heinland. Design documents, supplies, auxiliary staff, etc. necessary for performance of the services shall be made available free of charge by the client. Moreover, collaborative action of the client must be undertaken in accordance with legal provisions; shandards, safety regulatives and accident prevention in structions. And the client represents and warrants that it has required statutory qualifications; the product service or management system to be certified complies with applicable laws and remulsions: and
- and regulations; and if doesn't have any illegal and dishorest behaviours or is not included in the list of Enterprises with Serious Begal and Dishonest Acts of People's Republic of China. It he client breaches the abres aid representations and warrantes, TUV Rheintrad is nitied to i) immediately terminate the contractionder without prior notice; and ij) withdeat est issued testing reporticer filticates if any.

  The client is a serious contraction of the contraction from the client. Even where a title do or maximum price is agreed, TÜV heinland shall be entitled to charge extra fees for such additional expense.

- Khemiand s has be entered to train ge and the first of the scope of performance is not laid down in writing when the order is placed, invoicing shall be sased on costs actually incurred. Into price is agreed in writing, invoicing shall be made in accordance with the price is soft TUVR heinland valid at the time of performance. Unless otherwise agreed, with shall be invoiced according to the progress of the work. If the execution of an order extends overmore than one month and the value of the contact or the agreed fixed price exceeds £2500.00 or equivalent value in local currency, TUV Rheinland may demand payments on account or in instalments.

- Rhenland may demand payments on account of a misserierum.

  8.1 All invoice amounts shall be due for payment within 30 days of the invoice date wiltrud deduction on receiptofthe invoice. No discounts and rebases shall be grarted.

  8.2 Payments shall be made to the bank account of TUVR heinland as indicated on the invoice and client numbers.

  8.3 In cases of default of payment, TUVR heinland shall be entitled to claim default interest at the applicable short term loan interest state bublicly announced by a reputable commercial tark in the country where TUVR heinland is located. At the same time, TÜV Rheinland resews
- in the country where TÜVR heinland is located. Afthe same time, TÜVR heinland reserves the right to claim further damages outlier either that the same time. TÜVR heinland reserves the right to claim further damages outlier either diedault in payment of the invoice despite being granted a reasonable grouperod. TÜVR heinland reserves has been the contract, withdraw the certificate, damages bir non-performance and refuse to control the provisions set birth in article 8.4 shall also apply in case involving returned cheques control to the contract of the co
- k orassers. ections to the invoices of TÜVR heinland shall be submitted in writing within two weeks of eiptof the invoice.
- injortne invoice.
  Rheniland shall be entitled to demand appropriate advance payments.

  8.8 TUVRheinland shall be entitled to raise its lies est the beginning of a month if overheads, andfor purchase ossib have increased, in this case, TUV Rheinland shall notify the clientin writing of the rise in lees. This notification shall be issued one morth prior to the date on which the rise in fees shall come into effect (period of notice of the come into effect of the come into effect

- changes in fees). If the rise in fees remains under 5%per contractual year, the cleri shall not have the right to terminate the contract. If the rise in fees exceeds 3% part contractual year, the clerishatable entitled to terminate the contract by the end of the period of notice of changes in fees. If the contractis notterminated, the changed tax shall be deemed to have been agreed uponly the time of the expiry of the notice point Only, legally established and undisputed claims may be offset against claims by TÜV. Rheinland. hangee in feet. If the rise in feet remains under 5% per contractual year the clie
- Rheinfand.

  TUV Rhein and shall have the right at all times to settle any amount due or payable by the client, including but not limited to setoff against any fees paid by the client under any contracts, agreement and/or ordersquotations reached with TUV Rheinfand.

  Contract of the work result ordered which is complete in itself may be presented by TUV Rheinfand.

  Rheinfand for acceptance as an instalment. The client shall be obliged to accept it

- mmediately. acceptance is requiredor contractually agreedin an individual case this shall be deemed to have taken place two (2) weeks after completion and handoverof the work, unless the dient refuses acceptance within this period stating at least one fundmental breach of contract by
- eduses acceptance with the period of the per
- 94
- The clents not entitled to refuse acceptance due to insignate interest acceptance is excluded according to the nature of the work performance of TÜVRheinlard. If acceptance is excluded according to the nature of the work shall take its place. During the Follow-Audit stage, if the client was unable to make use of the time windows provided for within the scope of a certification procedure for auditing/performance by TÜV Rheinland and the certificate is therefore to be withdrawn (e.g. performance of surveillared audits), or if the client cancels or pospones a confirmed audit date within two (2 yeas before the agreed date, TÜV Rheinland is entitled to immediately charge a lump-sum compensation of 10% of the order amount as compensation for expenses. The client reserves the right to prove that the TÜV Rheinland has incurredno damage whatsoewer and a considerable hower damage than the above lump sum. 9.5
- reserves the right by rove hatthe TUV Kheinland has incurred no damage whatsower only a considerably lower damage han the above turns sum.

  The reserve the reserv

- sum.

  10. Confidentiality

  10. For the purpose of these terms and conditions, "confidential information" means all know how trades secrets, documents, images, drawings, expertise, information, data, test results, reports, samples, project documents, pricing and financial information, customer and suprier information, and marketing be chinques and makerials, tangible or inlangible, haters sugried, transferred or otherwise disclosed by one Party (the "disclosing party") be the other Party (the "disclosing party") be other Party (the "disclosing party") and party (in winding or orally in primated or electrons format Confidential information of services by TUVR heimand. TUVR heimand is entitled to store, use, further develop and pass on the data obtained in connection with the provision of services for the purposes of developing new services, improving services andrainly sing he provision of services.

  10.2 The disclosing party shall mark all confidential information disclosed in written form as confidential before passing if on the free-centing party. The same applies to confidential information transmitted by e-mail it confidential information is disclosed or ally, the receiving party. The abid confinential confinence and the disclosing party shall confinence and the disclosing party shall confinence.
- Very considerable above positional and no be indecisiving pasty. The same applies to confiderable information transmited by e-mail. It confiderable information is disclosed orally by the redwing party shall be appropriately informed in advance and the disclosing pasty shall be appropriately informed in advance and the disclosing pasty shall confirm in writing the confiderablish marrier of the information whiting days offer old side observed and the confiderable in the past of the information. The client shall avoid using any third party platform and/or system (e.g. Wechat etc. Unauthorized by TÜV Rheinland by a send any confiderablish (obligations hereunder towards such information. The client shall send any confiderablish (orall disness lindermation to TUV Rheinland amployees through its company email. If the client suffers from any losses or damages due to any fitted or leakages to be caused by the adoption of any unauthorized confiderabli information sharing methods mentioned above, TUV Rheinlands and be waived for any compensation illubilities.

  3.3 All confiderabli information which the disclosing party rains miles or otherwised coloses to the confiderable information which the disclosing party varians miles or otherwised coloses to the confiderable information which the disclosing party was miles or otherwised coloses to the confiderable information which the disclosing party was miles or otherwised coloses to the expression of the confiderable information which the disclosing party was miles or otherwised coloses to the expression of the confiderable information which the disclosing party was miles or otherwised coloses to the expression of the confiderable information or otherwised disclosed by the receiving party with the same level of confiderable information, inspection reports or documentation to the government authorities, judicial court, accreditation bodies or third parties that are involved in the performance of the contract.

  4.4 The receiving party with the same level of confiderablity as the

- violation of this confidentiality clause by the receiving party; or b) it was disclosed to the receiving party by a third party entitled to disclose this information
  - or c) the receiving party already possessed this information prior to disclosure by the dis
- of the receiving party afready possessed this information prior to disclosure by the disclosing party; or of the receiving party developed tikselt, irrespective of disclosure by the disclosing party; and nothe deemed to constitute "confidental information" as defined in this confidential is nothed deemed to constitute "confidental information" as defined in this confidential is classe. All confidential information is clustered by the receiving party, and the property of the discosing party, and the property of the discosing party, and the property of the confidential information, including all copies to the disclosing party, and the property of the confidential information, including all copies to the disclosing party, and the property of the confidential to the disclosing party and confidential to the disclosing party and the property of the confidential to the disclosing party in writing, all any time if so requested by the disdosing party but afthe talests and without special requestations the remination or expiry of the confidential to the disclosing party in writing, all any time if so requested by the disdosing party but afthe talests and without special requestations the remination or expiry of the confidential information that forms the basis for preparing these reports, certificates and confidential information that forms the basis for preparing these reports and certificates in other vidence the correctness of its results and for general documentation purposes required by procedures of UVFRs and the requirements of working procedures of UVFRs and the requirements of working the confidential information or expiry of the contract. The contract and for a period offerce years after termination or expiry offer contracts the receiving party shall maintain stict secrecyofal confidential information and shall not disclose this information to any third parties or use it for itself.

  10. Prom the start of the contractand for a period offerce years after termination or expiry offercent and the expert security. T

- Individual cases.

  applicable laws, regulations and relevantrules (incuring out to sting and certification rules, etc.).

  TUV Rheinland may revoke a none given approval according to clause 11.5 atanytin stating reasons. In this case, the dient is obliged to stop the transfer of the wimmediately at his own expense and, as far as possible, to withdray ubblications. The consent of TUV Rheinland to publication or duplication of the work results does the client to use the corporate logo, corporate design or testicerification man

### Rheinland 12. Liability of TÜVR heinland

- bibly of TUVR heinland a breach of contractual obligations or tort, the liability of TUVR heinland for all damags, losses and reimbursemerfole penesecaused by TUVR heinland, but all damags, losses and reimbursemerfole penesecaused by TUVR heinland, bit legal representatives and/or employees shall be limited bit (i) in the case of a contract with a fixed overall ties, the interest he overall feel for the entre contract (ii) in the case of a contract expressly changed on a lime and material basis, a maximum of 20,000 Euro or equivalent amount in local currency, and and material basis, a maximum of 20,000 Euro or equivalent amount in local currency, and and material basis, a maximum of 20,000 Euro or equivalent amount in local currency, and orders, three times of the fee for the individual order under which the damages or losses have occurred Nowithstand individual order under which the damages or losses. have occurred Nowinstandinghe above, in the everthathe total and accumulated liabily calculated according to the foregoing provisions exceeds 2.5 Million Euro or equivalent amountin local currency, the obland accumulated lability of TUPR heinland shall will limited to and shall not exceed the said 2.5 Million Euro or equivalent amount in local currency.
- currency.

  The limitation of liability according to article 12.1 above shall not apply to damages and/or losses caused by malice, intent or gross regigence on the part of TÜV Rheinland ords vicarious agents. Such limitation shall not apply to damages for a person's death, physical 12.2 T
- in jury or liness.

  12.3 in cases in volving a fundamental breach of contract, TÜVR heinland will be liable even where minor negligence is involved. For this purpose, a fundamental breach is breach of a material contractual obligation, he performance of which permits he due performance of which permits he due performance of which permits he due performance of the contract. Any claim for damages for a fundamental breach of contracts hall be limited to the amount of damages reasonably burseen as a possible consequenced such breach contract the time of the breach (reasonably foreseeable damages), unlessany of the circumstross described in article 12.2 applies.
- 12.4 TÜV Rheinland shall not be lable for the acts of the personnel made available by the clierto support TÜV Rheinland in the performance of its services under the contract unless such personnel made available se regarded savic abussager of TÜV Rheinland. If TÜV Rheinland is not lable for the acts of the personnel made available by the client under the foreign provision, the clientshall indermily TÜV Rheinland against any claims madeby third pass arising from or in connection with such personnels acts.

  12.5 Unless otherwise contract bally agreed in writing, TÜV Rheinland shall only be liable under the contract to the claims agreed in writing, TÜV Rheinland shall only be liable under the contract to the close short wise contract to the close stage stage of the claims.

  12.6 The limitation periods for claims for damages shall be based on statutory provisions.

  12.7 None of the provisions of this article 12 changes the burden of proof to the disadvantage of the cleim.

# 13.Export control

port control
When passing on the services provided by TÜVRheinland or parts thereof to third partie Greater China or other regions, the client must comply with the respectively applic regulations of national and international export control law.

- ne periormance or a contract will the client is subject to the proviso that there are to obstacles to performance due to national or international foreign trade legislations or embargos and/or sanctions. In the event of a violation, TUV Rheinland shall be entitled to terminate the contract with immediate effect and the client shall compensate for the losses.
- consequences to performence due to habonal or international breign fade legislations or embragos andor sanctions. In the eventrial or violation, TUV Rheinland shall be entitled to terminate the contract with immediate effect and the client shall compensate for the losses the contract with immediate effect and the client shall compensate for the losses the client of the client o

- Reinland AG, civ Group Data Protection Officer, Am Grauen Sein, 51105 Cologne Germany.

  15. Reg many:

  15. Reg many:

  15. Reg many:

  15. The test samples submitted by the clients TDVR heinland for testing will be scrappediollowing testing or will be returned to the clientat the clients expense. The only exceptions are test samples, which are placed in storage on the basis of statutory regulations or of arrivar agreement with the client.

  15. Charges apply if the test samples are storage at the premises of TDV Rheinland. The cost of placing a test sample into storage will be disclosed to the client in the quotation.

  15.3 If reference samples for documentations are given to the client be placed in storage at their premises, the reference samples or documentations must be made available to TDV Rheinland upon request promptly and free of charge. If the client, in response to such a request is incapable of making available the reference samples andor documentation, any liability, claims for material and pecuniary dramage resulting from the respective testing and testing the clients for the control of the contract of the contract.

- ne selfgence.

  16. Termanian on the contract

  16. Tho Now the terminant of the contract individually and independently of the contractach of the combined parts of the contract individually and independently of the contractach of the remaining services with six (6) months indice to the end of the contractach agreed term. The notice period shall be shortened to six (6) weeks in case TUV Rheinland its prevented from performing the services due to a lossor a suspension of its accreditation or notification.

  16.2 For good causes, TUV Rheinland may consider giving a witten notice to the client to terminate the contract which includes buntofithined to the following:

  a) the client does not immediately notify TUV Rheinland of changes is the conditions within the company which are relevant for certification or signs of such changes;

  b) the client misuses the certificate or certification mark or uses it in violation of the contract;

  c) in the event of several consecutive delays in paymert (allessattree times);

  d) a substantial deterioration of the financial circumstances of the client cours and as a result the payment claims of TUV. Rheinland under the consecutive consequence of the contract when payment causes and the services of the contract when the contract when

- b) the clientrinisuses the certificate or certification mark or uses it in violation of the contract:

  () in the event of several consecutive delays in paymert (altesathree fines):
  () a substantial deterioration of the financial circumstances of the clientoccurs and as a resit the paymert claims of IUV Rheinland under the contract are considerably endanged and e) in the event of any serious misrepresentation, be they intentional tasud or grossly negligart behavior of the managers, employees or agents of the client e) of TUV Rheinland, for reasons beyond its control, is temporarily or finally notable or entitled to continue or finalize the performance of the service, e.g. in case of force majoures or government interference, sanctions, loss of accreditation or notification, or other.
  16.3h the eventof termination with written note by TUV Rheinlander good cause. TUV Rheirland shall be entitled to a lump-sum claim for damages against the client if the conditions of a device of the control termination with written note by TUV Rheinlander good cause. TUV Rheirland shall be entitled to a lump-sum claim for damages against the client if the conditions of a device of the control termination with written note by TUV Rheinlander good cause. TUV Rheirland reserves the right to prove a considerably higher damager individual case interestications are serves the right to prove a considerably higher damager service provision provided by TUV Rheinland within the scope of a certification procedure and the certification provided and the certification with the scope of a certification procedure and the certification provided by TUV Rheinland within the scope of a certification procedure and the certification for a certification procedure and the certification for the certification procedure and the certification of the certification procedure and the ce
- premises such as boyout state and not only girsow, occupation of actions and premises.

  17.3. The Part occursation of the premises of the premise of the premises of the premi

- may be terminated by either Party time duration uses inspections.

  18.4 Tardship

  18.1 The Parties are bound to perform their contractual duties even if events have rended performance more onerous than could reasonably have been anticipated at the time of the conclusion of the contract.

  18.2. Nowinstanding paragraph of this Clause, where a Party proves that

  (a) the continued performance of its contractual duties has become excessively onerous dution an event beyond its reasonable contract which it could not reasonably have beenex protect to have taken into accountat the time of the conclusion of the contract and that

  (b) it could not reasonably have avoided or over corne the eventor its consequences the Parties are bound, within a reasonable time of the invocation of this Clause, to negotiate alternative constraints imms which reasonable time of the invocation of this Clause, to negotiate alternative constraints imms which reasonable time of the invocation of this Clause, to negotiate alternative constraints imms which reasonable time to overcome the consequences of the event.

- (b) it could not reasonably have avoided or over come the eventor its consequences the Paries are bound, within a reasonable time of the invocation of this Clause, be negotiate alternable contractual terms which reasonably allow to evereme the consequences of the event.

  18.3. Where Clause 18.2 applies, but when the Partes have been urable to agree alternable contractual terms as provided in hat paragraph, the Party invoking this Clause is erflied to terminate the contract but cannot request adaptation by the judge of arbitrative without the agreement of the other Parry.

  19. Partial invalidity, written from pace of jurisdiction, and dispute resolution.

  19. Partial invalidity, written from pace of jurisdiction and dispute resolution.

  19. It also an additive the contractive the provision of the provision in least the contract and/or these terms and conditions be or become ineffective, the contracting parties shall epitace the invalid provision that legally valid provision that comes closestor the content of the invalid provision in legal and commercial terms.

  19. It Tour Rheinland in question is legally registered and existing in the People's Republic of China, the contracting parties hereby agree that the contract and these terms and conditions shall be chosen following the rules as below:

  a) if TOU Rheinland in question is legally registered and existing in the People's Republic of China, the contracting parties hereby agree that the contractand these terms and conditions shall be gowered by the laws of the People's Republic of China, the contracting parties hereby agree that the contractand these terms and conditions shall be covered by the third the contracting parties the relative covered to the contracting parties for the province of t

- b) If IUV kneinland in quession is egaply registered and usually in control parties hereby agree hat the contract and these terms and conditions shall be governed by parties hereby agree hat the contract and these terms and conditions shall be governed by agree hat the contract and these terms and conditions shall be governed by reliance that the contract and these terms and conditions shall be governed by each at the contract and these terms and conditions of the execution thereof shall be settled friendly through negotiations.
  9.4 Any dispute in connection with the contract and these terms and conditions or the execution thereof shall be settled friendly through negotiations.
  Unless otherwise significant in the contract if no settlementor no agreement in respect of the extension of the negotiation period can be reached within two months of the arising of the dispute, the dispute shall be submitted.
  a) In the case of TÜV Rheinland in question being legally registered and existing in the Production of the Aribiration is submitted. The arbitration is allowed the arbitration is submitted. The arbitration is decided the arbitration is submitted. The arbitration is decided the arbitration is continued to the arbitration is submitted. The arbitration is decided to the arbitration is decided to the arbitration is decided by arbitration under the HARC.
  (a) in the case of TÜV Rheinland being legally registered and existing in Hong Kong international Arbitration Centre (HKRC) to be settled by arbitration under the HARC.
  Administered Arbitration Rules in throw when the Notec of Arbitration is submitted in the decision of the relevant arbitration in thounal shall be final and binding on both parties. The arbitration fee shall be borne by the losing party.