

Test Report

Testing institute : Product Technology Service (Ningbo) Co., Ltd.
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Yinzhou District, Ningbo 315192 P.R.China

Applicant : KOOPMAN INTERNATIONAL B.V
DISTELWEG 88 AMSTERDAM, THE NETHERLANDS

Product name : Frying pan

Order No. : 319180

Model No. : 170506870

Sample receive date : Aug.16,2019
Completes date : Aug.22,2019

Testing location : Product Technology Service (Ningbo) Co., Ltd.

Test specification(s)

1. Selected tests for the suitability for contact with foodstuffs in accordance with German § 30 and § 31 LFGB with amendments and Commission Regulation (EU) No 10/2011 with amendments, BfR Recommendation.

1.1-Sensory test

1.2-Overall migration

1.3-Specific release of heavy metals

1.4-GC screening on phenolic compounds

1.5-Specific migration of Fluoride

1.6-Specific migration of PFOA & PFOS

1.7-Phthalates content

1.8-Specific migration of Phthalates

2. Short Chain Chlorinated Paraffin (alkanes) (SCCP) content

3. Dimethyl fumarate (DMF) content

Conclusion

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

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Product Technology Service (Ningbo) Co., Ltd.

Ningbo, Sep.20,2019



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Product name

No.	Product name	Part No.	Part name
1	Frying pan	1-1	Non-stick coating(PTFE)

1.1. Test specification : Sensory test

Test method : DIN 10955:1983 (2004)
 Test condition: 100°C, 2 hours
 Test media: Distilled water
 No. of panelist: 6

Product Name: 1-1. Non-stick coating (PTFE)		
Parameter	Maximum permissible Limit	Result
Sensorial examination odour (Point scale)	2.5	0
Sensorial examination taste (Point scale)	2.5	0
Conclusion	--	Pass

Scale evaluation:

- 0: No perceptible
- 1: Just perceptible (still difficult to define)
- 2: Moderate
- 3: Moderately strong
- 4: Strong

1.2. Test specification : Overall migration

Test method : EN1186-1:2002: for selection of conditions and test methods
 EN1186-8:2002: olive oil by article filling
 EN1186-9:2002: aqueous food simulants by article filling

Requirement : COMMISSION REGULATION (EU) No 10/2011 and its amendments

Product name: 1-1. Non-stick coating (PTFE)					
Simulant used	Test condition	Unit	Maximum permissible Limit	Detection Limit	Result
3% acetic acid	2 hours at 100°C	mg/dm ²	10	3.0	ND
10% ethanol	2 hours at 100°C	mg/dm ²	10	3.0	ND
olive oil	2 hours at 100°C	mg/dm ²	10	3.0	ND
Conclusion	--				Pass

Note:

- 1) mg/dm²=milligram per square decimeter
- 2) ND=Not Detected(<Detection Limit)
- 3) Report the third migration result for repeated use articles.

1.3.Test specification : Specific release of heavy metals

Test method : Sample preparation in 0.5%(5 g/L) citric acid at 100°C for 2 hours, followed by analysis using ICP-OES/ICP-MS

Requirement : Council of Europe Resolution CM/Res(2013)9 on metals and alloys used in food contact materials and articles

Product name: 1-1.Non-stick coating(PTFE)						
Test Item(s)	Unit	Detection Limit	1 st + 2 nd Migration		3 rd Migration	
			Result	7xSRL ^{*2}	Result	SRL ^{*1}
Aluminum (Al)	mg/kg	0.5	ND	35	ND	5
Antimony (Sb)	mg/kg	0.010	ND	0.28	ND	0.04
Chromium (Cr)	mg/kg	0.100	ND	1.75	ND	0.25
Cobalt (Co)	mg/kg	0.010	ND	0.14	ND	0.02
Copper (Cu)	mg/kg	0.5	ND	28	ND	4
Iron (Fe)	mg/kg	5.0	ND	280	ND	40
Magnesium(Mg)	mg/kg	0.1	ND	-	ND	-
Manganese (Mn)	mg/kg	0.50	ND	12.6	ND	1.8
Molybdenum (Mo)	mg/kg	0.050	ND	0.84	ND	0.12
Nickel (Ni)	mg/kg	0.050	ND	0.98	ND	0.14
Silver (Ag)	mg/kg	0.050	ND	0.56	ND	0.08
Tin ^{*3} (Sn)	mg/kg	5.0	ND	700	ND	100
Titanium(Ti)	mg/kg	0.1	ND	-	ND	-
Vanadium (V)	mg/kg	0.005	ND	0.07	ND	0.01
Zinc (Zn)	mg/kg	0.5	ND	35	ND	5
Arsenic (As)	mg/kg	0.0010	ND	0.014	ND	0.002
Barium (Ba)	mg/kg	0.10	ND	8.4	ND	1.2
Beryllium (Be)	mg/kg	0.005	ND	0.07	ND	0.01
Cadmium (Cd)	mg/kg	0.0010	ND	0.035	ND	0.005
Lead (Pb)	mg/kg	0.005	ND	0.07	ND	0.01
Lithium (Li)	mg/kg	0.0050	ND	0.336	ND	0.048
Mercury (Hg)	mg/kg	0.0005	ND	0.021	ND	0.003
Thallium (Tl)	mg/kg	0.00005	ND	0.0007	ND	0.0001
Conclusion	Pass					

Note:

- 1) mg/kg =milligram per kilogram
- 2) SRL = Specific Release Limit
- 3) ND=Not Detected(<Detection Limit)
- 4) *1 Compliance is established on the result from the third migration test for repeated used articles.
- 5) *2 Meantime, the sum of the results of the first and second tests should not exceed 7 times the SRL
- 6) *3 Except in field of application under Regulation (EC) No.1881/2006.(canned food container)

1.4. Test specification : GC screening on phenolic compounds

Test method : EN 13130-1:2004

Product name: 1-1. Non-stick coating(PTFE)					
Parameter	Test condition	Unit	Limit	Detection Limit	Result
phenolic compounds	In 95% ethanol at 60°C for 3.5 hours	mg/L	Not Detectable	0.5	ND
Conclusion	--				Pass

Note:

- 1) mg/L=milligram per liter
- 2) ND=Not Detected(<Detection Limit)
- 3) Report the third migration result for repeated use articles.

1.5. Test specification : Specific migration of Fluoride

Test method : EN 13130-1:2004

Product name: 1-1. Non-stick coating(PTFE)					
Parameter	Test condition	Unit	Maximum permissible Limit	Detection Limit	Result
Fluoride	In water at 100°C for 2 hours	mg/L	10	10	ND
Conclusion	--				Pass

Note:

- 1) mg/L=milligram per liter
- 2) ND=Not Detected(<Detection Limit)
- 3) Report the third migration result for repeated use articles.

1.6. Test specification : Specific migration of PFOA & PFOS

Test conditions : 3% acetic acid, 100°C for 2 hours

Product name: 1-1. Non-stick coating(PTFE)				
Parameter	Unit	Limit	Detection Limit	Result
Perfluorooctaneacid(PFOA) & Perfluorooctane Sulfonate(PFOS)	mg/dm ²	0.005	0.005	ND
Conclusion	--			Pass

Note:

- 1) mg/dm²=milligram per square decimeter
- 2) ND=Not Detected(<Detection Limit)

1.7. Test specification : Phthalates content

Test method : Solvent extraction and quantification by gas chromatography-mass selective detector (GC-MS)

Requirement : COMMISSION REGULATION (EU) No 10/2011 and its amendments

Product name: 1-1. Non-stick coating(PTFE)				
Phthalates	CAS No.	Maximum permissible Limit	Detection Limit	Result
Dibutyl phthalate (DBP)	84-74-2	0.05%	0.005%	ND
Butyl benzyl phthalate (BBP)	85-68-7	0.1%	0.005%	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	0.1%	0.005%	ND
Di-iso-nonyl phthalate (DINP)	68515-48-0	0.1%	0.005%	ND
Di-iso-decyl phthalate (DIDP)	68515-49-1	0.1%	0.005%	ND
Bis-(2-ethylhexyl) adipate (DEHA)	103-23-1	--	0.005%	ND
Phthalic acid, diallyl ester(DAP)	131-17-9	--	0.005%	ND
Conclusion				Pass

Note:

- 1) ND=Not Detected(<Detection Limit)
- 2) "--" = Not Regulated

Main test instruments used for this method:

Instrument	Manufactory	Model / Type
GC-MS	Agilent Technologies	GC (7890)-MS (5975C)

1.8. Test specification : Specific migration of Phthalates

Test method : Sample preparation with reference to EN 13130-1:2004, Solvent extraction and quantification by GC-MS

Requirement : COMMISSION REGULATION (EU) No 10/2011 and its amendments

Product name: 1-1. Non-stick coating(PTFE)						
Test condition:		Sample preparation in 95% ethanol at 60°C for 3.5 hours				
Phthalates	CAS No.	Unit	Maximum permissible Limit	Detection Limit		Result
Dibutyl phthalate (DBP)	84-74-2	mg/kg	0.3	0.1		ND
Butyl benzyl phthalate (BBP)	85-68-7	mg/kg	30	0.1		ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	mg/kg	1.5	0.1		ND
Di-iso-nonyl phthalate (DINP)	68515-48-0	mg/kg	Total 9	2	Total 4	ND
Di-iso-decyl phthalate (DIDP)	68515-49-1	mg/kg		2		ND
Bis-(2-ethylhexyl) adipate (DEHA)	103-23-1	mg/kg	18	5		ND
Phthalic acid, diallyl ester(DAP)	131-17-9	mg/kg	Not Detectable	0.01		ND*
Conclusion						Pass

Note:

- 1) mg/kg=milligram per kilogram
- 2) ND=Not Detected(<Detection Limit)
- 3) Report the third migration result for repeated use articles.
- 4) *=The migration results are based on the first migration.

2. Test specification : Short Chain Chlorinated Paraffin (alkanes) (SCCP) content
- Test method : Solvent extraction and quantification by gas chromatography-mass selective Detection(GC/MS)
- Requirement : Substances of very high concern (SVHC) based on the list published by ECHA regarding Regulation (EC) No 1907/2006 concerning REACH.

Product Name:1-1.Non-stick coating(PTFE)				
Parameter	Unit	Requirement	Detection Limit	Result
Chloroparaffin C10-13	mg/kg	1000	50.0	ND
Conclusion		--		Pass

Note:

- 1) mg/kg=milligram per kilogram
- 2) ND=Not Detected(<Detection Limit)

Main test instruments used for this method:

Instrument	Manufactory	Model / Type
GC-MS	Agilent Technologies	GC (7890)-MS (5975C)

3. Test specification : Dimethyl fumarate (DMF) content
- Test method : Solvent extraction and quantification by gas chromatography-mass selective detector (GC-MS)
- Requirement : Commission Regulation(EU) No 412/2012, Annex XVII of Regulation (EC) No 1907/2006(REACH)

Product Name:1-1.Non-stick coating(PTFE)				
Parameter	Unit	Requirement	Detection Limit	Result
Dimethyl fumarate(DMF)	mg/kg	0.1	0.10	ND
Conclusion		--		Pass

Note:

- 1) mg/kg=milligram per kilogram
- 2) ND=Not Detected(<Detection Limit)

Main test instruments used for this method:

Instrument	Manufactory	Model / Type
GC-MS	Agilent Technologies	GC (7890)-MS (5975C)

Sample photo(s), see annex 1

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Product Technology Service

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ANNEX 1

Sample photo, consist of 1 page



1-1.Non-stick coating(PTFE)
Frying pan