



**HEAD OFFICE :**

Plot No. 12, Sector B1, Local Shopping Complex,  
Vasant Kunj, New Delhi - 110070  
Phone No : +91 11 26139256 - 265  
Fax No : +91 11 26125739

**WORKS :**

28 – K.M. Stone, Nashik - Igatpuri Road, N. H. 3  
Village : Mundegaon, Taluk : Igatpuri,  
Dist : Nasik, Maharashtra, PIN : 422403  
Phone : + 91 2553 229100  
Fax No : + 91 2553 229200

Website : [www.jindalpoly.com](http://www.jindalpoly.com)

**FOOD CONTACT COMPLIANCE  
CERTIFICATE OPP FILMS**

**COMPLIANCE TO EEC DIRECTIVES  
AND FDA REGULATIONS**

This is to certify that Oriented Polypropylene (OPP) Films of following types are manufactured and supplied by Jindal Poly Films Limited are complied with food contact regulatory requirements as per EEC Directives 10/2011 and FDA 177.1520 regulations

**List of OPP Films**

Sl. No	OPP Film Type	Sl. No	OPP Film Type	Sl. No	OPP Film Type	Sl. No	OPP Film Type	Sl. No	OPP Film Type	Sl. No	OPP Film Type
1	N1 / N2	11	N2-MT	21	SP-MD	31	H1 / H2-PLS	41	SM1	51	H1-OP
2	H1 / H2	12	N1-MZ	22	SP-MDV	32	H1 / H2-PLC	42	N1-TFT		
3	S1	13	N2-MZ	23	N1-MD	33	H1-PUL	43	N1-AT		
4	H1-LS	14	H1-MZ	24	N2-MD	34	H1-PUS	44	N1-BG		
5	H1-ULS	15	SP-MZ	25	H1 / H2-PLD	35	H1-PLH	45	SP1		
6	H1-UUS	16	H1-MD	26	H1 / H2-PDB	36	H1-PUH	46	H2-AP		
7	SP-HS	17	H1-LMD	27	H2-OW	37	H1/H2-PLG	47	H2-AA		
8	N1-LH	18	H1-UMD	28	H0-CG	38	N1/N2-PL	48	H2-A		
9	H1-LH	19	H1-UDB	29	S1-PL	39	N1/N2-PLG	49	H2-LP		
10	N0	20	H1-MDV	30	H1 / H2-PL	40	N1 / N2-LB	50	H2-LA		

---Table-1---

**EUROPEAN UNION:** Comply Commission Regulation 10/2011 and its successive amendment 202/2014 & 174/2015, Regulation (EC) No.1935/2004, Regulation (EC) No.1895/2005, Regulation (EC) No.2023/2006, Monomers, additives and other starting substances are listed in Annex I of the Regulation (EU) No. 10/2011 and successive amendments up to Regulation (EU) 1282/2011.

Migration tests, carried out following the directives 82/711/EEC, 85/572/EEC, 93/8/EEC and 97/48/EC (simulants B, C.D at the condition of 10 days at 40°C), Confirm the overall migration results below to 10 mg/dm (as reported below) :

The test results as per EC regulations 10/2011 are given below.

**TEST RESULTS-OVERALL MIGRATIONS (SHORT & LONG TERM DURATION)**

**Simulant B**

Simulant Used	Test Method	Results (mg/dm <sup>2</sup> )	LOQ (mg/dm <sup>2</sup> )	Maximum Permissible Limit
Overall Migration : 3% Acetic Acid (Simulant B) at 40° C for 10 days	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10
Overall Migration : 3% Acetic Acid (Simulant B) at 70° C for 2 hrs	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10

BLQ : Below Limit of Quantification, LOQ: Limit of Quantification

**Simulant A**

Simulant Used	Test Method	Results (mg/dm <sup>2</sup> )	LOQ (mg/dm <sup>2</sup> )	Maximum Permissible Limit
Migration : 10% Ethanol (Simulant A) at 40 °C for 10 days	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10
Migration : 10% Ethanol (Simulant A) at 70 °C for 2 hrs	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10

BLQ: Below Limit of Quantification, LOQ: Limit of Quantification

**Simulants D2**

Simulant Used	Test Method	Results (mg/dm <sup>2</sup> )	LOQ (mg/dm <sup>2</sup> )	Maximum Permissible Limit
Migration: Rectified Olive Oil (Simulant D2) at 40 °C for 10 days.	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10
Migration: Rectified Olive Oil (Simulant D2) at 70 °C for 2 hrs.	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10

BLQ : Below Limit of Quantification, LOQ: Limit of Quantification

**Simulants C**

Simulant Used	Test Method	Results (mg/dm <sup>2</sup> )	LOQ (mg/dm <sup>2</sup> )	Maximum Permissible Limit
Migration : 20% Ethanol (Simulant C) at 40 °C for 10 days.	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10
Migration : 20% Ethanol (Simulant C) at 70 °C for 2 hrs.	EC 10/2011 (Ref.2002/72/EC)	BLQ	5	10

BLQ: Below Limit of Quantification, LOQ: Limit of Quantification

**Soluble Heavy Metals**

Test Parameter	Test Method	Result in ppm	Permissible Limit (mg/ kg )
Barium	EC 10/2011	<0.10	< 1.0
Cobalt	EC 10/2011	<0.05	< 0.05
Copper	EC 10/2011	<0.10	< 5.0
Iron	EC 10/2011	<0.10	< 48.0
Lithium	EC 10/2011	<0.10	< 0.6
Manganese	EC 10/2011	<0.10	< 0.6
Zinc	EC 10/2011	<0.10	< 25.0

( 3% Acetic Acid for 2 hrs at 70<sup>0</sup> C) ppm :parts per million

Test Parameter	Test Method	Result in ppm	Permissible Limit (mg/ kg )
Barium	EC 10/2011	< 0.10	< 0.10
Cobalt	EC 10/2011	< 0.05	< 0.05
Copper	EC 10/2011	< 0.10	< 5.0
Iron	EC 10/2011	< 0.10	< 48.0
Lithium	EC 10/2011	< 0.10	< 0.6
Manganese	EC 10/2011	< 0.10	< 0.6
Zinc	EC 10/2011	< 0.10	< 25.0

( 3% Acetic Acid for 10 days at 40<sup>0</sup> C), ppm : parts per million

**Simulants D1**

Simulant Used	Test Method	Results (mg/dm <sup>2</sup> )	LOQ (mg/dm <sup>2</sup> )	Maximum Permissible Limit (mg/dm <sup>2</sup> )
Migration : 50 % Ethanol (Simulant D1) at 40°C for 10 days	EC 10/2011 (Ref.2002/72/EC)	BLO	5	10
Migration : 50 % Ethanol (Simulant D1) at 70 °C for 2 hrs.	EC 10/2011 (Ref.2002/72/EC)	BLO	5	10

BLO: Below Limit of Quantification, LOQ: Limit of Quantification

**Food Safety test as per 21CFR 177.1520**

TEST REQUESTED	CONCLUSION
FOOD Safety 21 CFR 177.1520 (Density determined at 23° C, Xylene at 25o C for 2 hrs, n-hexane at 50o C for 2 hrs.)	PASS
21 CFR 177.1630 (Distilled water @250° F for 2 hrs, 50% ethanol @ 120o F for 24 hrs, n-heptane @ 150o F for 2 hrs.)	PASS

**II. TEST RESULTS-SPECIFIC MIGRATIONS**

**(SPECIFIC MIGRATION OF AROMATIC AMINE IN 3% ACETIC ACID, SPECIFIC MIGRATION OF 8 PHTHALATES (DEHP, BBP, DBP, DINP, DIDP, DNDP, DNOP AND DIALLYL PHTHALATES) IN SUBSTITUTES (95% ETHANOL + ISOCTANE), SPECIFIC MIGRATION OF BADGE, BADGE DERIVATIVES, BFDGE, NOGE IN WATER )**

Test Results :

1. European Commission Regulation (EU) NO 10/2011.

a) Specific Migration of Phthalates

Method: Sample preparation with reference to EN 13130-1:2004; followed by analysis using Gas chromatography-Mass spectrometry (GC-MS).

Test condition: 95% ethanol in aqueous solution at 40<sup>0</sup>C for 10 days

Test Item	Results (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	1		
Dibutyl phthalate (DBP)	ND	0.05	0.3
Benzylbutyl phthalate (BBP)	ND	0.05	30
Bis-(2-ethylhexyl) phthalate (DEHP)	ND	0.05	1.5
Diisononyl phthalate +Diisodecyl phthalate (DINP +DIDP)	ND	0.20	9
Diallyl phthalate (DAP)	ND	0.01	0.01
Di-n-octyl phthalate+Di-n-Decyl phthalate (DNOP+DNDP)	ND	<0.01	5.0
Comment	PASS	---	---

**ND: Not Detected**

Test condition: Iso-octane at 20<sup>0</sup>C for 2 days

Test Item	Results (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	1		
Dibutyl phthalate (DBP)	ND	0.05	0.3
Benzylbutyl phthalate (BBP)	ND	0.05	30
Bis-(2-ethylhexyl) phthalate (DEHP)	ND	0.05	1.5
Diisononyl phthalate +Diisodecyl phthalate (DINP +DIDP)	ND	0.20	9
Diallyl phthalate (DAP)	ND	0.01	0.01
Di-n-octyl phthalate+Di-n-Decyl phthalate (DNOP+DNDP)	ND	<0.01	5.0
Comment	PASS	---	---

**ND: Not Detected**

b) Specific Migration of Primary Aromatic Amine Method: Sample preparation in 3% acetic acid (w/v) in aqueous solution at 40°C for 10 days with reference to EN 13130-1:2004; followed by analysis with reference to DIN 55610:1986

Test Item	Results (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	1		
Specific migration of Aromatic Amine	ND	0.002	0.01
Comment	PASS	---	---

**ND: Not Detected**

2 European Commission regulation 1985/2005/EC.

Epoxy Coating-Specific Migration of BADGE, BADGE Derivatives, BFDGE and NOGE

Method: Sample preparation in Distilled water at 40° C for 10 days with reference to EN 15136:2006 followed by analysis using Liquid Chromatography- Mass Spectrometry (LC-MS )

<b>Spectrometry (LC-MS).</b>			
Test Item	Results	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	1.0		
Bisphenol A diglycidyl ether (BADGE)	ND	0.6	9 ( total )
Bisphenol A bis(2,3-dihydroxypropyl) ether (BADGE.H2O)			
Bisphenol A bis(2,3-dihydroxypropyl) ether(BADGE.2H2O)			
Bisphenol A (3-chloro-2-hydroxypropyl)-glycidyl ether (BADGE.HCl)	ND	0.6	1( total )
Bisphenol A (3-chloro-2-hydroxypropyl)-2,3-dihydroxypropyl) ether (BADGE.H2O.HCl)			
Bisphenol A bis(3-chloro-2-hydroxypropyl) ether (BADGE.2HCl)			
Bis(4-glycidyloxyphenyl)methane (BFDGE)	ND	0.2	Prohibited
Novolac glycidyl ether (NOGE)	ND	0.2	Prohibited
Comment	PASS	---	---

**ND: Not Detected**

No monomers is being used which comes under control of specific migration limit. Not applicable.

**Dual Use additive: Jindal Poly film OPP grade film does not contain any dual use additives subject to restrictions in food.**

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**This document is valid for two years from the date of issue.**

**Jindal Poly Films Limited**  
**28 - KM, Stone, Nashik - Igatpuri Road,**  
**Village : Mundegaon, Maharashtra**  
**Phone : + 91 2553 229100**  
**Fax : + 91 2553 229200**

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