Indam
Analisi studi e ricerche applicate
al settore ambientale e controllo qualità.

Indam Laboratori srl
25030 Castelmella (Brescia) - v. Redipuglia 33/39
tel. 030.2585203 (r.a.) - fax amm.ne 030.2786584
fax lab. 030.2585291 - fax ambiente 030.2584782
c.f. e p.iva IT 03379190980 - r.e.a. BS 529364
www.indam.it - info@indam.it

Test report n° **020552/13** of **31/07/2013**

Admittance n°: 5492

Sample:	**Golden cardboard**	Messrs:
Concerning:	**TIP 01**	**CARVAL SRL**
Sampled in:	**Concesio (BS)**	**VIA SANGERVASIO, 28**
Sample container:	**Paper bag**	**25062 CONCESIO (BS)**
Submitted by:	**Customer**	
Sampled by:	**Customer**	
Sampling method:	(°)	
Date of submission:	**21/05/2013**	
Date of analysis:	**28/06/2013**	
Date of ending analysis:	**30/07/2013**	
Notes:	**Material in contact with food: gold metallic polyethylenterephthalate film (PET GM)**	
Aspect:	/	
Required analysis:	**As indicated below**	

TESTS ON MATERIALS INTENDED FOR CONTACT WITH FOOD

Normative references

Italian Ministerial Decree of 21 March 1973 and subsequent amendments and additions – Commission Regulation (EU) No. 10/2011 of 14 January 2011

Sample description

The sample consists of a cardboard paired with gold metallic polyethylenterephthalate film (PET GM), with a rectangular base (about 22,3 x 13,5 cm) and raised edges. Customer declares that this test (TIP 01) is considered representative of the following articles:

- Rectangular gold tray "Milano" series
- Rectangular gold tray "Elite Plus" series
- Rounded gold tray
- Toothed rim gold dishes on 2000 g/sq.m
- Toothed rim gold dishes on 1200 g/sq.m
- Rectangular Profitterolles on 2000 g/sq.m
- Oval gold tray
- Toothed rim double-gold dishes on 2400 g/sq.m
- Rectangular Profitterolles on 1400 g/sq.m
- "Girasole" disks
- "Girasole" disks customized
- Toothed rim gold disks on 2400 g/sq.m
- Toothed rim gold disks on 2000 g/sq.m
- Gold disks on 1050 g/sq.m
- Gold disks on 700 g/sq.m
- Gold disks on 1200 g/sq.m
- Gold disks on 1700 g/sq.m
- Double-gold disks on 2400 g/sq.m
- Gold disks on 2000 g/sq.m
- Gold cardboard bars on 1050 g/sq.m
- Gold cardboard bars on 1400 g/sq.m
- Gold cardboard bars on 700 g/sq.m
- Gold glazed band
- Gold band
- Toothed rim double-gold cardboard bars on 2400 g/sq.m
- Chosen gold cardboard bars on 2000 g/sq.m
- Chosen gold cardboard bars on 2400 g/sq.m
- Gold cardboard bars "Semelles buches"
- Gold monoportions on 1050 g/sq.m
- Gold cardboard bars "Bûchettes"

After washing with distilled water and careful drying, the sample was subjected to the following tests for materials and articles intended to come into contact with foodstuffs.

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Analytical results

1 – OVERALL MIGRATION TEST

The sample was put in contact with food simulants water, ethanol 10% (v/v), acetic acid 3% (w/v) by filling for ten days at a temperature of 25 °C and with the food stimulant E poly(oxide 2,6-diphenyl-p-phenylene) for ten days at 40 °C. Contact modes described above are sach as to reproduce the worst foreseeable conditions of use (storage under conditions of ambient temperature, refrigeration and freezing; for E simulant It is also includes the heating at 70 °C for a period of up to two hours or up to 100 °C for 15 minutes).
The surface of the sample placed in contact about 455 cm^2, adopting a surface/volume of simulant ratio equal to 1,8. For E simulant have been adopted instead contact conditions specified in the method of analysis indicated, or rather 4 g of poly(oxide of 2,6-diphenyl-p-phenylene) per dm^2 of plastic material.

	Simulant	Analysis method	M.U.	Result Test 1	Result Test 2	Max value	Evaluation
/	Distilled water	MD 21/03/1973 Att. IV Sec. 1 and s.a.a + Reg. CEE/UE n° 10 of 14/01/2011 *	mg/dm^2	< 1,0	< 1,0	10	TEST PASSED
A	Ethanol 10%	MD 21/03/1973 Att. IV Sec. 1 and s.a.a + Reg. CEE/UE n° 10 of 14/01/2011 *	mg/dm^2	< 1,0	< 1,0	10	TEST PASSED
B	Acetic acid 3%	MD 21/03/1973 Att. IV Sec. 1 and s.a.a + Reg. CEE/UE n° 10 of 14/01/2011 *	mg/dm^2	< 1,0	< 1,0	10	TEST PASSED
D2	Cooking oil	MD 21/03/1973 Att. IV Sec. 1 and s.a.a + Reg. CEE/UE n° 10 of 14/01/2011 *	mg/dm^2	(^)	(^)	10	TEST PASSED
E	poly(oxide of 2,6-diphenyl-p-phenylene)	UNI EN 1186-13:1999 *	mg/dm^2	< 1,0	4,5	10	TEST PASSED

(^) Not determinable, because the execution of the test under the specified conditions produces physical or other changes in the test specimen.
Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011

2 – SPECIFIC MIGRATION TEST

Determinations were performed on the aqueous food simulant obtained by overall migration test (simulants, conditions of time and temperature, sample test).

Isophthalic acid

	Simulant	Analysis method	M.U.	Result Test 1	Result Test 2	Max value	Evaluation
/	Distilled water	HPLC-UV *	mg/kg	< 0,1	< 0,1	5	TEST PASSED
A	Ethanol 10%	HPLC-UV *	mg/kg	< 0,1	< 0,1	5	TEST PASSED
B	Acetic acid 3%	HPLC-UV *	mg/kg	< 0,1	< 0,1	5	TEST PASSED
E	poly(oxide of 2,6-diphenyl-p-phenylene)	HPLC-UV *	mg/kg	< 0,1	< 0,1	5	TEST PASSED

Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011

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Terephthalic acid

	Simulant	Analysis method	M.U.	Result Test 1	Result Test 2	Max value	Evaluation
/	Distilled water	HPLC-UV *	mg/kg	< 0,1	< 0,1	7,5	TEST PASSED
A	Ethanol 10%	HPLC-UV *	mg/kg	< 0,1	< 0,1	7,5	TEST PASSED
B	Acetic acid 3%	HPLC-UV *	mg/kg	< 0,1	< 0,1	7,5	TEST PASSED
E	poly(oxide of 2,6-diphenyl-p-phenylene)	HPLC-UV *	mg/kg	< 0,1	< 0,1	7,5	TEST PASSED

Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011

Diethylene glycol

	Simulant	Analysis method	M.U.	Result Test 1	Result Test 2	Max value	Evaluation
/	Distilled water	HRGC-FID *	mg/kg	< 6	< 6	30 (**)	TEST PASSED
A	Ethanol 10%	HRGC-FID *	mg/kg	< 6	< 6	30 (**)	TEST PASSED
B	Acetic acid 3%	HRGC-FID *	mg/kg	< 6	< 6	30 (**)	TEST PASSED
E	poly(oxide of 2,6-diphenyl-p-phenylene)	HRGC-FID *	mg/kg	< 6	< 6	30 (**)	TEST PASSED

Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011
(**) Expressed as Ethylene glycol

Acetaldehyde

	Simulant	Analysis method	M.U.	Result Test 1	Result Test 2	Max value	Evaluation
/	Distilled water	HPLC-UV *	mg/kg	< 0,1	< 0,1	6	TEST PASSED
A	Ethanol 10%	HPLC-UV *	mg/kg	< 0,1	< 0,1	6	TEST PASSED
B	Acetic acid 3%	HPLC-UV *	mg/kg	< 0,1	< 0,1	6	TEST PASSED
E	poly(oxide of 2,6-diphenyl-p-phenylene)	HPLC-UV *	mg/kg	< 0,1	< 0,1	6	TEST PASSED

Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011

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Antimony (Sb)

	Simulant	Analysis method	M.U.	Result Test 1	Result Test 2	Max value	Evaluation
/	Distilled water	ICP-MS *	mg/kg	< 0,001	< 0,001	0,04	TEST PASSED
A	Ethanol 10%	ICP-MS *	mg/kg	< 0,001	< 0,001	0,04	TEST PASSED
B	Acetic acid 3%	ICP-MS *	mg/kg	< 0,001	< 0,001	0,04	TEST PASSED
E	poly(oxide of 2,6-diphenyl-p-phenylene)	ICP-MS *	mg/kg	< 0,001	< 0,001	0,04	TEST PASSED

Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011

3 – COLOUR MIGRATION TEST

The aqueous food simulant obtained by overall migration test was subjected to the spectrophotometric examination between 400 and 750 nm.

	Simulant	Analysis method	M.U.	Optical transmission between 400 and 750 nm (minimum value)	Limit	Evaluation
/	Distilled water	MD 21/03/1973 Att. IV Sec. VI and s.a.a. *	%	99,2	> 95	TEST PASSED
A	Ethanol 10%	MD 21/03/1973 Att. IV Sec. VI and s.a.a. *	%	99,0	> 95	TEST PASSED
B	Acetic acid 3%	MD 21/03/1973 Att. IV Sec. VI and s.a.a. *	%	99,5	> 95	TEST PASSED
D2	Cooking oil	MD 21/03/1973 Att. IV Sec. VI and s.a.a. *	%	(^)	> 95	/

(^) Not determinable, because the execution of the test under the specified conditions produces physical or other changes in the test specimen.
Limit: fixed in MD 21/03/1973 Att. IV Sec. VI and s.a.a.

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4 – DETERMINATION OF PHTHALATE

The contents of phthalate was determined directly in a film in metallic gold polyethylene terephthalate (PET GM).

Parametro	Metodo di analisi	U.M.	Risultato	Valore massimo	Valutazione
Dimethylphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,1(**)	TEST PASSED
Diethylphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,1(**)	TEST PASSED
Dibutylphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,05(***)	TEST PASSED
Butylbenzylphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,1(***)	TEST PASSED
Diethylhexylphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,1(***)	TEST PASSED
Dioctylphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,1(**)	TEST PASSED
Diisononilphthalate	CPSC-CH-C1001-09.3 April 1, 2010 *	% w/w	< 0,01	0,1(**)	TEST PASSED

(**)Maximum value: fixed in Directive 2005/84/EC of the European Parliament and of the Council (phtalates in toys and chilcare articles).
(***) Maximum value: fixed in Commission Regulation EEC/EU n° 10 of 14/01/2011, All. 1 in "Restrictions and specification".

Lab manager

ORDINE PROV. DEI CHIMICI - BRESCIA - Albo Professionale
Dott. PAOLA MAZZOLA n° 140

Technical manager
dr. Umberto Vergine

ORDINE PROV. DEI CHIMICI BRESCIA - Albo Professionale
Dott. Umberto Vergine N. 117

* The analysis marked whit the asterisk do not re-enter in the accreditation released by Accredia – l'Ente Italiano di Accreditamento to this laboratory.
(°) Sampling not performed by INDAM technical staff is not subject to accreditation.

Test report complies to the law all intents and purposes, ex R.D. 01/03/28, Law n° 679 – 19/07/58 art. 16.
Analytical results are reported exclusively to the examined sample and to all the parameters requested by the purchaser. Any possible information reported on the heading are declared by the subject who presented the sample and he's responsible as far as the delivery to the laboratory. The residual sample of not perishable solid material is preserved for two months, the liquid sample for one month from the test report's date; any possible counter sample must be identify by the laboratory and the purchaser. Test report is issued in an only one copy and doesn't be partially reproduced, except written approval of the laboratory. A copy of the test report is preserved for five years.

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