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Aschaffenburg, 14 November 2018

From: Dr. Dr-hu
Authorized by: Burkardt

REPORT

Order No.: 15253/2 **Page 1 of 4 pages**

Client: NorCoat Nord AB
Öjungsvägen 20 E
828 34 Edsbyn
Sweden

Date of order: 19 September 2018

Receipt of sample material: 27 September 2018

Origin of sample material: From the client

Purpose: Analysis of adhesive grades for the compliance with the demands on food contact materials

(Dr. Derra)
Managing Director

(Burkardt)
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.

DAkkS
Deutsche
Akkreditierungsstelle
D-PL-14160-01-01
D-PL-14160-01-02

Sample Material

For analysis the following sample material was in hand:

Sample 1:	NorDry Standard
Sample 2:	NorDry LASER
Sample 3:	NorDry STAMP

Before carrying out the tests the release paper was drawn off and discarded.

Carrying out of the Tests

Examination period: 2 October 2018 to 30 October 2018

1. Determination of the Overall Migration *

The determination was performed according to the series of standards EN 1186:2002-07 and the EN 13130-1:2004-08. If required, the CEN/TS 14234:2003-01 as well as CEN/TS 14235:2003-01 were considered.

The test simulants as well as the contact conditions were chosen in accordance with the requirements of annex III and V of Regulation (EU) No 10/2011.

If not stated differently, the results are given as average values of determinations in duplicate.

Conditions: 10 minutes at 40 °C

Test simulants: water

Testing procedure: total immersion

Result:

Sample 1:	water:	120	mg/dm²
Sample 2:	water:	140	mg/dm²
Sample 3:	water:	80	mg/dm²

2. Determination of the Specific Migration

The determination was performed in duplicate in the same food simulants after a storage period under conditions indicated above and subsequently mentioned.

Conditions: 24 hours at 40 °C

Test simulants: vegetable oil (food simulant D2)

Testing procedure: total immersion

2.1. GCMS-Screening

The determination was performed according to SOP 160.200 by means of GCMS. Further signals in the chromatogram were evaluated semi-quantitatively using deuterated nonadecane as internal standard; for their identification a commercially available mass spectra library was used.

Result:

Water extracted by DCM

Sample 1:

The following compounds could be identified:

Retention-time [min]	Identification according to the mass spectra library	Quantity estimated against the internal standard	
		Water	
10.5	Diethyleneglycoladipate	0.4	mg/l

Sample 2:

The following compounds could be identified:

Retention-time [min]	Identification according to the mass spectra library	Quantity estimated against the internal standard	
		Water	
10.5	Diethyleneglycoladipate	0.4	mg/l
18.7	Diethylene glycol adipate dimer	0.01	mg/l

Sample 3:

The following compounds could be identified:

Retention-time [min]	Identification according to the mass spectra library	Quantity estimated against the internal standard	
		Water	
10.5	Diethyleneglycoladipate	0.24	mg/l

2.2. Olefins *

The determination was performed according to SOP 162.200 by means of Headspace GC-MS.

Result:

Oil:

Samples 1 – 3:

Isoprene	not determinable	<	0.03	mg/kg oil
4-Methyl-1-penten	not determinable	<	0.03	mg/kg oil
Norboren	not determinable	<	0.03	mg/kg oil
THF	not determinable	<	0.3	mg/kg oil
1-Penten	not determinable	<	0.2	mg/kg oil
1-Hexen	not determinable	<	0.25	mg/kg oil
Vinylacetate	not determinable	<	0.1	mg/kg oil
1-Octen	not determinable	<	1.0	mg/kg oil

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