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Confidential to:
Polywood Innovations Ltd

[Redacted contact information]

Report on:
Overall migration & specific migration testing from food contact materials

Report number: AC/REP/153428/49.1* ♦ Issue date: 9th July 2021

* Report reissued with specific migration results added

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[DC: R-AC-9-5-51 : 03/17 (1) : R/DSL]



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SAMPLE INFORMATION

Company : Polywood Innovations Ltd
Product description : Polywood 106 / 1000ml Bottle H.L.
Campden reference : AC/153428/49
Date received : 6th May 2021
Condition : Free from any apparent or obvious physical defects
Storage : Ambient
Date of analysis : 6th May – 8th July 2021
Test data : NM/A9 pg 15

METHODS AND REFERENCES

Testing programs for overall migration are devised in accordance with the BS EN ISO 1186 series of standards and Commission Regulation No. 10/2011 as amended.

Method TES-AC-501 is based on BS EN 1186:2002 parts 3, 5, 7, 9 and 14.

Global (overall) migration from packaging materials into aqueous food simulants and substitute fatty food simulants by total immersion, single side contact by cell technique, single side contact by pouch technique and by article filling technique.

Four test specimens are used in each overall migration test performed with food stimulants to ensure that a minimum of three valid test results are obtained.

CALCULATION OF RESULTS

Where a test result for a replicate is found to be less than the limit of detection the calculated numerical value, *M* (as defined in clause 3.6.1 of BS EN 1186-3:2002 for aqueous testing and clause 8.1 in BS EN 1186-2:2002 for olive oil testing) and not the limit of detection is used for that replicate for the purpose of calculating the mean overall migration result. Where the calculated numerical value is negative, a value of zero is used for purposes of calculating the mean.

Concerning specific migration results, in accordance with commission regulation 10/2011 the specific gravity of all simulants conventionally is assumed to be '1'. 1kg of food simulant therefore is taken to occupy the volume of 1L. The SML is set with the assumption that 6.0dm² of surface area comes into contact with 1kg of food. Results are adjusted for 6.0dm²/kg.

OVERALL MIGRATION: TEST CONDITIONS & RESULTS

Method : TES-AC-501 (UKAS accredited)
 Contact time/temp : 10 days @ 40°C
 Overall migration limit : 10 mg/dm²

Simulant	Test results mg/dm ²				Mean test result mg/dm ²	Technique	Contact area
10% (v/v) Ethanol in an aqueous solution	2.50	1.90	1.80	1.50	1.9	Article Fill	1 dm ²

SPECIFIC MIGRATION: TEST CONDITIONS & RESULTS

Method : TES-AC-812 (Non-UKAS)
 Simulant : 3% (w/v) acetic acid in an aqueous solution
 Contact time/temp : 10 days @ 60°C
 Contact area : 1 dm²

Compound	Result (mg/kg)			Mean Migration (mg/kg)	SML (mg/kg)
Cadmium	<0.01	<0.01	<0.01	<0.01	ND (<0.002 LOD)
Chromium	<0.01	<0.01	<0.01	<0.01	ND
Lead	<0.01	<0.01	<0.01	<0.01	0.01
Mercury	<0.01	<0.01	<0.01	<0.01	ND
m-phenylenediamine	<0.01	<0.01	<0.01	<0.01	0.01
o-anisidine	<0.01	<0.01	<0.01	<0.01	0.01
o-tolidine	<0.01	<0.01	<0.01	<0.01	0.01
4,4'-Methylenebis-2-methylaniline	<0.01	<0.01	<0.01	<0.01	0.01
Dianisidine	<0.01	<0.01	<0.01	<0.01	0.01
4,4'-oxydianiline	<0.01	<0.01	<0.01	<0.01	0.01
3-chloro-4-methoxyaniline	<0.01	<0.01	<0.01	<0.01	0.01
2-methyl-phenylenediamine	<0.01	<0.01	<0.01	<0.01	0.01
2,4-diaminoanisole	<0.01	<0.01	<0.01	<0.01	0.01
2-methoxy-5-methylaniline	<0.01	<0.01	<0.01	<0.01	0.01
4,4'-diaminodiphenylsulphide	<0.01	<0.01	<0.01	<0.01	0.01
4-chloroaniline	<0.01	<0.01	<0.01	<0.01	0.01
3-amino-4-methoxybenzanilide	<0.01	<0.01	<0.01	<0.01	0.01
2-methoxy-4-nitroaniline	<0.01	<0.01	<0.01	<0.01	0.01
4,4'-MDA	<0.01	<0.01	<0.01	<0.01	0.01
4-aminoazobenzene	<0.01	<0.01	<0.01	<0.01	0.01
4,4'-methylene-bis-2-chloroaniline	<0.01	<0.01	<0.01	<0.01	0.01
o-aminoazotoluene	<0.01	<0.01	<0.01	<0.01	0.01
aniline	<0.01	<0.01	<0.01	<0.01	0.01
4-chloro-2-methylaniline	<0.01	<0.01	<0.01	<0.01	0.01

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Method : TES-AC-812 (Non-UKAS)
 Simulant : 10% (v/v) Ethanol in an aqueous solution
 Contact time/temp : 10 days @ 60°C
 Contact area : 1 dm²

Compound	Result (mg/kg)			Mean Migration (mg/kg)	SML (mg/kg)
1-Hexene	<0.10	<0.10	<0.10	<0.10	3

Method : TES-AC-812 (Non-UKAS)
 Simulant : Tenax (Extraction into Ethanol)
 Contact time/temp : 10 days @ 60°C
 Contact area : 1 dm²

Compound	Result (mg/kg)			Mean Migration (mg/kg)	SML (mg/kg)
1-Hexene	<0.10	<0.10	<0.10	<0.10	3

The results are below the overall and specific migration limits stated within European Commission Regulation 10/2011 (as amended) for plastic materials and articles intended for contact with food.

The material was extracted with 3% (w/v) acetic acid solution for measuring the specific migration of metals and primary aromatic amines (PAAs); this simulant is the most extractive for these compounds and therefore these results represent worst case scenario. These results demonstrate the material will also be suitable for contact with dry foods with respect to these metals and PAAs