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Report

2016L22088

Date of report Your reference

Type of order

Client

07. June 2016 / 15:30 PlasticsTorner_04052016_TR / Order of 06.05.2016 General tests PLASTICS TORNER S.L., Jordi Guarda Torner

Report Sample

2016L22088 / 1 PLA Drinking Staws

Assessment

Based on the assumed surface-to-volume ratio, the results of the analytics as described are in compliance with the Commission Regulation (EU) No 10/2011 and the Swiss Regulation on Food Contact Materials.

References

- EN 1186 Materials and articles in contact with foodstuffs Plastics, May 2002
- Swiss Regulation on Food Contact Materials SR 817.023.21 (Bedarfsgegenstände VO) of 23.11.05, updated 01.04.2013
- Commission Regulation (EU) No 10/2011 of 14.01.2011, as amended by No 321/2011 (01.04.2011), No 1282/2011 (28.11.2011), No 1183/2012 (30.11.2012), No 202/2014 (03.03.2014) and No 2015/174 (05.02.2015)

- EN 1230-2:2010-02; Paper and board intended to come into contact with foodstuffs - Sensory analysis - Part 2: Off-flavour (taint)

- DIN 10955 Sensory evaluation (Sensorische Prüfungen Prüfung von Packstoffen und Packmitteln für Lebensmittel), 2004
- Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles (Chemical Risk Reduction Ordinance, ORRChem, SR 814.81) of 18 May 2005 (*applicable legal document in German: Status as of 1 January 2016*)

- European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste and amendments

Experimental conditions will be given on request. The results are valid for the listed samples only. It is not allowed to use a shortened version of this report nor parts of it. Our general conditions of business apply (www.sqts.ch).





Chemical Analysis

<u>EU - Migration</u> The migration was set-up according to Commission Regulation (EU) No 10/2011 and customer instructions. The sample material was exposed to the simulants as follows:

Migration preparation:

- total immersion, cut

- Overall migration and Specific Migration:

--- simulant B: 3 % acetic acid, 2 h / 40 °C

--- simulant D1: 50 % ethanol, 2 h / 40 °C

The migration was performed according to EN 1186.

Heavy Metals

The sample was analysed for the heavy metals lead, cadmium, mercury and chromium by X-ray fluorescence spectroscopy (XRF) in accordance with the ORRChem and the Directive 94/62/EC.

GC-MS Screening

After concentrating, the 50 % ethanol migration solution was analysed using the GC-QTOF-MS/FID screening method. All relevant substances were compared with the NIST library and our internal library and calculated with the added internal standards.

<u>Sensory Evaluation: Off-Flavour of a Test Food by Multi-Comparison Test (Simple Sensory Evaluation)</u> The test was carried out in accordance with EN 1230-2 and DIN 10955 and in accordance with the Swiss Regulation.

The sample material was exposed to the test food. The ratio was 1 piece with 100 g test food. The test food was in direct contact with the sample material.

The following side was facing the test food: - total immersion, cut

The test food was: - tap water

Storage was performed in a closed glass container under the following conditions: - 2 h / 40 °C (according to customer)

As a blank, the same test food was stored in the same way, but without sample material.

The sensory test was done with 6 testers.

Each tester received one portion each of sample and blank. The testers knew which one was the sample and which was the blank. The test was carried out as simple comparison test between sample and blank. Both odour and taste of the test food were evaluated.

Results

Basis of Calculation

The conversion of the measured values to foodstuff is based on the following surface-to-volume ratio (S/V). For any other S/V the resulting migration values are different which might lead to another general assessment of the sample.

Assumed S/V: 1 piece / 0.2 kg food

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EU - Overall Migration

The limits are 10 mg/dm² and 60 mg/kg food according to Regulation (EU) No 10/2011 and the Swiss Regulation on Food Contact Materials. The following deviations are tolerated: For all simulants except D2: $10 \pm 2 \text{ mg/dm}^2$ and $60 \pm 12 \text{ mg/kg}$ food For simulant D2 (olive oil): $10 \pm 3 \text{ mg/dm}^2$ and $60 \pm 20 \text{ mg/kg}$ food

The overall migration values obtained with the tested simulants are below the limit.

Heavy Metals

No elevated amounts of lead, cadmium, mercury and chromium were detectable. The group limit of 100 mg/kg material is not exceeded.

In this regard, the present sample fulfils the requirements on packaging and packaging waste of the ORRChem and the Directive 94/62/EC.

GC-MS Screening

After subtracting the solvent blank, no substances > 0.010 mg/kg food (= 10 ppb) were detected in the GC-QTOF-MS/FID screening. In this case, the limit of quantification is 0.0017 mg/piece and 0.0085 mg/kg food.

Sensory Evaluation: Off-Flavour of a Test Food by Multi-Comparison Test (Simple Sensory Evaluation) The sensory evaluation showed that the sample did not perceptibly influence the odour and did not perceptibly influence the taste of the test food.

The grading of the odour or taste difference is based on a scale from 0 to 4. Values > 2 are considered as deviant. 0 - not perceptible | 1 - just perceptible | 2 - moderate | 3 - distinct | 4 - strong

The sensory evaluation was carried out in May 2016 in Dietikon (ZH), Switzerland.

Report released by: , Technical Manager

This report is signed electronically and therefore valid.

Mr Thomas Gude, phone number (direct) +41 58 577 10 80



Sample report 2016L22088/1

Designation Amount Identification Received on Packing PLA Drinking Staws Straws PLA Drinking Staws 17/05/2016 bag

Migration / Extraction			
Parameter Method 2 h / 40 °C	Result Units	Indic. Value	limit of quant.
- Overall migration 3 % acetic acid LMPMET0705	<1 mg/piece		LOQ: 1
- Overall migration 3 % acetic acid LMPMET0705	<5 mg/kg food	60	LOQ: 5
- Overall migration 50 % ethanol	<1 mg/piece		LOQ: 1
- Overall migration 50 % ethanol	<5 mg/kg food	60	LOQ: 5
Metals / Elements			
_	De la de Hartes	limit volue	

Parameter Method	Result Units	limit value accord. to Swiss regul.	limit of quant.
direct analysis			
– Lead NHCMET097 (XRF)	< 20 mg/kg		LOQ: 20
– Cadmium NHCMET097 (XRF)	< 20 mg/kg		LOQ: 20
– Mercury NHCMET097 (XRF)	< 20 mg/kg		LOQ: 20
– Chromium NHCMET097 (XRF)	< 20 mg/kg		LOQ: 20
- Sum of Pb, Cd, Hg, Cr NHCMET097 (XRF)	< 80 mg/kg	100	LOQ: 80
Oracific substances			

Specific substances		
Parameter Method	Result Units	
50 % ethanol		
- Screening GC-QTOF-MS/FID FCMMET03SCR (GC-QTOF-MS/FID)	done	

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Sensory evaluation

Parameter Method Result Units

—2 h / 40 ℃

Sensory assessment with water (smell/taste) LMPMET0707(na) 0/0

Report released by: , Technical Manager







ALIMENTARY CONFORMANCE CERTIFICATE

■ 93.672.20.41 Ctra. Corbera Km. 0,5 Pol. Ind. Can Ma

aró C/ Tran

untana. 15 - 08756 la Palma (Barc

Commodity: DRINKING STRAWS

Item: CRCU250

We confirm that the above mentioned items from PLÀSTICS TORNER, S.L. under the VAT number B58801358 and RSI 39.04611/B and all the raw materials used in this production comply with food packaging requirements according to the (EU) No 10/2011 of 14 January 2011 on plastic material and articles to come in contact with food.

We also confirm that there are only virgin resin PP Polypropylene and PP and PE masterbatches for the production.

PLÀSTICS TORNER, S.L. Ctra. Corbera, Km. 0,5 Pol. Ind. Can Mascaró Tel. 93 672 03 46 08756 LA PALMA DE CERVELLÓ (Barcelona) Jordi Guarda Torner

Date: August 11, 2016