

**Labtest Portugal -Testes Laboratoriais, Lda**  
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Attn: Albino Costa

Fürth, 19.02.2016

## Test report No FUFDCP2016-00346

General note: Copying this test report partially is permitted only in agreement with the contracted lab. The tests results refer only to the tested item. This report consists of 4 page(s). Test methods indicated with \* are not listed in our accreditation certificate.\*\*Subcontract

Sample description: **Polypropylene Twine - White**  
**OT 20395 - 1**  
**Plastic**

Sample entry: 13.01.2016 // date of confirmation: 21.01.2016  
Testing period: 21.01. – 19.02.2016  
Sampling through client  
Head of analytical Department: Christoph Dorsch  
Testing acc. to client's request.



## Test results

### 1. Sensory testing

Method: DIN 10955\*

Testing conditions: Water <sub>demin</sub> (10 d / 40°C)

Tester: 6 test persons

#### Evaluation scale:

0 = no aberration, neutral

1 = very slight aberration, barely perceivable

2 = slight aberration

3 = significant aberration

4 = strong aberration

Requirement: no significant deterioration (Limit: 2.5)

#### Single results:

Sample	Appearance	Odour	Taste
Tester 1	0	2.5 (slightly musty odour)	2 (taste of plastics)
Tester 2	0	3 (significantly sweet, aromatic odour)	3.5 (significantly sweet, aromatic taste)
Tester 3	0	2.5 (slight odour of PAH)	3 (significant taste of PAH)
Tester 4	0	3 (significantly sweet odour)	2 (slightly soapy taste)
Tester 5	0	3 (significantly musty odour)	3 (significantly bitter taste)
Tester 6	0	2.5 (slightly odour of herbs)	3 (significantly bitter taste, taste of PAH)
<b>Evaluation (average)</b>	0 Neutral	<b>2.75</b> Significant aberration	<b>2.75</b> Significant aberration

**Status: inconclusive**

## 2. Physical and Chemical Testing

### 2.1. Global migration

Method: DIN EN 1186

Limit of quantification: 6.0 mg/kg; n.d. = not determinable

Inaccuracy of measurement:  $\pm 12$  mg/kg

Requirement max. 60 mg/kg

#### a) Testing conditions: Acetic acid 3% (10 d / 40°C), cut, total immersion

Sample	Result
Global migration mg/kg	11
Status	passed

#### b) Testing conditions: Ethanol 10% (10 d / 40°C), cut, total immersion

Sample	Result
Global migration mg/kg	10
Status	passed

#### c) Testing conditions: Ethanol 95% (10 d / 40°C), cut, total immersion

Sample	Result
Global migration mg/kg	7.0
Status	passed

### 2.2. Total content of cadmium and lead

Method: microwave digestion HNO<sub>3</sub>/H<sub>2</sub>O<sub>2</sub> / DIN EN ISO 11885 (E22) 2009-09

Limit of quantification: Lead 10 mg/kg, Cadmium 5 mg/kg

n.d. = not determinable

Sample	Result
Cadmium mg/kg	n.d.
Lead mg/kg	n.d.
Status	passed

Requirement: Cadmium max. 100 mg/kg  
Lead max. 100 mg/kg (GMP-limit)

### 2.3. Polycyclic aromatic hydrocarbons according to US-EPA + 2 EFSA PAH in mg/kg

Test method: ZEK 01.4-08 (2011-11) complies with AfPS GS 2014:01 (2014-08)

Limit of quantification: 0.10 mg/kg n.d. = not determinable

Substances	CAS-No	Result
1 Naphthalene	91-20-3	n.d.
2 Acenaphthylene	208-96-8	n.d.
3 Acenaphthen	83-32-9	n.d.
4 Fluorene	86-73-7	n.d.
5 Phenanthrene	85-01-8	n.d.
6 Anthracene	120-12-7	n.d.
7 Fluoranthene	206-44-0	n.d.
8 Pyrene	129-00-0	n.d.
9 Benzo(a)anthracene	56-55-3	n.d.
10 Chrysene	218-01-9	n.d.
11 Benzo(b)fluoranthene + 12 Benzo(j)fluoranthene	205-99-2 + 205-82-3	n.d.
13 Benzo(k)fluoranthene	207-08-9	n.d.
14 Benzo(a)pyrene	50-32-8	n.d.
15 Indeno(1,2,3-cd)pyrene	193-39-5	n.d.
16 Dibenzo(a,h)anthracene	53-70-3	n.d.
17 Benzo(ghi)perylene	191-24-2	n.d.
18 Benzo(e)pyrene	192-97-2	n.d.
<b>sum</b>		<b>n.d.</b>

Intertek Consumer Goods GmbH

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