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From: Behrendt
pf

REPORT

Page 1 of 3 pages

Client: Star Foils S.r.l.
Via Comunale delle Murelle 13
80146 Napoli
Italy

Date of order: 8 May 2015

Receipt of sample material: 11 May 2015

Origin of sample material: From the client

Purpose: Partial analysis of one thermal transfer ribbon for its compliance with the demands on food contact materials


(Dr. Derra)


(Behrendt)
Officially certified
and authorized food
chemist

The present report refers exclusively to the samples as laid out therein. Information and statistical data on the results can be obtained on request.

Sample Material

For analysis the following sample material was in hand:

Sample : A10, premium wax

Carrying out of the Tests

Examination period: 26 May 2015 to 10 July 2015

1. Determination of the Migration into Tenax (Modified Polyphenylene Oxide) *

The determination was carried out according to the methods for the "Examination of consumer goods" corresponding to the directives B 80.30, 1 to 3 (EG) of the Official Collection of Analytical Methods according to § 64 LFGB and according to the rules of the series of standards EN 1186 and EN 13130. The choice of the test simulants as well as the contact conditions was performed according to the requirements of annex III and V of Commission Regulation (EU) No 10/2011 on "Plastic materials and articles intended to come into contact with food".

Conditions: 10 days at 40 °C

Testing procedure: one-sided contact

GC-MS-Screening: The volatile components adsorbed onto tenax were extracted with diethyl ether and summarized according to SOP 160.200 by means of gas chromatography and mass spectrometric detection using deuterated nonadecane (C₁₉) as an internal standard. For the identification of further signals in the chromatogram, a commercially available mass spectra library was used and, if not stated differently, a semiquantitative estimation of the signals was performed against the internal standard.

Result:

Sample :

Sum of the volatile components not determinable < 0.1 mg/dm²

The following compounds could be identified:

Sum of alkylbenzenes	0.015	mg/dm ²
Sum of alkanes	0.016	mg/dm ²

2. Determination of Volatile Organic Compounds (Headspace-GC/MS-Screening) *

The determination was performed according to SOP 160.200 by means of head space chromatography and mass spectrometric detection after a storage of 60 minutes at 80 °C. The air space above the sample material was examined for volatile components and was identified against a spectrum library and additionally according to the retention times.

Besides, it was tested for the listed solvents on the basis of the standard EN 13628-1 for the examination of flexible packaging materials as well as for volatile monomers. If not stated differently, a semiquantitative estimation of the signals was performed against the internal standard. trichlorotrifluoroethane.

Result:

Sample :

Evaluation of direct quantified compounds:

Ethanol	not determinable	<	0.2	mg/m ²
Isopropanol	not determinable	<	0.2	mg/m ²
Hexane	not determinable	<	0.2	mg/m ²
Ethyl acetate	not determinable	<	0.2	mg/m ²
1-Ethoxy-2-propanol	not determinable	<	0.2	mg/m ²
Butyl acetate	not determinable	<	0.2	mg/m ²
Hexanal	not determinable	<	0.2	mg/m ²
Cyclohexanone	not determinable	<	0.2	mg/m ²
Benzene	not determinable	<	0.04	mg/m ²
Toluene			0.65	mg/m ²

The following compounds were not determinable in the corresponding chromatograms:

Residual solvents:

Acetone	<	0.2	mg/m ²
2-Butanone	<	0.2	mg/m ²
1-Butanol	<	0.2	mg/m ²
Isobutanol	<	0.2	mg/m ²
Isopropyl acetate	<	0.2	mg/m ²
Methanol	<	0.2	mg/m ²
1-Methoxy-2-propanol	<	0.2	mg/m ²
Methyl acetate	<	0.2	mg/m ²
Methyl-tert-butylether	<	0.2	mg/m ²
1-Propanol	<	0.2	mg/m ²

Monomers:

Butyl acrylate	<	0.01	mg/dm ²
Ethyl acrylate	<	0.01	mg/dm ²
2-Ethylhexylacrylate	<	0.01	mg/dm ²
Methyl acrylate	<	0.01	mg/dm ²
Butyl methacrylate	<	0.01	mg/dm ²
Isobutyl methacrylate	<	0.01	mg/dm ²
Methyl methacrylate	<	0.01	mg/dm ²
Styrene	<	0.01	mg/dm ²
alpha methyl styrene	<	0.01	mg/dm ²

Aromatics:

Ethylbenzene	<	0.04	mg/m ²
Xylene	<	0.04	mg/m ²

The accreditation applies to the methods marked with * in the test report (Register no. D-PL-14160-01-01 and D-PL-14160-01-02).

End of report