SGS INSTITUT FRESENIUS GmbH• Postfach 1261 • 65220 Taunusstein

DAkkS Deutsche Akkreditierungsstelle D-PL-14115-02-02

EURO STRAWS SE
Jindrisska 937/16
110 00 Praha 1
Czech Republic

Hung Vu Chi
Customer Service Consultant
Tel.: +49 6128 744-639, Fax:
Hung.VuCHI@sgs.com
Connectivity & Products
Non Food

Taunusstein, 28.05.2024

Test-report no. 6896103

Original Sample ID	Sample Description	Sample Receipt Date
240394653	Eurostraws - drinking straws	19/04/2024

6896103

General Information

SGS-Client´s ID	:	10008056
SGS-Customer-Order	:	6977586
Ordering date	:	18/04/2024
Testing period	:	25/04/2024 – 13/05/2024
Order No.	:	40000592
Testing scope	:	Test according to client's requirements

Assessment

Overall assessment	**pass**
The tested samples meet the requirements of LFGB and Regulation (EC) No. 1935/2004 in the tested items. Stability criteria according to Regulation (EU) No. 10/2011 are met.	

SGS INSTITUT FRESENIUS GmbH

This test report was electronically created and released:

	Date	Name		Function	Department
Created	28.05.2024	i. A.	Sabine Klemens	Customer Service Assistant	Connectivity & Products
Released	28.05.2024	i.A.	Hung Vu Chi	Customer Service Consultant	Connectivity & Products

Summary of results

Test	Result
sensory test	pass
overall migration	pass
Specific migration of metals according to Regulation (EU) No 10/2011	pass
PAH	pass
Plasticizers	pass
Nonylphenole	pass
Octylphenole	pass
Bisphenol A	pass
Short chain chlorinated paraffins (SCCP)	pass
Chlorinated Phenols	pass
wood preservatives screening	pass
Specific migration of formaldehyde	pass
specific migration of 1,4-butanediol (Ref. No: 13720/40580, CAS No: 110-63-4)*	pass

Note:

Conclusions on pass/fail are based on the test result from the actual sampling of the received sample(s).

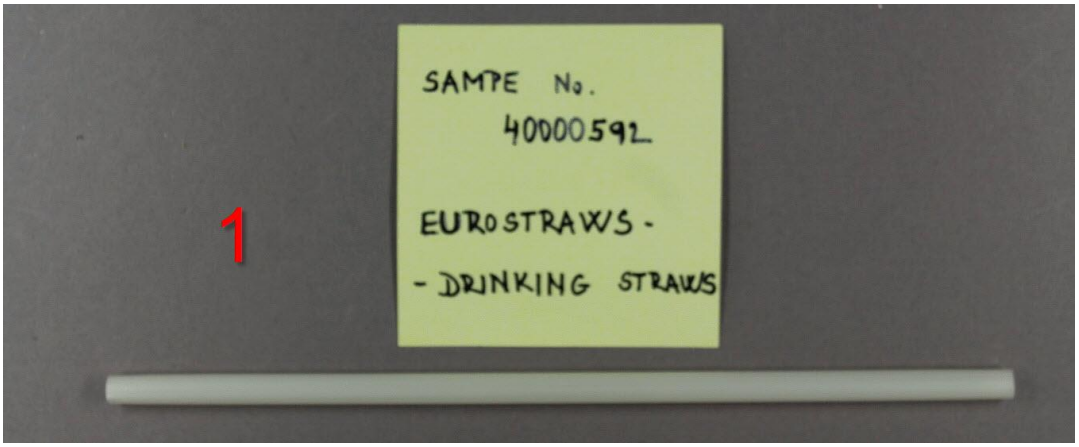
Conclusions are based on the relevant requirements; measurement uncertainties are not taken into account. Only results above the relevant detection limit are taken into account for the calculation of sums.

Test was conducted on composite of random parts of the item as per client's request and the test result is the overall result.

The composite sampling method is based on the client's special request and could be a modification from the testing standard.

For 2-composite mix with results exceeding one half of the relevant requirements or 3-composite mix with results exceeding one third of the relevant requirements, the composite sample may have the possibility of one or more components that can lead to a failure result, it is recommended to test on individual basis.

Photo documentation



List of sample parts

Comp. no	Component-ID	Sample-Description	Original Sample ID
1	-	Eurostraws - drinking straws	240394653

Analytical results

sensory test

Test Method
DIN 10955 2024-01

simulant	water
duration	2 hours
temperature	70 +/- 2°C
approach	1 part per immersion volume

Sample(s) /Subsample(s)	Unit	**Result 1**
		1st contact
Median Odour [1]		0.5
Median Taste [1]		2.5
Conclusion		Pass

Note:

Key:	0	=	no change
	1	=	very slight off odour / off-taste
	2	=	slight off- odour / off-taste
	3	=	distinct off- odour / off-taste
	4	=	strong off-odour/ off-taste

Requirement: With an assessment from 0 to 2.75 there is no, respectively a tolerable organoleptic impact existent in terms of Regulation (EC) No 1935/2004.

[1] Median up to 2.5 rounded at 0.5 grades

overall migration

Test Method
DIN EN 1186-3:2022

simulant	3% acetic acid
duration	2 hours
temperature	70 +/- 2°C
approach	10 dm²/L

Sample(s) /Subsample(s)	Unit	**Result 1**	**Result 1**	**Result 1**
		1st contact	2nd contact	3rd contact
overall migration	mg/dm²	10	3	1
Conclusion		Pass	Pass	Pass

Test Method
DIN EN 1186-3:2022

simulant	50% ethanol
duration	2 hours
temperature	60 +/- 2°C
approach	10 dm²/L

Sample(s) /Subsample(s)	Unit	**Result 1**	**Result 1**	**Result 1**
		1st contact	2nd contact	3rd contact
overall migration	mg/dm²	10	3	1
Conclusion		Pass	Pass	Pass

Note:

Requirement: max. 10 mg/dm² (Regulation (EU) No 10/2011)

analytical tolerance of the method (§ 64 LFGB B 80.30-3 (EG)):
2 mg/dm² for aqueous simulants
3 mg/dm² for olive oil and fat substitutes

Specific migration of metals according to Regulation (EU) No 10/2011

Test Method
ICP-MS (DIN EN ISO 17294-2 2017-01) resp. ICP-OES (DIN EN ISO 11885 2009-09) migration DIN 13130-1

simulant	3% acetic acid
duration	2 hours
temperature	70 +/- 2°C
approach	6 dm²/L

Sample(s) or Subsample(s)	Unit	**Result 1**	**Result 1**	**Result 1**
		1st contact	2nd contact	3rd contact
Aluminum (Al)	mg/kg	< 0.1	< 0.1	< 0.1
Arsenic (As)	mg/kg	< 0.01	< 0.01	< 0.01
Antimony (Sb)	mg/kg	< 0.01	< 0.01	< 0.01
Barium (Ba)	mg/kg	< 0.25	< 0.25	< 0.25
Lead (Pb)	mg/kg	< 0.005	< 0.005	< 0.005
Cadmium (Cd)	mg/kg	< 0.002	< 0.002	< 0.002
Chromium (Cr)	mg/kg	< 0.01	< 0.01	< 0.01
Cobalt (Co)	mg/kg	< 0.01	< 0.01	< 0.01
Iron (Fe)	mg/kg	< 5	< 5	< 5
Copper (Cu)	mg/kg	< 0.5	< 0.5	< 0.5
Lithium (Li)	mg/kg	< 0.1	< 0.1	< 0.1
Manganese (Mn)	mg/kg	< 0.1	< 0.1	< 0.1
Nickel (Ni)	mg/kg	0.01	< 0.01	< 0.01
Mercury (Hg)	mg/kg	< 0.005	< 0.005	< 0.005
Zinc (Zn)	mg/kg	< 0.5	< 0.5	< 0.5
Europium (Eu)	mg/kg	< 0.025	< 0.025	< 0.025
Gadolinium (Gd)	mg/kg	< 0.025	< 0.025	< 0.025
Lanthanum (La)	mg/kg	< 0.025	< 0.025	< 0.025
Terbium (Tb)	mg/kg	< 0.025	< 0.025	< 0.025
Conclusion		Pass	Pass	Pass

Note:

Requirement: Regulation (EU) No 10/2011

Aluminum	max. 1 mg/kg food simulant
Antimony	max. 0.04 mg/kg food simulant
Arsenic:	ND (< 0.01 mg/kg food simulant)
Barium:	max 1 mg/kg food simulant
Cadmium:	ND (< 0.002 mg/kg food simulant)
Chromium:	ND (< 0.01 mg/kg food simulant)
Cobalt:	max. 0.05 mg/kg food simulant
Copper:	max. 5 mg/kg food simulant
Iron:	max. 48 mg/kg food simulant
Lead:	ND (< 0.01 mg/kg food simulant)
Lithium:	max. 0.6 mg/kg food simulant
Manganese:	max .0.6 mg/kg food simulant
Mercury:	ND (< 0.01 mg/kg food simulant)
Nickel:	max. 0,02 mg/kg food simulant
Zinc:	max. 5 mg/kg food simulant
Sum Europium, Gadolinium, Lanthan, Terbium:	max. 0.05 mg/kg food simulant

PAH

Test Method
AfPS GS 2019:01, PAK-with use of GC-MS

Sample(s) /Subsample(s)	Unit	**Result 1**
Benzo[a]anthracene (56-55-3) [1]	mg/kg	< 0.2
Chrysene (218-01-9) [1]	mg/kg	< 0.2
Benzo[e]pyrene (192-97-2) [1]	mg/kg	< 0.2
Benzo[b]fluoranthene (205-99-2) [1]	mg/kg	< 0.2
Benzo[k]fluoranthene (207-08-9) [1]	mg/kg	< 0.2
Benzo[j]fluoranthene (205-82-3) [1]	mg/kg	< 0.2
Benzo[a]pyrene (50-32-8) [1]	mg/kg	< 0.2
Dibenzo[ah]anthracene (53-70-3) [1]	mg/kg	< 0.2
Conclusion EU-PAHs		Pass
Acenaphthylene (208-96-8)	mg/kg	< 0.2
Acenaphthene (83-32-9)	mg/kg	< 0.2
Fluorene (86-73-7)	mg/kg	< 0.2
Phenanthrene (85-01-8)	mg/kg	< 0.2
Anthracene (120-12-7)	mg/kg	< 0.2
Fluoranthene (206-44-0)	mg/kg	< 0.2
Pyrene (129-00-0)	mg/kg	< 0.2
Naphthalene (91-20-3)	mg/kg	< 0.2
Benzo[ghi]perylene (191-24-2)	mg/kg	< 0.2
Indeno[1,2,3-cd]pyrene (193-39-5)	mg/kg	< 0.2
Total 18 PAH [2]	mg/kg	-
Conclusion (per single substance)		Pass

Note:

Requirement: not listed in Regulation (EU) No 10/2011 (<0.2 mg/kg)

[1] PAH according to the Commission Regulation (EU) No 1272/2013 amending Annex XVII to Regulation (EC) No 1907/2006 effective

from December 27, 2015

[2] For the summation only results above the reporting limit are taken into account.

Plasticizers

Test Method
SOP M 889 2015-01, with use of GC-MS after extraction with toluene

Sample(s) /Subsample(s)	Unit	Result 1
Dibutyl phthalate (DBP) (84-74-2)	mg/kg	< 5.0
Benzyl butyl phthalate (BBP) (85-68-7)	mg/kg	< 5.0
Bis(2-ethylhexyl) phthalate (DEHP) (117-81-7)	mg/kg	< 5.0
Diisononyl phthalate (DINP) (28553-12-0) [1]	mg/kg	< 5.0
Di-n-octyl phthalate (DNOP) (117-84-0)	mg/kg	< 5.0
Diisodecyl phthalate (DIDP) (26761-40-0) [2]	mg/kg	< 5.0
Diisobutyl phthalate (DIBP) (84-69-5)	mg/kg	< 5.0
Di-C7-C11-(linear and branched)-alkyl phthalate (DHNUP) (68515-42-4)	mg/kg	< 5.0
Diisoheptyl phthalate (DIHP) (71888-89-6)	mg/kg	< 5.0
Dibutyl sebacate (DBS) (109-43-3)	mg/kg	< 5.0
Bis(2-ethylhexyl) adipate (DEHA) (103-23-1)	mg/kg	< 5.0
Dihexyl phthalate (branched and linear)(DHP) (68515-50-4)	mg/kg	< 5.0
Tri-n-butyl acetyl citrate (TBAC) (77-90-7)	mg/kg	< 5.0
Di-n-pentyl phthalate (DPP) (131-18-0)	mg/kg	< 5.0
Diisopentyl phthalate (DIPP) (605-50-5)	mg/kg	< 5.0
n-pentyl-isopentyl phthalate (PIPP) (776297-69-9)	mg/kg	< 5.0
Dipentyl phthalates (DPP, DIPP, PIPP) (84777-06-0)	mg/kg	< 5.0
Triethyl citrate (TEC) (77-93-0)	mg/kg	< 5.0
Diallyl phthalate (DAP) (131-17-9)	mg/kg	< 5.0
Bis(2-methoxyethyl) phthalate (DMEP) (117-82-8)	mg/kg	< 5.0
Dihexyl phthalate (DHP) (84-75-3)	mg/kg	< 5.0
Bis(2-ethylhexyl) terephthalate (DEHT) (6422-86-2)	mg/kg	< 5.0
Diisononyl cyclohexane-1,2-dicarboxylate (DINCH) (166412-78-8)	mg/kg	< 5.0
Conclusion		Pass

Note:

Requirement: Regulation (EU) No. 10/2011 (Material)

BBP	max. 0,1%
DEHP	max. 0,1%
DBP	max. 0,05%
DIDP	max. 0,1%
DINP	max. 0,1%

Additionally specific migration limits are defined. If one or more substance(s) are observed in material it should be clarified if migration limits are met.

[1] phthalic acid, diesters with primary, saturated C 8 -C 10 branched alcohols, more than 60 % C 9

[2] phthalic acid, diesters with primary, saturated C 9 -C 11 alcohols more than 90 % C 10

Nonylphenole

Test Method
SOP M 0889 2015-01, with use of GC-MS after extraction with toluene

Sample(s) /Subsample(s)	Unit	Result 1
nonylphenols (total)	mg/kg	< 5.0
Conclusion		Pass

Note:

Requirement: not listed in Regulation (EU) No. 10/2011 (< 5 mg/kg)

Octylphenole

Test Method
SOP M 0889 2015-01, with use of GC-MS after extraction with toluene

Sample(s) /Subsample(s)	Unit	Result 1
4-n-octylphenol (OP) (1806-26-4)	mg/kg	< 5.0
Conclusion		Pass

Note:

Requirement: not listed in Regulation (EU) No. 10/2011 (< 5 mg/kg)

Bisphenol A

Test Method
SOP M 3489 2019_02, with use of LC-MS/MS

Sample(s) /Subsample(s)	Unit	Result 1
Bisphenol A (80-05-7)	mg/kg	< 0.1
Conclusion		Pass

Note:

Requirement: intentional usage prohibited (Lois no 2012-1442): at the moment an indicative threshold of 0.1 mg/kg is discussed. When exceeding the threshold supplier need to declare that Bisphenol A is not intentionally added.

Short chain chlorinated paraffins (SCCP)

Test Method
DIN EN ISO 22818:2021-06, with use of GC-NCI-MS after extraction with toluene

Sample(s) /Subsample(s)	Unit	Result 1
Short chain chlorinated paraffins (SCCP)	mg/kg	< 50
Conclusion		Pass

Note:

Requirement: < 1500 mg/kg in articles (Regulation (EU) 2019/1021)

Chlorinated Phenols

Test Method
SOP M 3125 2019-12, measured with GC-MS

Sample(s) /Subsample(s)	Unit	Result 1
Pentachlorophenol (87-86-5)	mg/kg	< 0.1
2,3,4 - Trichlorophenol (15950-66-0)	mg/kg	< 0.1
2,3,5 - Trichlorophenol (933-78-8)	mg/kg	< 0.1
2,3,6 - Trichlorophenol (933-75-5)	mg/kg	< 0.1
2,4,5 - Trichlorophenol (95-95-4)	mg/kg	< 0.1
2,4,6 - Trichlorophenol (88-06-2)	mg/kg	< 0.1
3,4,5 - Trichlorophenol (609-19-8)	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol (935-95-5)	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol (58-90-2)	mg/kg	< 0.1
2,3,4,5-Tetrachlorophenol (76437-40-6)	mg/kg	< 0.1
Conclusion		Pass

Note:

Requirement: PCP: < 5 mg/kg (German Chemicals Prohibition Ordinance)

wood preservatives screening

Test Method
Extraction with cyclohexane (hot), measurement with GC-MS and internal standardisation

Sample(s) /Subsample(s)	Unit	Result 1
o,p-DDT (789-02-6)	mg/kg	<1
p,p-DDT (50-29-3)	mg/kg	<1
o,p-DDD (53-19-0)	mg/kg	<0.5
p,p-DDD (72-54-8)	mg/kg	<0.5
o,p-DDE (3424-82-6)	mg/kg	<0.5
p,p-DDE (72-55-9)	mg/kg	<0.5
cis+trans-Permethrin (52645-53-1)	mg/kg	<1
Dichlofluanid (1085-98-9)	mg/kg	<1
Methoxychlor (72-43-5)	mg/kg	<1
Chlorthalonil (1897-45-6)	mg/kg	<1
Lindan (58-89-9)	mg/kg	<0.5
Summe HCH (außer Lindan)	mg/kg	<0.5
Trichlorbenzol	mg/kg	<0.5
Tetrachlorbenzol	mg/kg	<0.5

Pentachlorbenzol	mg/kg	<0.5
Hexachlorbenzol (118-74-1)	mg/kg	<0.5
Dieldrin (60-57-1)	mg/kg	<0.5
Heptachlor (76-44-8)	mg/kg	<0.5
Heptachlorepoxid (1024-57-3)	mg/kg	<0.5
alpha-Endosulfan (115-29-7)	mg/kg	<0.5
beta-Endosulfan (33213-65-9)	mg/kg	<0.5
Pentachlorphenol (87-86-5)	mg/kg	<0.5
Beurteilung / Conclusion		Pass

Note:

Requirement: Pentachlorophenol: max. 5 mg/kg (German Chemicals Prohibition Ordinance)
others: no explicit limit

[1] n.t.: totalling invalid, since all single values < limit of quantification

Specific migration of 1,4-butanediol (Ref. No: 13720/40580, CAS No: 110-63-4)*

Test Method
migration: DIN 13130-1; measurement: GC-MS

simulant	50% ethanol
duration	2 hours
temperature	60 +/- 2°C
approach	10 dm²/L

Sample(s) or Subsample(s)	Unit	**Result 1**	**Result 1**	**Result 1**
		1st contact	2nd contact	3rd contact
1,4-butanediol (110-63-4)	mg/kg	< 0.01	< 0.01	< 0.01
Conclusion		pass	pass	pass

Note:

Requirement: max. 5 mg/kg food simulant (Regulation (EU) No 10/2011)

Specific migration of formaldehyde

Test Method
DIN CEN/TS 13130-23 2005-05 / DIN CEN/TS 13130-23 2005-05

simulant	3% acetic acid
duration	2 hours
temperature	70 +/- 2°C
approach	6 dm²/L

Subsample(s)	Unit	**Result 1**	**Result 1**	**Result 1**
		1st contact	2nd contact	3rd contact
Formaldehyde (50-00-0)	mg/kg	< 0.3	< 0.3	< 0.3
Conclusion		Pass	Pass	Pass

Note:

Requirement: max. 15 mg/kg food simulant (Regulation (EU) No 10/2011)

*** End of test report ***