

Article

Migration testing of GPPS and HIPS polymers: swelling effect caused by food simulants compared to real foods

Valeria Guazzotti *, Anita Gruner, Mladen Juric, Veronika Hendrich, Angela Störmer and Frank Welle

Fraunhofer Institute for Process Engineering and Packaging, IVV, Giggenhauser Straße 35, 85354 Freising, Germany

*correspondence: valeria.guazzotti@ivv.fraunhofer.de

Supplementary material -1 (Tabulated data)

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❖ GPPS

1 Migration and weight increase in isooctane at 60 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.02	average	6.0	7.4	13.5	14.3	27.4	27.6
	SD	2.7	4.3	2.4	2.6	4.3	4.6
0.04	average	11.40	15.23	17.29	23.60	41.67	44.5
	SD	0.32	4.87	1.25	2.87	4.64	5.2
0.08	average	17.79	33.96	27.26	55.52	82.56	89.5
	SD	3.37	5.43	3.65	7.67	11.83	9.3
0.17	average	99.15	88.08	65.00	141.69	183.54	196.5
	SD	19.94	6.86	4.07	9.26	11.44	12.4
0.25	average	123.33	116.63	86.38	185.61	235.97	245.1
	SD	30.65	8.02	6.79	11.91	16.51	12.0
0.33	average	159.67	145.77	106.83	227.28	280.17	291.8
	SD	5.78	7.37	4.45	9.53	15.02	15.7
0.42	average	170.66	174.02	126.49	262.31	317.66	330.0
	SD	27.08	9.91	5.50	12.86	17.42	15.8
1	average	287.62	328.75	237.13	464.03	541.76	557.7
	SD	28.73	19.92	12.49	23.98	36.31	25.9
2	average	481.11	549.89	382.71	728.94	822.10	840.7
	SD	28.70	26.43	17.96	36.31	42.88	31.3
3	average	614.09	671.81	464.73	880.10	983.10	1005.0
	SD	66.75	32.67	20.35	36.28	62.17	40.7
6	average	811.46	944.60	651.99	1248.38	1380.15	1407.0
	SD	55.83	52.05	35.13	87.74	132.06	87.5
14	average	995.95	1105.77	764.07	1434.11	1505.88	1600.4
		73.65	50.32	36.18	94.28	98.38	116.4
17	average	1076.05	1109.34	767.51	1453.79	1519.64	1623.1
	SD	28.06	30.19	20.62	69.17	67.91	91.7
21	average	1073.85	934.59	764.64	1449.57	1533.01	1638.6
	SD	35.48	452.75	32.56	73.53	61.95	90.4
28	average	1062.02	1098.83	759.76	1463.71	1534.59	1649.7
	SD	29.10	34.78	22.67	59.70	59.47	72.5
35	average	1063.49	1097.74	759.12	1457.08	1528.58	1655.9
	SD	35.66	44.09	28.82	62.14	46.23	60.5
42	SD	1062.86	1105.37	765.07	1479.35	1537.12	1674.2
		43.08	52.43	35.48	67.31	64.48	77.9

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro- benzene	Styrene	Phenyl- cyclo- hexane	Benzo- phenone	Methyl- stearate
0.02	0.7	0.7	1.9	1.0	2.2	1.9
0.04	1.3	1.5	2.4	1.6	3.3	3.0
0.08	2.1	3.3	3.8	3.8	6.6	6.1
0.17	11.6	8.5	9.0	9.8	14.7	13.3
0.25	14.4	11.3	12.0	12.8	18.9	16.6
0.33	18.7	14.1	14.8	15.7	22.4	19.8
0.42	20.0	16.8	17.5	18.1	25.4	22.4
1	33.6	31.8	32.9	32.1	43.3	37.9
2	56.3	53.2	53.0	50.4	65.7	57.1
3	71.8	65.0	64.4	60.9	78.6	68.3
6	94.9	91.4	90.4	86.4	110.4	95.6
14	116.5	107.0	105.9	99.2	120.4	108.7
17	125.9	107.4	106.4	100.6	121.5	110.3
21	125.6	104.0	106.0	100.3	122.6	111.3
28	124.2	106.4	105.3	101.3	122.7	112.1
35	124.4	106.2	105.2	100.8	122.2	112.5
42	124.3	107.0	106.0	102.4	122.9	113.7

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.02	06.2	24.9	61.8	73.5	166.0	59.5	18.9	07.4
0.04	10.7	43.2	107.1	125.9	289.2	93.4	31.1	11.4
0.08	24.9	95.5	216.7	249.9	565.1	174.0	62.8	21.6
0.17	56.9	211.7	409.1	462.6	1056.8	314.9	120.4	36.7
0.25	69.7	260.4	487.1	540.5	1231.4	367.4	142.4	44.5
0.33	83.3	309.2	560.7	618.8	1412.0	421.2	162.9	50.6
0.42	94.2	349.0	622.5	682.7	1559.9	465.0	180.8	56.7
1	157.2	576.9	956.7	1038.1	2386.9	705.6	278.4	88.8
2	247.4	897.8	1406.9	1516.2	3502.9	1024.8	414.3	134.1
3	301.6	1093.8	1706.6	1842.6	4240.1	1250.2	474.2	158.1
6	388.0	1403.5	2147.5	2319.4	5326.9	1562.8	628.3	203.6
14	483.1	1769.1	2928.0	3220.0	7345.9	2144.9	858.0	281.2
17	512.8	1887.2	3227.8	3585.8	8111.5	2360.2	944.6	299.7
21	519.8	1893.7	3341.7	3736.9	8386.5	2431.8	974.5	308.7
28	503.7	1849.0	3267.8	3724.7	8272.2	2388.3	940.5	301.1
35	499.1	1836.7	3329.7	3819.2	8439.3	2433.0	950.7	301.4
42	498.4	1840.8	3342.7	3853.3	8490.3	2444.6	958.5	303.2

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.02	1.7	2.2	2.2	3.3	3.5	4.4	3.6	4.3
0.04	2.9	3.8	3.8	5.6	6.1	6.9	5.8	6.5
0.08	6.7	8.5	7.6	11.2	11.9	12.9	11.8	12.4
0.17	15.4	18.8	14.4	20.7	22.2	23.4	22.6	21.1
0.25	18.9	23.1	17.1	24.1	25.8	27.3	26.7	25.5
0.33	22.6	27.4	19.7	27.6	29.6	31.3	30.6	29.0
0.42	25.5	30.9	21.9	30.5	32.7	34.5	33.9	32.5
1	42.6	51.2	33.6	46.4	50.1	52.4	52.2	50.9
2	67.0	79.6	49.4	67.7	73.5	76.1	77.7	76.9
3	81.7	97.0	59.9	82.3	89.0	92.8	89.0	90.7
6	105.1	124.5	75.4	103.6	111.8	116.0	117.9	116.8
14	130.9	156.9	102.8	143.8	154.2	159.3	161.0	161.4
17	139.0	167.4	113.4	160.2	170.3	175.2	177.2	172.0
21	140.9	168.0	117.4	166.9	176.0	180.6	182.8	177.2
28	136.5	164.0	114.8	166.4	173.6	177.3	176.5	172.8
35	135.3	162.9	116.9	170.6	177.1	180.6	178.4	173.0
42	135.1	163.3	117.4	172.1	178.2	181.5	179.8	174.0

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.02	0.0	0.01
0.04	0.0	0.01
0.08	0.3	0.01
0.13	0.6	0.01
0.17	0.9	0.13
0.25	2.7	0.12
0.33	3.9	0.07
1	11.8	0.15
2	17.1	0.08
3	21.0	0.12
6	30.4	0.17
8	35.0	0.07
10	45.0	0.14
15	49.9	0.83
23	57.0	0.73
29	63.9	0.04
45	71.8	0.45
65	80.3	0.48
73	87.0	0.17
99	88.1	3.43
114	92.5	3.57
143	95.5	0.36
192	96.4	2.05

2 Migration and weight increase in isooctane at 40 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro- benzene	Styrene	Phenyl- cyclo- hexane	Benzo- phenone	Methyl- stearate
0.25	average		4.3	3.7	1.5	3.2	6.7
	SD		5.8	1.3	0.3	1.6	1.9
0.5	average		6.6	4.2	2.1	3.3	6.3
	SD		7.9	2.7	0.4	0.5	0.3
1	average		16.2	8.3	4.4	6.7	8.1
	SD		2.7	1.3	0.8	1.2	0.7
2	average		25.1	11.9	8.1	15.9	13.2
	SD		4.5	2.0	0.7	9.6	1.8
6	average		40.3	17.5	13.8	20.3	21.3
	SD		5.5	2.4	2.0	1.6	2.3
14	average		60.2	24.4	20.4	30.2	32.3
	SD		7.5	3.2	2.4	2.7	3.1
17	average		66.9	29.2	22.4	35.9	38.5
	SD		7.3	3.0	2.6	5.0	3.4
21	average		77.2	32.3	25.5	40.2	42.9
	SD		7.4	3.2	2.1	4.2	3.2
28	average		89.8	37.0	30.4	45.2	48.0
	SD		7.5	4.2	3.3	4.7	2.7
35	average		100.0	42.4	34.0	47.7	52.6
	SD		7.8	3.5	2.1	2.4	2.1
42	average		112.7	47.6	38.3	53.7	61.2
	SD		8.0	3.6	2.6	3.3	4.3
49	average		122.6	52.7	41.9	59.5	67.4
	SD		6.3	3.3	2.4	4.2	4.2
56	average		131.9	44.9	45.9	60.9	61.6
	SD		8.1	24.9	3.2	3.8	4.4
63	average		138.7	57.9	48.7	61.6	48.4
	SD		11.9	5.5	4.6	5.0	7.6
70	average		143.0	60.2	51.2	67.6	62.3
	SD		5.8	2.8	2.8	3.1	3.3
80	average		156.7	64.4	56.6	79.3	76.6
	SD		9.4	4.0	3.4	4.1	3.8
91	average		169.5	70.0	62.2	87.2	84.0
	SD		11.2	4.9	4.0	6.7	6.2
101	average		183.3	76.5	67.7	88.2	67.8
	SD		14.4	6.8	5.8	5.7	18.9
108	average		197.4	82.8	73.6	105.0	110.2
	SD		7.7	3.7	3.2	5.4	12.6
122	average		124.7	49.5	43.9	64.5	65.9
	SD		5.5	2.3	1.8	2.2	2.5

139	average	153.8	54.3	49.1	71.2	73.9
	SD	36.5	2.4	2.4	3.7	3.1

Note: Due to analytical interferences. migration of toluene from GPPS isooctane at 40 °C can not be measured

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.25		0.4	0.5	0.1	0.3	0.5
0.5		0.6	0.6	0.1	0.3	0.4
1		1.6	1.1	0.3	0.5	0.6
2		2.4	1.6	0.6	1.3	0.9
6		3.9	2.4	1.0	1.6	1.4
14		5.8	3.4	1.4	2.4	2.2
17		6.5	4.0	1.6	2.9	2.6
21		7.5	4.5	1.8	3.2	2.9
28		8.7	5.1	2.1	3.6	3.3
35		9.7	5.9	2.4	3.8	3.6
42		10.9	6.6	2.6	4.3	4.2
49		11.9	7.3	2.9	4.8	4.6
56		12.8	6.2	3.2	4.9	4.2
63		13.4	8.0	3.4	4.9	3.3
70		13.8	8.3	3.5	5.4	4.2
80		15.2	8.9	3.9	6.3	5.2
91		16.4	9.7	4.3	7.0	5.7
101		17.7	10.6	4.7	7.1	4.6
108		19.1	11.5	5.1	8.4	7.5
122		12.1	6.9	3.0	5.2	4.5
139		14.9	7.5	3.4	5.7	5.0

Migration Kinetics - Results in µg/dm². Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.25	n.d.	6.6	7.5	9.9	26.1	1.8	3.4	n.d.
0.5	n.d.	7.3	11.9	10.9	25.0	10.4	3.7	1.6
1	n.d.	10.5	18.2	20.1	45.2	24.6	5.1	1.6
2	3.6	15.4	28.8	26.8	86.7	33.5	8.6	3.3
6	6.3	24.9	54.7	67.8	149.0	55.5	16.1	4.5
14	9.2	35.4	70.1	105.4	228.7	77.9	24.6	8.1
17	12.7	40.2	131.1	126.7	276.1	95.5	32.5	9.9
21	13.4	44.5	130.9	140.8	306.3	104.1	34.0	11.2
28	13.5	49.0	131.9	121.5	329.6	106.3	35.3	9.3
35	14.6	55.9	150.0	177.6	384.4	125.7	34.5	13.1

42	15.9	60.0	163.8	193.6	418.7	130.6	44.4	14.3
49	18.7	67.5	189.2	181.0	476.4	146.8	51.1	15.9
56	16.6	66.1	163.9	205.5	444.9	134.3	46.7	14.3
63	18.7	75.8	182.1	228.2	488.9	145.2	52.3	15.4
70	20.3	79.6	194.3	243.1	522.6	155.7	55.9	16.7
80	23.5	86.3	213.7	264.1	571.6	171.3	42.5	18.8
91	24.0	92.5	230.3	283.8	613.3	181.3	55.0	20.3
101	25.9	101.0	241.0	301.9	649.2	188.9	64.0	21.3
108	26.9	105.8	265.3	624.5	667.0	201.5	70.5	23.9
122	31.3	115.3	342.9	435.8	947.7	286.8	111.2	35.5
139	33.1	123.7	365.1	461.0	1011.7	302.1	114.4	37.6

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.25	0.0	0.6	0.3	0.4	0.5	0.1	0.6	n.d.
0.5	0.0	0.6	0.4	0.5	0.5	0.8	0.7	0.9
1	0.0	0.9	0.6	0.9	0.9	1.8	1.0	0.9
2	1.0	1.4	1.0	1.2	1.8	2.5	1.6	1.9
6	1.7	2.2	1.9	3.0	3.1	4.1	3.0	2.6
14	2.5	3.1	2.5	4.7	4.8	5.8	4.6	4.7
17	3.5	3.6	4.6	5.7	5.8	7.1	6.1	5.7
21	3.6	3.9	4.6	6.3	6.4	7.7	6.4	6.4
28	3.7	4.3	4.6	5.4	6.9	7.9	6.6	5.3
35	4.0	5.0	5.3	7.9	8.1	9.3	6.5	7.5
42	4.3	5.3	5.8	8.6	8.8	9.7	8.3	8.2
49	5.1	6.0	6.6	8.1	10.0	10.9	9.6	9.1
56	4.5	5.9	5.8	9.2	9.3	10.0	8.8	8.2
63	5.1	6.7	6.4	10.2	10.3	10.8	9.8	8.8
70	5.5	7.1	6.8	10.9	11.0	11.6	10.5	9.6
80	6.4	7.7	7.5	11.8	12.0	12.7	8.0	10.8
91	6.5	8.2	8.1	12.7	12.9	13.5	10.3	11.6
101	7.0	9.0	8.5	13.5	13.6	14.0	12.0	12.2
108	7.3	9.4	9.3	27.9	14.0	15.0	13.2	13.7
122	8.5	10.2	12.0	19.5	19.9	21.3	20.9	20.4
139	9.0	11.0	12.8	20.6	21.2	22.4	21.5	21.6

Weight increase- Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.17	0.1	0.01
0.35	0.1	0.01
1	0.1	0.01
2	0.1	0.02
3	0.1	0.02
6	0.1	0.02
8	0.2	0.01
13	0.3	0.01
17	0.3	0.01
23	0.4	0.01
29	0.6	0.03
45	0.9	0.03
65	1.1	0.01
99	1.7	0.03
114	1.9	0.05

3 Migration in isooctane at 20 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average			3.88	0.78	1.06	1.30
	SD			1.96	0.00	0.00	0.50
3	average		4.96	4.35	1.87	2.34	2.93
	SD		3.28	2.18	0.14	1.08	0.62
6	average		6.45	4.56	2.16	3.14	3.82
	SD		3.01	3.38	0.00	0.89	0.37
14	average		15.24	8.30	2.97	4.66	5.12
	SD		1.19	0.84	0.28	0.40	0.51
21	average		10.89	10.68	3.78	7.78	6.58
	SD		1.28	0.75	0.57	4.49	0.41
28	average		16.53	10.88	4.07	6.18	6.02
	SD		5.43	1.78	0.19	0.50	0.40
35	average		19.99	11.15	4.53	7.22	6.75
	SD		5.60	2.99	0.14	0.56	0.84
42	average		21.76	13.06	4.59	7.86	6.75
	SD		7.38	1.03	0.62	1.86	0.48
49	average		29.87	14.28	4.64	7.94	7.32
	SD		2.92	1.48	0.34	0.66	0.53
56	average		32.44	12.99	5.05	6.26	5.93
	SD		3.05	1.25	0.18	0.36	0.78
63	average		30.96	10.88	4.93	6.50	6.10
	SD		2.90	5.25	0.66	0.58	0.67
70	average		32.34	11.36	5.28	6.98	6.10
	SD		2.96	5.60	0.58	0.78	0.41
80	average		34.91	13.33	5.45	7.86	6.18
	SD		3.47	1.50	0.75	1.53	0.91
91	average		37.97	14.55	5.57	7.54	6.34
	SD		3.41	1.17	0.51	0.59	0.31
101	average		41.43	14.76	5.91	8.18	3.98
	SD		4.43	1.85	0.55	1.59	0.37
108	average		43.80	16.52	1.87	1.06	
	SD		4.13	2.26	2.18	0.00	
122	average		27.00	8.23	3.95	7.62	4.80
	SD		2.79	1.05	0.34	1.08	2.59
139	average		29.18	8.57	4.35	7.46	5.93
	SD		3.51	1.32	0.42	0.39	0.20

Note: Due to analytical interferences, migration of toluene from GPPS isooctane at 20 °C can not be measured

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1		0.0	0.5	0.1	0.1	0.0
3		0.5	0.6	0.1	0.2	0.2
6		0.6	0.6	0.1	0.3	0.3
14		1.5	1.1	0.2	0.4	0.3
21		1.1	1.5	0.3	0.6	0.4
28		1.6	1.5	0.3	0.5	0.4
35		1.9	1.5	0.3	0.6	0.5
42		2.1	1.8	0.3	0.6	0.5
49		2.9	2.0	0.3	0.6	0.5
56		3.1	1.8	0.3	0.5	0.4
63		3.0	1.5	0.3	0.5	0.4
70		3.1	1.6	0.4	0.6	0.4
80		3.4	1.8	0.4	0.6	0.4
91		3.7	2.0	0.4	0.6	0.4
101		4.0	2.0	0.4	0.7	0.3
108		4.2	2.3	0.1	0.1	0.0
122		2.6	1.1	0.3	0.6	0.3
139		2.8	1.2	0.3	0.6	0.4

Migration of oligomers from GPPS into isooctane at 20 °C was not detectable.

The weight increase of GPPS in isooctane at 20 °C remains < 0.01% until 73 days.

4 Migration and weight increase in 95% ethanol at 60 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.04	average	20.3		28.6	152.2	5.9	23.8
	SD	0.0		1.1	2.7	0.5	1.2
0.08	average	24.7		41.9	154.7	9.4	31.2
	SD	0.6		1.4	5.7	0.6	3.1
0.17	average	31.5	47.3	57.5	153.3	14.6	41.3
	SD	1.0	1.9	2.4	4.0	1.5	3.3
0.25	average	36.1	62.3	65.4	153.3	17.3	44.7
	SD	3.5	1.9	1.9	3.4	1.0	2.2
0.33	average	59.6	76.6	73.1	152.5	18.7	49.5
	SD	5.6	4.0	2.5	3.3	3.1	4.1
0.42	average	67.6	90.1	81.1	151.7	31.6	53.4
	SD	6.0	3.6	2.1	1.3	22.5	3.1
1	average	141.6	197.8	138.8	155.2	43.5	86.7
	SD	8.1	5.1	3.9	4.6	1.1	3.2
2	average	270.5	346.2	220.4	154.1	74.4	134.0
	SD	26.9	9.7	5.6	2.4	2.0	4.4
3	average	388.2	383.7	283.9	156.6	100.3	171.4
	SD	35.9	188.1	9.0	5.1	2.1	6.6
7	average	666.0	777.0	461.5	154.7	169.6	272.8
	SD	18.2	21.5	12.2	4.6	1.3	7.3
10	average	720.3	914.2	554.9	151.1	210.3	329.6
	SD	45.7	40.3	20.7	0.0	6.7	12.1
14	average	861.1	1011.7	631.8		260.1	393.9
	SD	87.7	27.6	21.5		8.5	16.1
21	average	942.7	1091.1	708.1	151.1	326.9	487.5
	SD	30.1	20.6	15.5	0.0	6.8	22.8
28	average	1016.7	957.7	749.4	151.1	387.9	581.4
	SD	140.7	396.0	16.0	0.0	9.2	19.1
35	average	1014.5	1132.0	772.3	151.1	440.0	665.2
	SD	117.9	33.0	26.6	0.0	17.2	32.0
42	average	921.9	1080.6	863.9	151.1	495.0	664.9
	SD	107.3	57.6	23.6	0.0	19.2	25.6
60	average	880.9	1051.9	728.8	151.1	505.2	668.4
	SD	151.5	56.7	40.2	0.0	19.4	41.3
73	average	845.4	1102.0	768.3	151.1	579.0	785.7
	SD	47.2	83.7	62.8	0.0	45.6	65.1
84	average	805.3	1011.9	704.0	151.1	592.8	856.1
	SD	101.5	55.2	27.5	0.0	16.6	41.9
94	average	816.3	802.7	680.5	151.1	611.7	888.7
	SD	61.0	400.2	42.2	0.0	31.6	49.8

105	average	841.0	1003.1	713.4	151.1	673.0	958.8
	SD	76.7	61.3	49.5	0.0	51.2	64.0

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.04	2.4	0.0	4.0	0.3	1.9	4.4
0.08	2.4	0.0	4.0	0.4	1.9	4.4
0.17	2.9	0.9	5.8	0.7	2.5	4.8
0.25	3.7	4.6	8.0	1.0	3.3	5.5
0.33	4.2	6.0	9.1	1.2	3.6	5.5
0.42	7.0	7.4	10.1	1.3	4.0	5.8
1	7.9	8.7	11.2	2.2	4.3	5.9
2	16.6	19.1	19.2	3.0	6.9	7.4
3	31.6	33.5	30.5	5.1	10.7	9.3
7	45.4	37.1	39.3	6.9	13.7	11.2
10	77.9	75.2	64.0	11.7	21.8	14.9
14	84.3	88.5	76.9	14.5	26.4	20.0
21	100.7	97.9	87.6	18.0	31.5	19.0
28	109.1	104.5	96.5	21.8	37.6	23.0
35	118.9	92.7	103.8	26.8	46.5	30.3
42	118.7	109.6	107.0	30.4	53.2	41.0
60	107.8	104.6	119.7	34.2	53.2	31.3
73	103.0	101.8	101.0	35.0	53.4	36.8
84	98.9	106.7	106.5	40.1	62.8	42.2
94	94.2	97.9	97.6	41.0	68.5	44.2
105	95.5	77.7	94.3	42.3	71.1	49.9

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.04	n.d.	5.4	3.1	3.4	10.7	n.d.	n.d.	n.d.
0.08	n.d.	8.2	4.0	4.9	15.9	4.0	n.d.	n.d.
0.17	2.6	11.8	5.8	7.0	20.0	5.5	n.d.	n.d.
0.25	5.3	13.3	6.5	7.6	19.9	5.8	n.d.	n.d.
0.33	4.9	14.5	7.2	8.0	21.2	6.3	n.d.	n.d.
0.42	5.3	15.6	7.6	7.6	21.9	6.5	2.5	n.d.
1	10.5	25.5	11.5	n.d.	33.1	10.0	3.7	n.d.
2	18.0	39.6	17.2	14.9	47.8	14.3	6.1	n.d.
3	24.0	51.4	21.4	21.5	58.0	17.8	7.9	2.7
7	35.6	80.1	31.4	29.9	83.4	25.0	11.5	4.7
10	43.4	96.8	37.1	35.2	96.2	29.1	13.2	5.5
14	51.7	117.2	42.7	40.7	112.2	33.6	15.0	6.9

21	67.2	152.3	57.7	53.1	150.0	43.7	20.6	8.5
28	81.1	180.9	66.0	62.0	167.0	52.6	25.8	9.4
35	91.5	201.8	76.6	69.0	191.3	62.6	24.7	10.4
42	107.3	235.1	106.7	78.2	217.4	75.9	27.7	17.0
60	122.8	267.4	96.8	84.3	240.6	75.6	36.8	16.0
73	141.8	313.2	110.6	95.6	280.1	84.9	39.7	27.6
84	153.2	335.0	119.2	103.4	291.8	92.6	49.7	19.4
94	158.6	347.3	133.8	116.2	328.9	104.6	44.3	20.9
105	165.4	363.8	138.7	120.3	336.3	103.2	49.5	21.4

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.04	n.d.	0.4	n.d.	0.1	0.2	0.2	n.d.	n.d.
0.08	n.d.	0.5	0.1	0.2	0.2	n.d.	n.d.	n.d.
0.17	n.d.	0.7	0.1	0.2	0.3	0.3	n.d.	n.d.
0.25	0.7	1.0	0.2	0.3	0.4	0.4	n.d.	n.d.
0.33	1.4	1.2	0.2	0.3	0.4	0.4	n.d.	n.d.
0.42	1.3	1.3	0.3	0.4	0.4	0.5	n.d.	n.d.
1	1.4	1.4	0.3	0.3	0.5	0.5	0.5	n.d.
2	2.9	2.3	0.4	n.d.	0.7	0.7	0.7	n.d.
3	4.9	3.5	0.6	0.7	1.0	1.1	1.2	n.d.
7	6.5	4.6	0.8	1.0	1.2	1.3	1.5	1.5
10	9.6	7.1	1.1	1.3	1.7	1.9	2.2	2.7
14	11.8	8.6	1.3	1.6	2.0	2.2	2.5	3.1
21	14.0	10.4	1.5	1.8	2.4	2.5	2.8	4.0
28	18.2	13.5	2.0	2.4	3.1	3.2	3.9	4.9
35	22.0	16.0	2.3	2.8	3.5	3.9	4.8	5.4
42	24.8	17.9	2.7	3.1	4.0	4.6	4.6	5.9
60	29.1	20.9	3.7	3.5	4.6	5.6	5.2	9.7
73	33.3	23.7	3.4	3.8	5.0	5.6	6.9	9.2
84	38.4	27.8	3.9	4.3	5.9	6.3	7.4	15.8
94	41.5	29.7	4.2	4.6	6.1	6.9	9.3	11.1
105	43.0	30.8	4.7	5.2	6.9	7.8	8.3	12.0

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.02	0.2	0.07
0.04	0.3	0.05
0.08	0.4	0.05
0.13	0.6	0.05
0.17	0.7	0.09
0.25	1.0	0.06
0.38	1.1	0.05
1	3.0	0.10
2	3.4	0.09
5	3.8	0.04
8	3.9	0.08
12	4.1	0.05
15	4.1	0.04
19	4.4	0.20
22	4.4	0.18
26	4.4	0.08
44	5.5	0.13
48	5.4	0.11
57	6.1	0.04
72	6.9	0.91
100	8.1	0.95
127	11.0	0.10
154	11.9	0.20
169	13.3	0.25
198	15.9	0.05

5 Migration and weight increase in 95% ethanol at 40 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.21	average	28.3	0.7	27.7	3.8	20.0	58.8
	SD	1.2	3.5	0.0	0.6	1.0	1.0
0.42	average	29.9	10.0	27.7	4.9	24.0	58.8
	SD	1.1	12.4	0.0	0.4	2.4	1.8
1	average	24.7	28.1	39.9	7.5	27.3	60.3
	SD	1.0	1.9	0.8	0.7	3.5	1.5
2	average	37.9	51.6	51.2	10.2	31.7	61.5
	SD	3.1	1.7	1.7	1.1	1.7	1.3
3	average	44.1	72.3	62.8	12.3	35.6	67.2
	SD	9.2	2.5	1.7	0.8	2.1	2.4
7	average	86.4	137.1	94.6	18.7	45.9	71.3
	SD	5.9	3.6	1.5	0.8	1.3	2.3
10	average	109.1	176.8	115.0	22.6	53.1	74.3
	SD	1.6	3.7	0.4	0.8	2.6	1.1
14	average	129.2	266.3	132.5	26.0	60.6	81.9
	SD	5.6	102.7	6.4	5.4	2.3	1.0
21	average	162.6	280.6	161.1	30.9	69.3	92.5
	SD	6.3	9.3	7.5	8.0	3.3	1.5
28	average	248.9	349.3	197.8	39.3	80.0	103.7
	SD	4.5	12.2	18.2	1.7	3.5	2.5
35	average	274.7	396.1	211.1	42.0	85.9	100.8
	SD	17.6	12.5	33.5	2.8	2.1	2.3
42	average	251.5	377.1	265.0	47.8	87.1	93.1
	SD	4.3	22.6	2.6	1.7	7.7	5.0
62	average	349.7	484.6	266.9	48.5	96.8	116.2
	SD	64.5	20.1	10.2	2.4	3.5	1.8
73	average	387.2	557.6	303.0	53.7	106.2	122.1
	SD	31.0	38.8	17.1	2.9	2.4	2.1
84	average	443.0	573.5	310.8	54.4	110.8	123.1
	SD	42.2	47.6	23.3	2.2	2.8	1.7
94	average	505.3	599.6	324.1	58.3	118.6	122.1
	SD	29.2	29.2	14.5	2.9	4.0	4.3
105	average	451.8	612.7	333.3	60.4	124.5	129.3
	SD	18.0	28.5	13.8	2.1	3.5	2.7

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.21	3.31	0.07	3.84	0.26	1.60	4.00
0.42	3.50	0.97	3.84	0.34	1.92	4.00
1	2.89	2.72	5.52	0.52	2.18	4.10
2	4.43	4.99	7.10	0.70	2.53	4.18
3	5.16	7.00	8.70	0.85	2.85	4.56
7	10.11	13.27	13.11	1.30	3.67	4.84
10	12.76	17.11	15.94	1.56	4.25	5.05
14	15.11	25.77	18.37	1.80	4.85	5.56
21	19.03	27.15	22.32	2.14	5.54	6.28
28	29.11	33.80	27.41	2.72	6.40	7.04
35	32.14	38.34	29.25	2.91	6.87	6.85
42	29.42	36.50	36.72	3.31	6.97	6.33
62	40.91	46.90	36.99	3.36	7.74	7.90
73	45.30	53.96	41.99	3.72	8.50	8.29
84	51.82	55.51	43.08	3.77	8.86	8.36
94	59.11	58.04	44.92	4.03	9.49	8.29
105	52.85	59.30	46.19	4.18	9.96	8.78

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.21		4.99		2.68	7.68	1.51		
0.42		5.46		3.32	8.46	2.25		
1								
2		8.01		4.06	11.10	2.86		
3		9.14		4.76	11.44			
7								
10								
14	4.90	15.55	3.64	6.00	16.39	4.37		
21	4.90	18.57	4.57	7.11	25.37	5.72	2.30	
28		22.11	4.64	7.18	21.19	6.28	1.86	
35	7.91	21.65	4.58	7.32	19.17	6.74	1.26	
42		15.07	18.70	7.64	19.71	7.30		
62	14.16	27.54	7.78	8.84	30.77	7.95	4.11	1.38
73	15.70	29.61	6.95	8.76	26.24	4.24	3.39	1.76
84	16.40	31.35	7.73	9.71	28.58	8.16	4.20	1.87
94	17.22	32.71	7.80	9.78	29.22	9.98	4.11	2.40
105	16.50	32.44	8.17	9.01	27.95	8.08	4.78	2.73

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.21		0.44		0.12	0.16	0.11		
0.42		0.48		0.15	0.18	0.17		
1								
2		0.71		0.18	0.23	0.21		
3		0.81		0.21	0.24			
7								
10								
14		1.38	0.13	0.27	0.34	0.32		
21	1.33	1.65	0.16	0.32	0.53	0.42	0.43	
28		1.96	0.16	0.32	0.44	0.47	0.35	
35	2.14	1.92	0.16	0.33	0.40	0.50	0.24	
42		1.34	0.66	0.34	0.41	0.54		
62	3.84	2.44	0.27	0.40	0.65	0.59	0.77	0.79
73	4.25	2.63	0.24	0.39	0.55	0.31	0.64	1.01
84	4.44	2.78	0.27	0.43	0.60	0.61	0.79	1.07
94	4.67	2.90	0.27	0.44	0.61	0.74	0.77	1.38
105	4.47	2.88	0.29	0.40	0.59	0.60	0.90	1.56

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.16	0.6	0.09
0.33	0.7	0.04
1	1.3	0.05
2	1.6	0.05
5	2.2	0.33
8	2.6	0.34
12	2.8	0.05
15	2.9	0.22
19	3.0	0.21
22	3.1	0.08
26	3.1	0.34
44	3.1	0.33
48	3.1	0.06
57	3.2	0.24
72	3.0	0.22
100	2.9	0.07
127	2.9	0.18
154	2.9	0.17
169	2.9	0.05

6 Migration and weight increase in 95% ethanol at 20 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	37.5	8.9		2.2	12.7	37.5
	SD	4.5	0.0		0.7	1.2	1.0
2	average	38.1	8.9		3.2	13.8	39.3
	SD	1.5	0.0		0.4	1.9	2.7
3	average	37.5	8.9		3.7	16.0	37.9
	SD	1.2	0.0		0.7	3.0	1.4
7	average	38.1	8.9		4.2	15.2	39.1
	SD	0.5	0.0		0.4	3.3	1.6
10	average	35.7	24.1		4.0	15.7	40.7
	SD	3.6	7.5		1.3	2.0	2.3
14	average	35.3	47.7		7.8	16.1	41.1
	SD	1.3	33.3		5.2	1.3	1.8
21	average	31.1	40.5	3.2	5.6	19.3	45.2
	SD	0.5	4.7	8.3	0.4	1.5	2.0
28	average	36.9	52.3	13.9	6.1	13.3	40.9
	SD	0.9	1.9	1.8	0.4	2.7	4.5
35	average	40.4	59.9	19.9	8.7	13.2	39.7
	SD	1.9	3.7	1.4	2.8	2.4	4.0
42	average	41.1	41.4	25.9	4.6	12.2	39.1
	SD	0.9	4.4	0.9	3.0	0.0	3.1
62	average	65.9	91.5	31.5	8.7	26.6	50.8
	SD	3.2	2.3	17.5	0.7	0.8	0.7
73	average	73.9	105.9	48.7	9.1	28.1	51.0
	SD	2.5	6.2	4.5	0.4	0.9	0.6
84	average	93.8	107.5	49.1	8.3	29.0	52.6
	SD	14.3	6.3	5.0	2.3	1.1	0.8
94	average	113.6	122.5	55.3	9.9	30.2	54.6
	SD	10.9	5.3	3.5	0.4	1.4	1.4
105	average	101.2	131.7	64.1	10.7	31.0	53.0
	SD	9.3	9.5	5.0	0.6	0.9	0.6

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	4.4	0.9		0.2	1.0	2.5
2	4.5	0.9		0.2	1.1	2.7
3	4.4	0.9		0.3	1.3	2.6
7	4.5	0.9		0.3	1.2	2.7

10	4.2	2.3		0.3	1.3	2.8
14	4.1	4.6		0.5	1.3	2.8
21	3.6	3.9	0.4	0.4	1.5	3.1
28	4.3	5.1	1.9	0.4	1.1	2.8
35	4.7	5.8	2.8	0.6	1.1	2.7
42	4.8	4.0	3.6	0.3	1.0	2.7
62	7.7	8.9	4.4	0.6	2.1	3.5
73	8.6	10.2	6.7	0.6	2.2	3.5
84	11.0	10.4	6.8	0.6	2.3	3.6
94	13.3	11.9	7.7	0.7	2.4	3.7
105	11.8	12.7	8.9	0.7	2.5	3.6

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1								
2		2.8		2.4	7.8	2.0		
3		4.2		2.9	7.1	1.9		
7		4.1		3.3	9.0	2.2		
10		4.8		3.6	9.4	2.8		
14		4.7		3.6	10.3	2.8		
21		5.1	3.6	4.3	18.8	3.0		
28		5.2	7.0	4.4	7.0	3.9		
35		4.7	6.0	4.5	7.9	4.4		
42		6.6	11.4	4.8	10.4	4.3		
62	6.2	7.0	3.6	6.2	20.0	5.5		
73	2.4	7.8	5.4	6.6	16.8	5.6	1.27	
84	3.1	8.4	3.6	6.8	18.2	5.0	2.55	
94	3.1	8.6	3.7	6.5	17.6	5.2		
105	2.6	8.7	3.7	6.4	17.0	4.5		

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	0.0	0.0		0.0	0.0	0.0	0.0	
2	0.0	0.2		0.1	0.2	0.2	0.0	
3	0.0	0.4		0.1	0.1	0.1	0.0	
7	0.0	0.4		0.1	0.2	0.2	0.0	
10	0.0	0.4		0.2	0.2	0.2	0.0	
14	0.0	0.4		0.2	0.2	0.2	0.0	
21	0.0	0.5	0.1	0.2	0.4	0.2	0.0	

28	0.0	0.5	0.2	0.2	0.1	0.3	0.0
35	0.0	0.4	0.2	0.2	0.2	0.3	0.0
42	0.0	0.6	0.4	0.2	0.2	0.3	0.0
62	1.7	0.6	0.1	0.3	0.4	0.4	0.0
73	0.6	0.7	0.2	0.3	0.4	0.4	0.0
84	0.8	0.7	0.1	0.3	0.4	0.4	0.0
94	0.9	0.8	0.1	0.3	0.4	0.4	0.0
105	0.7	0.8	0.1	0.3	0.4	0.3	0.0

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.7	0.04
5	1.1	0.14
8	1.2	0.22
12	1.4	0.09
15	1.6	0.08
19	1.7	0.09
22	1.8	0.03
26	1.8	0.07
44	2.4	0.10
48	2.4	0.04
57	2.5	0.04
72	2.7	0.07
100	2.8	0.04
127	2.9	0.05
154	3.0	0.07
169	3.0	0.02
198	3.1	0.03
247	3.2	0.05

7 Migration and weight increase in 50% ethanol at 60 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	40.5	116.5			11.6	
	SD	08.5	115.8			04.3	
2	average	61.4	74.6	11.4		12.2	
	SD	09.1	21.7	10.7		04.9	
3	average	103.9	109.1	20.5		18.5	
	SD	12.4	11.1	33.4		04.1	
7	average	128.7	183.4	59.2	0.2	26.4	
	SD	63.3	39.6	18.9	2.0	04.0	
10	average	233.4	276.5	99.6	3.8	27.6	
	SD	14.8	12.4	09.0	1.6	01.8	
14	average	269.2	323.3	125.5	7.1	30.7	
	SD	19.3	17.9	11.1	2.5	03.4	
21	average	288.5	350.4	176.0	14.3	36.2	
	SD	135.4	189.4	23.6	5.2	04.7	
28	average	357.4	480.9	210.7	17.1	41.3	
	SD	34.3	29.1	16.3	2.2	03.1	
35	average	327.1	456.3	192.4	15.7	42.2	
	SD	34.2	55.0	24.5	3.0	04.0	
42	average	197.0	283.9	115.7	11.1	55.1	
	SD	44.4	63.6	43.1	02.8	05.6	
49	average	292.9	455.3	201.5	24.6	55.3	
	SD	36.2	34.0	17.1	6.6	07.4	

Note: Due to analytical interferences, migration of methyl-stearate from GPPS in 50% ethanol at 60 °C can not be measured

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	4.7				0.9	
2	7.2	7.2	1.6		1.0	
3	12.1	10.6	2.8		1.5	
7	15.1	17.8	8.2	0.0	2.1	
10	27.3	26.8	13.8	0.3	2.2	
14	31.5	31.3	17.4	0.5	2.5	
21	33.8	33.9	24.4	1.0	2.9	
28	41.8	46.5	29.2	1.2	3.3	
35	38.3	44.2	26.7	1.1	3.4	
42	23.0	27.5	16.0	0.8	4.4	
49	34.3	44.1	27.9	1.7	4.4	

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1		4.0	6.9	10.1	11.3	13.5		
2		5.1	7.0	8.9	8.7	19.7		
3		3.8	7.7	5.3	11.2	18.9		
7		8.4	12.4	9.4	25.2	7.2		
10		9.5	8.0	10.0	23.1	6.7		
14		9.0	8.5	9.9	23.8	7.1		
21		9.9	8.1	10.2	23.9	7.5		
28		9.5	9.9	10.3	24.9	7.8		
35		9.5	9.9	11.8	28.0	9.0		
42		11.2	12.2	30.0	8.7	3.9		
49		9.1	11.2	27.5	9.1	3.0		

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1		0.4	0.2	0.4	0.2	1.0		
2		0.5	0.2	0.4	0.2	1.5		
3		0.3	0.3	0.2	0.2	1.4		
7		0.7	0.4	0.4	0.5	0.5		
10		0.8	0.3	0.4	0.5	0.5		
14		0.8	0.3	0.4	0.5	0.5		
21		0.9	0.3	0.5	0.5	0.6		
28		0.8	0.3	0.5	0.5	0.6		
35		0.8	0.3	0.5	0.6	0.7		
42		1.0	0.4	1.3	0.2	0.3		
49		0.8	0.4	1.2	0.2	0.2		

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.02	0.5	0.36
0.04	0.2	0.35
0.08	0.2	0.06
0.13	0.4	0.06
0.17	0.3	0.02
0.25	0.4	0.03
0.38	0.4	0.03
1	1.0	0.15
2	1.1	0.12
5	1.3	0.10
8	1.2	0.07
12	1.2	0.07
15	1.2	0.03
19	1.2	0.05
22	1.3	0.02
26	1.2	0.04
44	1.2	0.04
48	1.2	0.05
57	1.2	0.02
72	1.2	0.45
100	1.3	0.39
127	1.4	0.22

8 Migration and weight increase in 50% ethanol at 40 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.2	average					7.7	
	SD					0.0	
0.4	average					8.6	
	SD					2.3	
1.0	average					7.7	
	SD					0.0	
2.0	average	1.9				7.7	
	SD	0.0				0.0	
3.0	average	1.9				7.7	
	SD	0.0				0.0	
7.0	average	21.2	5.6			7.7	
	SD	6.8	11.1			0.0	
14	average	34.9	18.0			7.7	
	SD	11.7	14.8			0.0	
21	average	34.9	27.8			8.1	
	SD	0.0	8.5			0.9	
28	average	51.5	67.2	6.6		7.7	
	SD	38.8	12.1	8.0		0.0	
35	average	87.9	97.8	19.6		9.6	
	SD	7.4	8.1	12.0		2.5	
42	average	95.6	104.2	26.1		8.6	
	SD	13.5	17.3	5.0		1.8	
49	average	92.8	128.8	42.4		7.7	
	SD	9.1	22.4	8.0		0.0	
59	average	71.3	69.7	70.0		21.4	
	SD	7.4	116.2	153.6		07.7	
76	average	111.0	183.4	23.5		20.7	
	SD	9.1	24.3	8.7		02.7	
87	average	107.7	153.9	21.6		21.8	
	SD	9.1	48.3	8.2		2.3	
98	average	84.6	139.1	35.2		22.4	
	SD	56.1	60.4	24.5		1.2	
108	average	114.3	115.5	29.4		24.2	
	SD	13.8	8.1	6.9		1.5	
119	average	81.2	281.5	22.1		21.5	
	SD	13.8	87.0	9.3		1.5	

Note: Due to analytical interferences, migration of methylstearate and of phenylcyclohexane from GPPS in 50% ethanol at 40 °C can not be measured.

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.2	0.0	0.0	0.0		0.6	
0.4	0.0	0.0	0.0		0.7	
1	0.0	0.0	0.0		0.6	
2	0.2	0.0	0.0		0.6	
3	0.2	0.0	0.0		0.6	
7	2.5	0.5	0.0		0.6	
14	4.1	1.7	0.0		0.6	
21	4.1	2.7	0.0		0.6	
28	6.0	6.5	0.9		0.6	
35	10.3	9.5	2.7		0.8	
42	11.2	10.1	3.6		0.7	
49	10.9	12.5	5.9		0.6	
59	8.3	6.7	9.7		1.7	
76	13.0	17.8	3.3		1.7	
87	12.6	14.9	3.0		1.7	
98	9.9	13.5	4.9		1.8	
108	13.4	11.2	4.1		1.9	
119	9.5	27.2	3.1		1.7	

Migration of oligomers from GPPS into 50% ethanol at 40 °C was not detectable.

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.16	0.3	0.11
0.33	0.3	0.09
1	0.6	0.07
2	0.8	0.05
5	1.0	0.09
8	1.1	0.13
12	1.1	0.05
15	1.1	0.04
19	1.2	0.04
22	1.2	0.24
26	1.2	0.22
44	1.2	0.23
48	1.2	0.32
57	1.2	0.31
72	1.2	0.30
100	1.2	0.34
127	1.2	0.34

9 Weight increase in 50% ethanol at 20 °C

The migration remains below the detection limits.

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
1	0.5	0.14
2	0.6	0.12
5	0.6	0.07
8	0.7	0.04
12	0.7	0.01
15	0.8	0.01
19	0.9	0.01
23	0.9	0.01
26	0.9	0.11
44	1.0	0.10
48	1.0	0.09
57	1.0	0.06
72	1.1	0.05
100	1.1	0.04

10 Weight increase in 20% ethanol at 60. 40 and 20 °C

Weight increase at 60 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.6	0.02
5	0.6	0.02
11	0.6	0.02
16	0.6	0.04
19	0.5	0.04
45	0.5	0.04
60	0.5	0.04
89	0.5	0.04
138	0.6	0.04

Weight increase at 40 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.3	0.01
5	0.4	0.04
11	0.5	0.05
16	0.5	0.01
19	0.5	0.04
45	0.5	0.05
60	0.5	0.01
89	0.5	0.01
138	0.5	0.01

Weight increase at 20 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.1	0.05
5	0.2	0.05
11	0.2	0.04
16	0.3	0.02
19	0.3	0.03
45	0.4	0.01
60	0.4	0.01
89	0.4	0.02
138	0.4	0.02

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11 Migration and weight increase in isooctane at 60 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.21	average	1076.0	1141.6	549.8	907.0	1105.8	1461.4
	SD	20.7	26.2	14.5	471.6	75.6	44.2
0.38	average	1095.2	1163.4	564.1	1189.5	1234.3	1614.2
	SD	24.6	27.6	16.4	60.3	99.3	61.2
1	average	1100.0	1153.9	560.9	1232.6	1337.5	1724.7
	SD	22.4	19.7	9.4	31.7	63.9	59.2
2	average	1122.4	1182.9	576.0	1314.2	1428.1	1796.5
	SD	15.9	12.2	7.5	20.5	39.1	58.2
3	average	1137.1	1194.9	583.8	1335.5	1448.8	1801.4
	SD	29.32	15.17	6.28	20.26	23.06	33.26
7	average	1126.58	1172.59	571.92	1318.23	1485.59	1783.85
	SD	21.21	11.50	5.13	19.71	15.66	26.15
14	average	1121.75	1179.97	570.89	1303.31	1477.29	1787.78
	SD	14.93	16.76	7.75	16.96	14.02	19.18
22	average	1165.35	1035.29	504.21	1177.45	1400.02	1747.04
	SD	43.80	26.96	3.41	10.89	22.25	40.71
29	average	1167.31	1202.28	581.66	1306.31	1494.30	1726.06
	SD	11.30	11.53	3.50	16.83	19.21	77.13
35	average	1180.28	1230.66	602.96	1370.85	1577.38	1819.77
	SD	15.65	6.80	3.37	14.29	18.86	84.23
43	average	1152.37	1217.05	590.82	1324.44	1455.87	1449.62
	SD	18.23	19.92	7.76	24.15	90.97	291.23
49	average	1134.72	1205.23	600.22	1333.66	1393.66	1440.42
	SD	25.94	50.34	58.51	90.04	94.67	131.52

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.21	71.2	70.2	76.5	37.3	55.7	62.6
0.38	72.5	71.5	78.5	48.9	62.2	69.1
1	72.8	71.0	78.1	50.6	67.4	73.9
2	74.3	72.7	80.2	54.0	72.0	77.0
3	75.3	73.5	81.3	54.9	73.0	77.2
7	74.6	72.1	79.6	54.2	74.9	76.4
14	74.3	72.6	79.5	53.6	74.5	76.6
22	77.1	63.7	70.2	48.4	70.6	74.8

29	77.3	73.9	81.0	53.7	75.3	73.9
35	78.1	75.7	83.9	56.3	79.5	77.9
43	76.3	74.8	82.2	54.4	73.4	62.1
49	75.1	74.1	83.6	54.8	70.3	61.7

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.21	119.3	1549.5	1913.3	4099.4	8384.4	2375.1	1007.4	308.5
0.38	134.5	1761.6	2155.1	4534.0	9342.0	2666.4	1135.7	353.4
1	143.7	1942.3	2617.6	5351.5	11226.9	3227.7	1378.3	428.6
2	153.4	2070.4	3075.4	6362.7	13259.7	3788.8	1610.9	498.3
3	154.2	2087.8	3256.4	6873.8	14117.9	3277.7	1728.2	527.5
7	140.5	1891.9	3157.6	6904.2	13810.3	3865.5	1657.4	489.0
14	143.3	1916.0	3297.5	7247.6	14381.9	4003.7	1720.1	505.1
22	138.5	1909.1	3498.2	7808.1	15501.2	4297.9	1859.8	541.8
29	141.7	1863.2	3198.2	6993.3	13865.8	3087.1	1670.3	497.0
35	141.6	1856.2	3136.7	6865.9	13585.7	3774.8	1640.8	492.3
43	145.1	1894.1	3240.7	7170.5	14194.6	3932.1	1714.0	509.9
49	152.0	1998.6	3296.4	7264.9	14495.1	4036.5	1670.8	499.3

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.21	44.9	48.6	22.4	30.7	31.5	32.6	31.3	32.5
0.38	50.6	55.3	25.2	34.0	35.1	36.6	35.3	37.3
1	54.1	61.0	30.6	40.1	42.2	44.2	42.9	45.2
2	57.8	65.0	35.9	47.7	49.8	51.9	50.1	52.6
3	58.1	65.5	38.0	51.5	53.1	44.9	53.7	55.6
7	52.9	59.4	36.9	51.7	51.9	53.0	51.5	51.6
14	54.0	60.1	38.5	54.3	54.0	54.9	53.5	53.3
22	52.2	59.9	40.9	58.5	58.3	58.9	57.8	57.2
29	53.4	58.5	37.4	52.4	52.1	42.3	51.9	52.4
35	53.3	58.3	36.6	51.4	51.1	51.7	51.0	51.9
43	54.6	59.4	37.9	53.7	53.3	53.9	53.3	53.8
49	57.2	62.7	38.5	54.4	54.5	55.3	51.9	52.7

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.2	16.7	0.03
0.3	17.3	0.18
1	20.9	0.44
2	22.1	0.30
5	26.3	1.43
12	31.8	1.83
16	33.8	0.41
30	36.0	0.67
44	38.3	0.71
64	42.8	0.21
92	49.9	1.91
126	58.1	2.09
159	63.4	0.20
201	68.2	2.60

12 Migration and weight increase in isooctane at 40 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	1052.7	1064.0	526.0	655.6	710.8	922.7
	SD	508.3	18.7	13.0	11.0	8.8	9.3
2	average	1279.54	1083.19	558.97	817.99	897.11	1119.46
	SD	30.91	22.90	18.43	31.87	50.94	62.73
3	average	1300.51	1093.69	560.81	882.42	966.64	1219.50
	SD	33.92	31.36	28.63	19.53	15.58	20.24
7	average	1333.40	1108.12	588.64	1049.93	1170.68	1428.19
	SD	27.84	27.17	19.11	18.01	11.30	15.32
14	average	1325.85	1116.16	575.47	1179.41	1308.78	1609.87
	SD	18.28	20.93	29.03	33.41	33.00	41.04
22	average	1458.15	972.96	541.10	1094.57	1276.57	1688.49
	SD	58.06	14.98	9.21	21.75	18.84	31.26
29	average	1412.59	1155.20	612.93	1246.33	1391.45	1724.25
	SD	83.00	24.45	14.79	26.30	23.21	27.62
35	average	1357.98	1180.79	635.50	1307.97	1469.28	1808.45
	SD	16.85	20.15	10.88	29.64	22.37	26.72
43	average	1334.60	1138.80	601.36	1255.55	1385.92	1654.69
	SD	15.67	15.88	26.01	9.86	26.31	25.41
49	average	1315.44	1145.69	597.12	1267.78	1391.03	1597.35
	SD	28.30	19.37	37.06	25.92	22.04	46.02

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	69.7	65.4	73.2	26.9	35.8	39.5
2	84.7	66.6	77.8	33.6	45.2	48.0
3	86.1	67.3	78.1	36.3	48.7	52.2
7	88.3	68.1	81.9	43.1	59.0	61.2
14	87.8	68.6	80.1	48.5	66.0	69.0
22	96.5	59.8	75.3	45.0	64.4	72.3
29	93.5	71.0	85.3	51.2	70.1	73.9
35	89.9	72.6	88.5	53.7	74.1	77.5
43	88.4	70.0	83.7	51.6	69.9	70.9
49	87.1	70.5	83.1	52.1	70.1	68.4

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	80.0	1029.8	1648.3	3519.5	7046.5	2000.8	856.3	256.7
2	96.2	1247.0	2054.4	4445.0	8873.5	2506.7	1075.8	318.1
3	108.9	1414.1	2390.1	5183.9	10331.0	2890.7	1250.7	370.6
7	117.5	1533.0	2624.3	5707.4	11312.1	3159.0	1357.5	400.9
14	132.1	1723.4	2988.2	6489.6	12845.3	3572.2	1503.7	448.3
22	132.3	1813.9	3349.6	7402.4	14668.9	4083.6	1759.1	520.8
29	135.2	1784.0	1554.0	6602.0	13081.8	3610.1	1339.6	463.4
35	136.6	1780.6	540.7	6474.7	12801.8	3551.0	1549.2	460.7
43	144.4	1810.4	3118.8	6824.1	13499.5	3742.4	1621.4	481.5
49	146.0	1819.3	3121.2	6812.4	13475.2	3742.0	1625.5	484.5

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	30.1	32.3	19.3	26.4	26.5	27.4	26.6	27.1
2	36.2	39.1	24.0	33.3	33.3	34.4	33.4	33.6
3	41.0	44.4	27.9	38.8	38.8	39.6	38.9	39.1
7	44.3	48.1	30.7	42.8	42.5	43.3	42.2	42.3
14	49.7	54.1	34.9	48.6	48.3	49.0	46.8	47.3
22	49.8	56.9	39.1	55.5	55.1	56.0	54.7	54.9
29	50.9	56.0	35.0	49.5	49.2	49.5	41.7	48.9
35	51.4	55.9	35.0	48.5	48.1	48.7	48.2	48.6
43	54.4	56.8	36.4	51.1	50.7	51.3	50.4	50.8
49	55.0	57.1	36.5	51.0	50.6	51.3	50.5	51.1

Weight increase- Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.2	3.1	0.22
0.3	2.4	0.57
1	5.6	0.55
2	6.9	0.40
5	8.7	1.37
12	12.4	1.36
16	13.2	0.33
30	14.0	0.73
44	14.4	0.73
64	14.4	0.43
92	14.3	1.17
126	14.2	0.77
159	14.5	0.61

13 Migration and weight increase in isooctane at 20 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	763.48	743.30	298.00	161.43	187.26	277.16
	SD	207.58	99.34	58.21	33.41	27.60	41.57
2	average	887.18	852.55	355.62	233.84	269.79	346.42
	SD	106.14	9.01	18.41	4.32	3.46	3.46
3	average	887.03	876.01	377.05	270.92	313.61	382.03
	SD	110.28	5.52	24.69	2.69	3.88	3.07
7	average	955.06	919.15	414.62	363.22	422.13	476.65
	SD	104.47	9.70	18.40	3.11	6.67	6.09
14	average	972.56	938.34	444.18	466.19	534.10	591.33
	SD	145.93	49.60	32.57	19.86	29.93	28.82
22	average	1144.53	901.76	428.83	476.76	554.97	685.64
	SD	129.33	55.21	26.40	12.90	12.70	20.63
29	average	1052.81	1009.37	472.48	567.09	636.53	740.26
	SD	103.23	8.98	4.46	9.03	9.50	11.17
35	average	1073.63	1045.79	503.07	624.89	695.42	801.07
	SD	109.49	6.44	22.46	12.86	10.60	16.15
43	average	1060.96	1006.91	478.66	640.22	672.75	738.30
	SD	92.28	10.09	5.00	11.60	15.86	17.91
49	average	1053.87	1036.60	493.67	670.06	722.79	773.61
	SD	114.44	5.38	3.48	8.99	9.35	21.50
56	average	1097.16	1092.87	517.27	728.38	742.84	603.40
	SD	102.62	75.68	38.37	57.53	39.56	80.96
63	average	1075.44	1042.51	496.77	707.35	752.51	761.54
	SD	106.45	3.67	4.28	8.31	7.07	10.33
70	average	1076.80	1035.78	501.69	722.06	733.85	476.46
	SD	103.74	26.27	26.29	21.58	50.55	102.79
77	average	1071.22	1027.09	491.50	742.67	746.71	677.34
	SD	95.81	4.90	4.09	15.81	10.16	30.25
84	average	1084.79	1084.34	528.73	812.29	803.94	762.38
	SD	98.53	84.20	39.83	77.23	56.28	67.16
91	average	1073.48	1046.61	513.49	800.48	818.45	888.29
	SD	106.66	9.14	21.53	20.02	13.07	14.49
98	average	1062.77	1025.61	487.71	752.93	806.01	849.96
	SD	100.04	12.99	5.35	22.12	22.52	66.97
105	average	1074.23	1031.52	493.56	769.61	820.25	945.78
	SD	93.92	19.11	8.20	21.60	25.57	26.41
115	average	1101.54	1048.58	501.35	790.74	846.79	924.81
	SD	107.20	21.53	10.30	32.14	31.19	82.88

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	50.5	45.7	41.5	6.6	9.4	11.9
2	58.7	52.4	49.5	9.6	13.6	14.8
3	58.7	53.9	52.5	11.1	15.8	16.4
7	63.2	56.5	57.7	14.9	21.3	20.4
14	64.4	57.7	61.8	19.2	26.9	25.3
22	75.8	55.5	59.7	19.6	28.0	29.4
29	69.7	62.1	65.8	23.3	32.1	31.7
35	71.1	64.3	70.0	25.7	35.1	34.3
43	70.2	61.9	66.6	26.3	33.9	31.6
49	69.8	63.7	68.7	27.5	36.4	33.1
56	72.6	67.2	72.0	29.9	37.4	25.8
63	71.2	64.1	69.2	29.1	37.9	32.6
70	71.3	63.7	69.8	29.7	37.0	20.4
77	70.9	63.2	68.4	30.5	37.6	29.0
84	71.8	66.7	73.6	33.4	40.5	32.7
91	71.1	64.4	71.5	32.9	41.3	38.0
98	70.4	63.1	67.9	30.9	40.6	36.4
105	71.1	63.4	68.7	31.6	41.4	40.5
115	72.9	64.5	69.8	32.5	42.7	39.6

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	22.6	218.1	588.6	1155.0	2360.9	688.7	280.6	87.1
2	27.3	296.4	646.9	1301.1	2671.3	775.5	312.5	98.2
3	31.5	334.5	643.5	1293.7	2657.6	776.9	323.2	98.7
7	36.6	420.3	635.6	1257.2	2593.2	752.7	317.0	97.7
14	48.2	552.1	683.9	1400.9	2914.0	848.5	361.6	112.0
22	52.5	657.4	853.1	1670.4	3505.8	1021.9	436.1	134.9
29	62.8	712.1	874.0	1652.7	3482.8	1008.5	435.5	136.3
35	63.9	745.4	881.9	1659.0	3501.9	1019.7	443.6	140.2
43	68.6	791.2	936.6	1772.9	3771.6	1091.3	479.9	149.0
49	74.0	817.0	974.0	1827.4	3895.0	1130.0	498.2	155.7
56	68.9	885.1	983.8	1923.3	4189.6	1205.4	536.7	170.5
63	72.5	901.9	1024.8	2031.7	4352.6	1251.7	563.1	176.0
70	76.5	987.6	1157.0	2343.4	5047.4	1453.5	656.3	207.2
77	79.0	1003.5	1186.0	2369.4	5082.3	1454.4	657.3	205.8
84	75.4	998.4	1124.6	2240.9	4823.7	1387.4	622.3	194.9
91	78.2	1000.4	1172.4	2334.2	4999.9	1440.7	637.2	197.9

98	79.1	999.2	1253.2	2515.3	5399.1	1554.5	694.0	218.8
105	81.4	1030.8	1321.4	2629.2	5643.3	1630.2	723.7	229.6
115	84.5	1074.3	1373.1	2729.6	5885.3	1689.9	764.2	243.4

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	8.5	6.8	6.9	8.7	8.9	9.4	8.7	9.2
2	10.3	9.3	7.6	9.7	10.0	10.6	9.7	10.4
3	11.9	10.5	7.5	9.7	10.0	10.7	10.0	10.4
7	13.8	13.2	7.4	9.4	9.7	10.3	9.9	10.3
14	18.1	17.3	8.0	10.5	11.0	11.6	11.2	11.8
22	19.8	20.6	10.0	12.5	13.2	14.0	13.6	14.2
29	23.6	22.4	10.2	12.4	13.1	13.8	13.5	14.4
35	24.0	23.4	10.3	12.4	13.2	14.0	13.8	14.8
43	25.8	24.8	10.9	13.3	14.2	15.0	14.9	15.7
49	27.8	25.6	11.4	13.7	14.6	15.5	15.5	16.4
56	25.9	27.8	11.5	14.4	15.7	16.5	16.7	18.0
63	27.3	28.3	12.0	15.2	16.4	17.2	17.5	18.6
70	28.8	31.0	13.5	17.6	19.0	19.9	20.4	21.9
77	29.7	31.5	13.9	17.8	19.1	19.9	20.4	21.7
84	28.4	31.3	13.1	16.8	18.1	19.0	19.3	20.6
91	29.4	31.4	13.7	17.5	18.8	19.8	19.8	20.9
98	29.8	31.4	14.6	18.8	20.3	21.3	21.6	23.1
105	30.7	32.4	15.4	19.7	21.2	22.3	22.5	24.2
115	31.8	33.7	16.0	20.5	22.1	23.2	23.8	25.7

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	1.6	0.19
5	2.3	0.40
12	2.7	0.43
16	2.9	0.05
30	3.5	0.11
44	4.0	0.19
64	4.4	0.13
92	5.0	0.18
126	5.6	0.17
159	6.2	0.33
201	7.0	0.43
273	7.6	0.50

14 Migration and weight increase in 95% ethanol at 60 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.33	average	100.5	181.0	53.4	37.1	71.4	53.9
	SD	14.2	28.7	6.2	1.5	3.8	5.5
1	average	313.6	426.9	163.3	53.7	118.2	76.6
	SD	34.7	29.4	12.1	23.6	6.3	4.1
2	average	675.2	729.2	285.7	96.1	173.5	99.5
	SD	183.8	65.7	26.7	5.8	9.4	6.6
3	average	785.0	894.8	367.8	188.2	221.1	141.5
	SD	33.6	55.1	17.2	07.2	10.2	7.2
7	average	1164.1	1239.7	548.7	274.5	361.3	203.4
	SD	34.8	28.4	12.3	09.8	15.1	11.8
14	average	1306.4	1400.5	659.5	379.5	528.0	274.9
	SD	27.3	20.6	08.3	17.7	27.7	18.0
22	average	1392.9	1750.3	834.5	514.5	742.4	301.8
	SD	150.3	137.8	25.1	27.5	31.3	16.5
29	average	1307.0	1388.7	670.5	522.7	747.8	440.9
	SD	20.9	29.5	12.3	30.6	42.4	33.2
35	average	1390.0	1454.5	751.3	649.9	940.3	542.0
	SD	24.9	34.5	05.8	41.5	66.3	52.8
43	average	1251.9	1451.7	733.4	710.0	968.3	443.7
	SD	38.9	30.6	14.2	31.1	61.4	72.6
49	average	1293.8	1488.5	751.8	768.5	1073.5	495.2
	SD	52.5	21.9	09.7	55.9	80.8	78.8
56	average	1171.5	1420.3	728.9	798.1	1136.0	487.9
	SD	46.4	45.5	09.9	48.9	56.9	43.5
63	average	1200.0	1452.2	741.5	866.7	1200.0	496.7
	SD	75.1	55.2	15.1	43.0	51.7	39.5
70	average	1203.3	1348.0	748.9	935.6	1262.6	423.5
	SD	44.6	116.2	17.7	69.0	71.2	43.4
77	average	1181.0	1424.0	744.6	965.8	1289.9	444.1
	SD	48.2	40.1	17.8	61.0	54.8	29.0
84	average	1230.7	1357.9	743.0	1006.5	1422.3	710.1
	SD	55.6	78.6	20.0	87.6	80.9	33.8
91	average	1199.0	1410.4	708.5	989.2	1427.8	767.6
	SD	56.9	22.1	12.1	36.5	39.2	42.1
98	average	1075.1	1354.4	725.2	1111.8	1536.5	429.1
	SD	99.1	57.9	36.5	74.9	69.7	241.8
105	average	997.2	1272.0	647.6	1066.3	1497.4	644.1
	SD	166.3	119.0	53.4	105.8	97.0	19.5
115	average	1250.7	1407.3	735.0	1194.4	1591.4	891.8
	SD	53.6	51.8	13.2	49.5	34.9	46.4

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
0.33	6.7	11.1	7.4	1.5	3.6	2.3
1	20.8	26.3	22.7	2.2	6.0	3.3
2	20.8	44.8	39.8	3.9	8.7	4.3
3	52.0	55.0	50.4	5.2	11.1	5.5
7	77.1	76.2	76.1	8.8	18.2	8.4
14	86.5	86.1	91.8	13.3	26.6	11.7
22	92.2	83.0	88.8	19.1	37.5	13.0
29	86.5	85.4	93.4	19.4	37.7	19.5
35	92.0	89.4	104.8	24.8	47.5	24.2
43	82.9	89.3	102.3	27.4	48.9	19.6
49	85.7	91.5	104.9	29.9	54.2	22.0
56	77.6	87.3	101.6	31.1	57.4	21.7
63	79.4	89.3	103.4	34.1	60.6	22.1
70	79.7	82.9	104.5	37.0	63.8	18.7
77	78.2	87.6	103.9	38.3	65.2	19.6
84	81.5	83.5	103.6	40.0	71.8	32.1
91	79.4	86.7	98.7	39.3	72.1	34.8
98	71.2	83.3	101.1	44.5	77.6	18.9
105	66.0	78.2	90.1	42.6	75.6	29.0
115	82.8	86.5	102.5	48.0	80.4	40.6

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.33	4.48	27.29	49.55	30.06	68.18	20.98	8.90	3.39
1	5.88	39.38	46.63	35.55	82.43	24.65	10.42	4.03
2	8.74	55.15	43.89	39.76	94.07	27.24	11.23	5.08
3	11.69	69.99	47.13	46.13	111.83	32.62	14.51	6.28
7	15.58	113.44	53.05	58.82	139.11	41.96	19.19	7.11
14	22.17	164.14	57.65	73.20	177.28	54.90	26.51	9.62
22	24.71	202.94	54.36	90.53	218.33	65.91	31.93	12.13
29	31.88	236.57	112.52	95.56	234.26	62.31	36.20	10.61
35	36.37	259.20	105.18	96.78	239.01	72.28	39.81	2.32
43	13.36	299.14	109.79	108.85	264.15	45.03	45.02	16.67
49	45.83	326.16	115.99	114.99	283.28	3.93	41.71	16.63
56	18.48	344.90	87.46	118.41	295.96	91.86	48.03	17.27
63	24.05	369.47	86.65	123.12	305.07	94.00	24.06	18.75
70	8.97	403.49	100.98	137.31	337.04	103.95	55.92	20.83
77	14.30	423.06	98.99	143.96	354.98	108.94	57.34	20.96

84	17.67	446.39	126.32	158.76	392.76	120.61	63.21	23.75
91	7.82	467.29	129.62	182.31	451.28	139.10	72.00	27.15
98	8.25	491.17	114.83	164.48	406.55	125.26	62.13	23.58
105	6.63	507.92	120.20	174.95	436.56	136.33	70.22	27.58
115	7.27	541.09	128.03	178.07	443.08	137.70	72.58	28.14

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
0.33	1.7	0.9	0.6	0.2	0.3	0.3	0.3	0.4
1	2.2	1.2	0.5	0.3	0.3	0.3	0.3	0.4
2	3.3	1.7	0.5	0.3	0.4	0.4	0.3	0.5
3	4.4	2.2	0.6	0.3	0.4	0.4	0.5	0.7
7	5.9	3.6	0.6	0.4	0.5	0.6	0.6	0.7
14	8.3	5.2	0.7	0.5	0.7	0.8	0.8	1.0
22	9.3	6.4	0.6	0.7	0.8	0.9	1.0	1.3
29	12.0	7.4	1.3	0.7	0.9	0.9	1.1	1.1
35	13.7	8.1	1.2	0.7	0.9	1.0	1.2	0.2
43	5.0	9.4	1.3	0.8	1.0	0.6	1.4	1.8
49	17.3	10.2	1.4	0.9	1.1	0.1	1.3	1.8
56	7.0	10.8	1.0	0.9	1.1	1.3	1.5	1.8
63	9.1	11.6	1.0	0.9	1.1	1.3	0.7	2.0
70	3.4	12.7	1.2	1.0	1.3	1.4	1.7	2.2
77	5.4	13.3	1.2	1.1	1.3	1.5	1.8	2.2
84	6.7	14.0	1.5	1.2	1.5	1.7	2.0	2.5
91	2.9	14.7	1.5	1.4	1.7	1.9	2.2	2.9
98	3.1	15.4	1.3	1.2	1.5	1.7	1.9	2.5
105	2.5	15.9	1.4	1.3	1.6	1.9	2.2	2.9
115	2.7	17.0	1.5	1.3	1.7	1.9	2.3	3.0

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.2	1.6	0.06
0.3	1.9	0.11
1	3.2	0.17
2	3.3	0.05
5	3.2	0.58
12	3.2	0.62
16	3.2	0.05
30	3.3	0.05
44	3.7	0.07
64	4.2	0.03
92	5.4	0.09
126	7.4	0.06
159	9.8	0.04
201	16.2	0.01
273	34.0	0.06

15 Migration and weight increase in 95% ethanol at 40 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	51.0	98.8	37.8	11.3	35.6	29.7
	SD	1.9	24.0	3.6	8.2	5.5	1.3
2	average	78.6	211.2	66.0	19.6	39.0	34.5
	SD	1.7	39.3	12.9	1.4	2.7	0.9
3	average	133.5	283.7	79.0	23.3	47.2	37.4
	SD	6.2	10.5	14.2	0.8	4.2	3.5
7	average	236.6	390.2	123.4	30.9	64.8	42.3
	SD	6.8	50.8	29.1	1.5	4.5	2.0
14	average	364.9	590.2	200.0	40.7	83.9	45.6
	SD	11.8	49.4	27.4	1.5	5.5	1.2
22	average	445.9	916.0	301.9	55.6	106.7	57.8
	SD	62.2	47.4	14.9	2.0	2.1	4.6
29	average	609.0	792.2	276.5	56.4	113.4	75.9
	SD	11.0	10.3	19.0	1.3	5.6	2.8
35	average	707.0	913.9	330.2	67.6	131.2	88.5
	SD	10.5	18.9	7.5	3.4	3.7	4.7
43	average	697.3	984.1	366.0	72.9	104.9	33.0
	SD	19.0	14.4	8.3	2.7	13.4	7.7
49	average	764.8	1067.3	395.1	77.4	132.4	45.4
	SD	19.4	14.4	6.8	2.3	9.3	7.6
56	average	811.3	1155.0	442.4	79.8	132.4	55.1
	SD	31.5	57.0	18.3	3.3	9.3	5.0
63	average	871.3	992.7	447.8	83.2	142.7	48.7
	SD	46.4	475.3	20.4	1.5	10.6	1.7
70	average	908.7	1188.3	483.1	76.1	150.6	40.0
	SD	20.8	47.0	46.3	31.8	7.3	4.2
77	average	990.4	1200.3	493.6	73.7	106.3	33.6
	SD	78.0	20.5	33.1	37.6	78.7	10.1
84	average	1095.2	1227.3	511.5	90.5	164.3	71.2
	SD	70.5	34.0	42.3	3.5	4.9	03.9
91	average	1080.5	1269.4	505.9	100.4	141.0	60.7
	SD	41.8	31.7	20.9	11.6	67.3	05.3
98	average	995.1	1239.3	498.5	102.4	178.1	63.8
	SD	70.4	34.2	11.6	7.4	6.6	4.9
105	average	991.2	1200.0	497.4	98.4	186.8	62.3
	SD	103.4	76.3	30.9	13.8	14.3	5.1
115	average	1168.5	1303.2	563.0	113.1	172.9	104.4
	SD	27.7	20.5	17.6	10.4	82.5	6.2
133	average	1160.4	1296.1	578.7	114.2	212.1	89.4
	SD	41.8	17.3	18.6	10.1	13.9	10.1

147	average	1164.2	1299.5	557.2	122.3	179.8	90.6
	SD	30.7	76.1	27.0	10.4	86.5	8.0
161	average	1156.3	1363.4	604.0	127.6	198.9	15.3
	SD	25.3	26.7	15.0	12.5	15.6	3.0
175	average	1203.7	1375.7	619.7	140.5	208.7	20.8
	SD	16.5	19.1	7.2	15.2	12.3	12.9
189	average	1217.2	1352.1	605.1	129.0	249.2	13.2
	SD	63.0	52.7	27.7	15.1	22.2	0.0
202	average	1264.2	1385.8	626.8	121.6	246.5	13.2
	SD	36.0	19.2	15.2	39.9	30.9	0.0

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro- benzene	Styrene	Phenyl- cyclo- hexane	Benzo- phenone	Methyl- stearate
1	3.4	6.1	5.3	0.5	1.8	1.3
2	5.2	13.0	9.2	0.8	2.0	1.5
3	8.8	17.4	11.0	1.0	2.4	1.6
7	15.7	24.0	17.2	1.3	3.3	1.8
14	24.2	36.3	27.8	1.7	4.2	2.0
22	29.5	56.3	42.0	2.3	5.4	2.5
29	40.1	49.5	37.8	2.3	5.8	3.3
35	46.5	57.2	45.2	2.7	6.7	3.8
43	45.9	61.6	50.2	2.9	5.3	1.4
49	50.3	66.9	54.3	3.1	6.8	1.9
56	53.3	72.4	60.9	3.2	7.3	2.4
63	57.3	62.2	61.6	3.4	7.6	2.1
70	59.7	74.5	66.5	3.1	7.7	1.7
77	65.1	75.3	68.0	3.6	8.2	1.9
84	71.9	77.0	70.5	3.7	8.4	3.0
91	70.9	79.7	69.7	4.1	8.8	2.6
98	65.4	77.8	68.7	4.2	9.2	2.7
105	65.1	75.3	68.5	4.0	9.6	2.7
115	76.7	81.8	77.6	4.6	10.6	4.5
133	76.2	81.4	79.8	4.7	10.9	3.8
147	76.4	81.6	76.8	5.0	11.0	3.9
161	75.9	85.6	83.3	5.2	10.3	0.7
175	79.0	86.4	85.5	5.8	10.8	0.9
189	79.9	84.9	83.5	5.3	12.9	0.6
202	83.0	87.1	86.5	5.0	12.8	0.6

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	18.6	23.7	24.4	53.4	15.3	05.9	n.d.
2	n.d.	21.2	23.6	26.4	60.4	17.5	05.7	02.9
3	n.d.	24.3	24.6	20.3	65.2	20.4	06.8	01.6
7	n.d.	27.7	24.8	32.1	72.5	22.5	09.1	n.d.
14	n.d.	32.1	25.3	35.1	79.0	24.0	07.6	n.d.
22	n.d.	34.8	21.5	39.9	88.5	27.0	11.0	n.d.
29	06.0	39.0	61.3	38.5	88.0	27.2	04.0	n.d.
35	07.7	41.9	55.7	38.4	87.2	27.0	12.1	04.2
43	n.d.	42.0	52.7	38.7	85.7	16.7	13.8	n.d.
49	07.0	44.4	57.7	39.8	88.7	11.3	14.6	04.4
56	n.d.	45.0	28.5	39.9	91.1	27.4	13.5	n.d.
63	n.d.	46.1	23.4	40.5	91.0	26.7	13.1	04.0
70	n.d.	46.9	28.5	41.7	93.9	28.5	14.5	n.d.
77	n.d.	49.3	27.3	43.7	97.4	29.8	15.3	n.d.
84	06.8	52.9	26.6	43.3	96.8	29.0	12.6	n.d.
91	n.d.	50.9	30.9	43.5	96.7	29.6	13.9	n.d.
98	06.3	54.9	28.6	48.6	108.0	33.1	12.0	04.7
105	n.d.	55.7	33.2	49.3	110.0	34.0	11.9	05.0
115	08.9	58.8	34.9	48.2	108.8	33.3	12.6	05.2

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1		0.6	0.3	0.2	0.2	0.2	0.2	
2		0.7	0.3	0.2	0.2	0.2	0.2	0.3
3		0.8	0.3	0.2	0.2	0.3	0.2	0.2
7		0.9	0.3	0.2	0.3	0.3	0.3	
14		1.0	0.3	0.3	0.3	0.3	0.2	
22		1.1	0.3	0.3	0.3	0.4	0.3	
29	2.3	1.2	0.7	0.3	0.3	0.4	0.1	
35		1.3	0.7	0.3	0.3	0.4	0.4	0.4
43		1.3	0.6	0.3	0.3	0.2	0.4	
49	2.6	1.4	0.7	0.3	0.3	0.2	0.5	0.5
56		1.4	0.3	0.3	0.3	0.4	0.4	
63		1.4	0.3	0.3	0.3	0.4	0.4	0.4
70		1.5	0.3	0.3	0.4	0.4	0.4	
77		1.5	0.3	0.3	0.4	0.4	0.5	
84	2.6	1.7	0.3	0.3	0.4	0.4	0.4	
91		1.6	0.4	0.3	0.4	0.4	0.4	
98	2.4	1.7	0.3	0.4	0.4	0.5	0.4	0.5

105	1.7	0.4	0.4	0.4	0.5	0.4	0.5
115	1.8	0.4	0.4	0.4	0.5	0.4	0.6

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.17	0.62	0.07
0.33	0.72	0.09
1	1.58	0.05
2	1.89	0.06
5	2.55	0.49
12	2.74	0.40
16	2.79	0.13
30	2.68	0.25
44	2.68	0.16
64	2.59	0.13
92	2.46	0.42
126	2.48	0.30
159	2.50	0.12

16 Migration and weight increase in 95% ethanol at 20 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	25.8	30.4	17.3	3.5	18.7	26.0
	SD	0.9	2.2	1.2	0.4	2.6	1.0
2	average	23.2	46.8	19.4	5.1	23.9	27.0
	SD	1.9	4.8	1.2	85.0	4.2	0.9
3	average	25.6	52.7	20.7	6.5	25.8	28.3
	SD	3.3	5.0	1.9	3.9	2.5	2.1
7	average	36.7	73.3	25.9	13.3	29.5	29.9
	SD	0.6	1.3	1.5	0.5	4.1	1.7
14	average	53.6	106.9	37.3	16.3	32.6	27.4
	SD	0.6	1.9	2.1	0.8	4.9	0.7
22	average	35.3	148.7	57.6	21.8	40.1	31.0
	SD	2.6	23.3	11.5	1.5	2.3	1.0
29	average	80.6	223.6	56.7	26.4	37.6	37.4
	SD	2.3	6.8	1.8	5.3	1.4	1.9
35	average	113.9	217.6	67.4	28.0	43.5	43.1
	SD	13.4	22.2	1.9	2.2	5.4	0.9
43	average	101.4	222.8	76.8	34.6	32.2	
	SD	3.6	4.8	2.0	14.6	6.1	
49	average	117.8	253.4	87.4	32.2	36.1	
	SD	4.6	4.9	1.6	1.8	6.9	
56	average	136.7	279.6	98.8	31.5	41.2	
	SD	2.5	2.9	1.1	0.5	4.5	
63	average	166.4	300.3	106.8	32.6	42.3	
	SD	28.8	5.8	1.4	0.8	5.2	
70	average	167.2	304.5	112.9	33.1	42.3	
	SD	03.7	10.5	03.5	01.8	06.1	
77	average	174.9	334.6	120.0	33.4	49.9	
	SD	05.3	04.6	04.5	01.5	02.8	
84	average	225.8	349.2	124.3	33.9	42.8	
	SD	03.7	13.9	02.8	01.7	04.7	
91	average	239.1	382.5	131.0	32.7	45.2	
	SD	04.3	07.4	02.9	02.2	06.1	
98	average	216.9	371.8	126.3	33.2	45.5	
	SD	15.8	12.6	05.2	02.7	06.5	
105	average	268.0	415.2	143.3	35.6	54.0	
	SD	07.3	08.8	04.1	03.0	09.9	
115	average	292.7	437.2	158.3	39.9	59.2	
	SD	17.4	13.1	03.3	03.1	04.1	
133	average	334.2	467.0	165.0	43.1	60.9	
	SD	6.7	11.7	4.5	5.4	6.9	

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro- benzene	Styrene	Phenyl- cyclo- hexane	Benzo- phenone	Methyl- stearate
1	1.7	1.9	2.4	0.1	0.9	1.1
2	1.5	2.9	2.7	0.2	1.2	1.2
3	1.7	3.2	2.9	0.3	1.3	1.2
7	2.4	4.5	3.6	0.5	1.5	1.3
14	3.6	6.6	5.2	0.7	1.6	1.2
22	2.3	9.1	8.0	0.9	2.0	1.3
29	5.5	13.4	7.2	1.0	1.9	1.6
35	7.8	13.0	8.7	1.0	2.2	1.8
43	7.0	13.3	10.0	1.3	1.6	
49	8.1	15.2	11.5	1.2	1.8	
56	9.4	16.9	13.1	1.2	2.1	
63	11.5	18.2	14.2	1.2	2.1	
70	11.5	18.4	15.0	1.2	2.1	
77	12.1	20.3	16.0	1.3	2.5	
84	15.6	21.2	16.6	1.3	2.2	
91	16.5	23.3	17.5	1.2	2.3	
98	15.0	22.6	16.9	1.2	2.3	
105	18.5	25.3	19.2	1.4	2.7	
115	20.2	26.7	21.3	1.5	3.0	
133	23.1	28.5	22.2	1.7	3.1	

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	09.7	24.8	17.0	39.4	11.8	05.7	n.d.
2	n.d.	11.6	20.7	19.8	44.2	12.7	05.2	n.d.
3	n.d.	14.5	19.8	22.4	47.5	15.6	06.2	n.d.
7	n.d.	17.1	17.9	23.9	52.5	16.2	06.4	n.d.
14	n.d.	20.4	18.4	27.5	59.9	18.5	06.1	n.d.
22	n.d.	21.5	16.5	31.4	67.5	20.2	08.1	n.d.
29	03.8	24.9	47.6	31.5	68.0	20.9	07.7	n.d.
35	n.d.	26.2	45.5	33.7	60.4	30.9	11.2	02.1
43	n.d.	24.2	41.3	33.2	69.5	20.2	11.3	n.d.
49	n.d.	25.2	47.2	27.8	64.3	29.4	11.9	n.d.
56	n.d.	25.9	18.7	35.3	79.7	25.7	12.2	04.6
63	n.d.	27.4	21.1	23.6	62.0	22.6	10.9	n.d.
70	n.d.	28.3	21.9	36.7	79.9	23.8	12.3	n.d.
77	n.d.	27.7	21.7	36.7	79.8	24.5	12.1	n.d.
84	n.d.	29.4	23.4	37.9	83.5	24.9	13.0	n.d.
91	n.d.	30.4	23.6	26.8	86.0	25.9	12.0	n.d.
98	n.d.	29.8	28.2	40.4	87.6	26.5	12.3	n.d.
105	n.d.	30.9	31.1	42.8	93.7	29.9	10.0	03.9
115	n.d.	31.7	25.9	40.7	89.4	27.1	11.9	04.0
133			n.d.	41.5	100.1	29.2	11.4	10.8

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	0.3	0.3	0.1	0.1	0.2	0.2	n.d.
2	n.d.	0.4	0.2	0.1	0.2	0.2	0.2	n.d.
3	n.d.	0.5	0.2	0.2	0.2	0.2	0.2	n.d.
7	n.d.	0.5	0.2	0.2	0.2	0.2	0.2	n.d.
14	n.d.	0.6	0.2	0.2	0.2	0.3	0.2	n.d.
22	n.d.	0.7	0.2	0.2	0.3	0.3	0.3	n.d.
29	1.4	0.8	0.6	0.2	0.3	0.3	0.2	n.d.
35	n.d.	0.8	0.5	0.3	0.2	0.4	0.3	0.2
43	n.d.	0.8	0.5	0.2	0.3	0.3	0.4	n.d.
49	n.d.	0.8	0.6	0.2	0.2	0.4	0.4	n.d.
56	n.d.	0.8	0.2	0.3	0.3	0.4	0.4	0.5
63	n.d.	0.9	0.2	0.2	0.2	0.3	0.3	n.d.
70	n.d.	0.9	0.3	0.3	0.3	0.3	0.4	n.d.
77	n.d.	0.9	0.3	0.3	0.3	0.3	0.4	n.d.
84	n.d.	0.9	0.3	0.3	0.3	0.3	0.4	n.d.
91	n.d.	1.0	0.3	0.2	0.3	0.4	0.4	n.d.

98	n.d.	0.9	0.3	0.3	0.3	0.4	0.4	n.d.
105	n.d.	1.0	0.4	0.3	0.4	0.4	0.3	0.4
115	n.d.	1.0	0.3	0.3	0.3	0.4	0.4	0.4
133		1.7	n.d.	0.3	0.4	0.4	0.4	1.1

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.76	0.01
5	1.23	0.21
12	1.71	0.21
16	1.89	0.02
30	2.19	0.21
44	2.32	0.21
64	2.48	0.02
92	2.48	0.06
126	2.57	1.03
159	2.60	1.87

17 Migration and weight increase in 50% ethanol at 60 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	43.9	41.4	20.2	10.6	16.2	n.d.
	SD	16.0	13.1	08.1	01.5	06.7	n.d.
2	average	72.7	57.1	30.3	11.6	16.2	n.d.
	SD	19.2	25.6	03.8	01.1	02.6	n.d.
3	average	91.4	86.4	34.8	12.1	19.7	n.d.
	SD	21.8	30.4	10.1	02.3	02.3	n.d.
7	average	57.8	122.9	49.3	12.5	21.7	n.d.
	SD	60.7	62.4	21.2	02.9	04.4	n.d.
14	average	201.3	212.5	64.4	15.2	25.8	n.d.
	SD	51.4	64.7	46.6	01.8	04.3	n.d.
22	average	302.3	240.4	90.6	15.4	31.2	n.d.
	SD	91.8	113.3	33.4	03.3	02.5	n.d.
29	average	161.4	184.9	79.5	15.6	34.4	n.d.
	SD	22.4	31.9	08.6	01.5	07.6	n.d.
35	average	276.1	296.7	116.9	18.1	34.3	n.d.
	SD	n.d.	n.d.	47.0	03.2	03.9	n.d.
43	average	457.0	436.7	167.4	21.9	17.3	n.d.
	SD	n.d.	n.d.	16.5	02.2	06.7	n.d.
49	average	321.1	302.3	122.1	17.3	8.8	n.d.
	SD	n.d.	n.d.	76.8	07.4	05.4	n.d.
56	average	450.8	431.9	185.8	23.9	27.5	n.d.
	SD	n.d.	n.d.	22.8	02.8	06.3	n.d.
63	average	301.1	377.4	153.7	20.7	24.3	n.d.
	SD	n.d.	n.d.	48.0	05.0	04.1	n.d.
70	average	339.8	323.6	132.5	21.4	43.8	n.d.
	SD	n.d.	n.d.	49.7	04.8	04.1	n.d.
77	average	202.5	263.9	123.5	21.0	44.2	n.d.
	SD	n.d.	n.d.	44.3	05.2	06.3	n.d.
84	average	230.0	215.9	106.1	21.2	45.5	n.d.
	SD	n.d.	n.d.	19.0	04.3	08.5	n.d.
91	average	266.2	206.1	109.7	21.9	55.0	n.d.
	SD	n.d.	n.d.	24.8	02.8	24.5	n.d.
98	average	288.6	139.9	87.7	15.2	52.3	n.d.
	SD	n.d.	n.d.	62.7	15.1	13.7	n.d.
105	average	161.4	121.7	86.9	20.8	58.9	n.d.
	SD	n.d.	n.d.	54.7	06.4	17.9	n.d.
115	average	271.2	285.9	167.8	36.1	77.4	n.d.
	SD	n.d.	n.d.	95.4	15.2	19.1	n.d.

Note: Due to analytical interferences, migration of methyl stearate from HIPS in 50% ethanol at 60 °C can not be measured.

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	5.8	5.0	5.6	0.9	1.6	
2	9.5	6.9	8.4	0.9	1.6	
3	12.0	10.5	9.6	1.0	2.0	
7	7.6	15.0	13.6	1.0	2.2	
14	26.4	25.9	17.8	1.2	2.6	
22	39.6	29.3	25.0	1.2	3.1	
29	21.2	22.5	21.9	1.3	3.4	
35	36.2	36.1	32.2	1.5	3.4	
43	59.9	53.2	46.1	1.8	1.7	
49	42.1	36.8	33.7	1.4	0.9	
56	59.1	52.6	51.2	1.9	2.7	
63	39.5	46.0	42.4	1.7	2.4	
70	44.5	39.4	36.5	1.7	4.4	
77	26.5	32.1	34.0	1.7	4.4	
84	30.1	26.3	29.2	1.7	4.5	
91	34.9	25.1	30.2	1.8	5.5	
98	37.8	17.0	24.2	1.2	5.2	
105	21.2	14.8	24.0	1.7	5.9	
115	35.5	34.8	46.3	2.9	7.7	

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	16.6	12.3	21.5	45.3	12.8	n.d.	n.d.	n.d.
2	20.5	15.3	26.3	55.7	16.1	05.1	n.d.	n.d.
3	21.3	15.8	23.3	53.8	25.8	06.1	n.d.	n.d.
7	24.0	18.4	07.8	39.0	61.1	05.9	n.d.	n.d.
14	22.4	15.9	29.4	62.2	18.4	05.3	n.d.	n.d.
22	23.9	16.1	31.2	65.6	18.9	06.4	n.d.	n.d.
29	25.4	52.2	35.0	74.6	21.7	06.4	n.d.	n.d.
35	24.8	45.7	35.2	67.7	19.9	08.9	n.d.	02.1
43	21.9	30.2	29.5	60.5	16.8	06.2	n.d.	n.d.
49	20.0	12.2	22.1	38.8	10.6	03.3	n.d.	n.d.
56	26.6	19.2	31.8	67.7	19.7	08.4	n.d.	04.6
63	28.7	12.9	35.1	73.8	21.7	10.3	n.d.	n.d.
70	32.6	20.7	40.6	85.4	25.1	11.0	n.d.	n.d.
77	30.7	17.8	37.8	80.5	25.1	06.8	n.d.	n.d.
84	33.8	24.7	45.3	96.0	27.5	13.4	n.d.	n.d.
91	41.4	20.7	42.8	90.2	25.8	09.1	n.d.	n.d.

98	34.8	26.8	46.0	94.0	26.4	06.6	n.d.	n.d.
105	39.0	23.7	49.0	103.1	28.6	09.2	n.d.	03.9
115	42.2	28.9	51.7	108.8	30.7	13.0	06.7	04.0

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	6.3	0.4	0.3	0.3	0.0			
2	7.7	0.5	0.3	0.4	0.1	0.1		
3	8.0	0.5	0.3	0.4	0.1	0.1		
7	9.0	0.6	0.1	0.3	0.2	0.1		
14	8.4	0.5	0.3	0.5	0.1	0.1		
22	9.0	0.5	0.4	0.5	0.1	0.1		
29	9.6	1.6	0.4	0.6	0.1	0.1		
35	9.3	1.4	0.4	0.5	0.1	0.1		
43	8.3	0.9	0.3	0.5	0.1	0.1		
49	7.5	0.4	0.3	0.3	0.0	0.0		
56	10.0	0.6	0.4	0.5	0.1	0.1		
63	10.8	0.4	0.4	0.6	0.1	0.1		
70	12.3	0.7	0.5	0.6	0.1	0.2		
77	11.6	0.6	0.4	0.6	0.1	0.1		
84	12.7	0.8	0.5	0.7	0.1	0.2		
91	15.6	0.6	0.5	0.7	0.1	0.1		
98	13.1	0.8	0.5	0.7	0.1	0.1		
105	14.7	0.7	0.6	0.8	0.1	0.1		
115	15.9	0.9	0.6	0.8	0.1	0.2		

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
0.2	0.8	0.01
0.3	1.0	0.08
1	1.4	0.09
2	1.5	0.02
5	1.4	0.19
12	1.3	0.19
16	1.3	0.02
30	1.3	0.05
44	1.4	0.04
64	1.7	0.01
92	2.7	0.00
126	7.3	0.03
159	8.5	0.03
201	9.7	0.02
273	10.0	0.05

18 Migration and weight increase in 50% ethanol at 40 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	43.0	42.0	16.0	13.0	17.0	n.d.
	SD	03.5	03.3	01.6	00.7	03.7	n.d.
3	average	59.0	66.0	24.0	14.0	23.0	n.d.
	SD	09.3	05.2	01.4	05.8	03.2	n.d.
7	average	92.0	121.0	39.0	21.0	28.0	n.d.
	SD	04.2	15.6	04.8	01.2	01.6	n.d.
16	average	156.0	190.0	60.0	23.0	31.0	n.d.
	SD	09.7	12.7	03.8	01.2	02.7	n.d.
36	average	213.0	269.0	84.0	26.0	39.0	n.d.
	SD	23.8	31.2	09.3	02.6	04.8	n.d.
49	average	260.0	339.0	105.0	27.0	40.0	n.d.
	SD	35.6	39.8	11.6	02.1	01.6	n.d.
64	average	309.0	404.0	127.0	30.0	41.0	n.d.
	SD	32.4	41.7	10.1	04.4	05.7	n.d.

Note: Due to analytical interferences, migration of methylstearate from HIPS in 50% ethanol at 40 °C can not be measured.

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	2.8	2.6	2.2	0.5	0.9	
3	3.9	4.1	3.3	0.6	1.2	
7	6.1	7.4	5.4	0.9	1.4	
16	10.3	11.7	8.4	0.9	1.6	
36	14.1	16.5	11.7	1.1	2.0	
49	17.2	20.8	14.6	1.1	2.0	
64	20.5	24.8	17.7	1.2	2.1	

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	10.07	7.45	12.82	29.26	13.59	3.54	n.d.
3	n.d.	12.86	9.39	19.48	39.76	11.70	4.16	n.d.
7	n.d.	15.39	9.90	21.27	43.39	13.26	3.90	n.d.
16	n.d.	17.19	11.13	23.20	47.89	14.23	3.78	n.d.
36	n.d.	19.28	11.83	21.72	46.43	20.90	4.68	n.d.
49	n.d.	20.21	12.56	26.07	53.64	15.14	5.02	n.d.
64	n.d.	17.78	14.19	26.80	54.65	17.87	5.26	n.d.

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	0.3	0.1	0.1	0.1	0.2	0.1	n.d.
3	n.d.	0.4	0.1	0.1	0.1	0.2	0.1	n.d.
7	n.d.	0.5	0.1	0.2	0.2	0.2	0.1	n.d.
16	n.d.	0.5	0.1	0.2	0.2	0.2	0.1	n.d.
36	n.d.	0.6	0.1	0.2	0.2	0.3	0.1	n.d.
49	n.d.	0.6	0.1	0.2	0.2	0.2	0.2	n.d.
64	n.d.	0.6	0.2	0.2	0.2	0.2	0.2	n.d.

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
1	0.9	0.02
2	1.0	0.09
5	1.3	0.08
12	1.3	0.03
16	1.3	0.12
30	1.3	0.11
44	1.3	0.01
64	1.3	0.04
92	1.3	0.03
126	1.3	0.02
159	1.3	0.04

19 Migration and weight increase in 50% ethanol at 20 °C

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values and standard deviation (N=3)

Migration time [days]		Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	average	19	12	2	5	6	n.d.
	SD	10.9	05.5	00.0	00.6	00.0	n.d.
3	average	21	20	11	7	6	n.d.
	SD	13.9	04.3	01.3	00.8	00.0	n.d.
7	average	30	41	15	11	13	n.d.
	SD	16.6	09.4	02.2	02.4	03.1	n.d.
16	average	25	48	17	13	17	n.d.
	SD	16.4	11.2	03.8	01.5	03.1	n.d.
36	average	68	84	28	17	21	n.d.
	SD	14.6	15.8	03.0	01.1	02.8	n.d.
49	average	59	84	26	16	21	n.d.
	SD	22.7	18.9	04.7	02.3	03.2	n.d.
64	average	89	125	33	18	24	n.d.
	SD	69.9	47.0	59.9	02.8	03.1	n.d.

Note: Due to analytical interferences, migration of methyl stearate from HIPS in 50% ethanol at 20 °C can not be measured.

Relative migration - Results in %. Average values

Migration time [days]	Toluene	Chloro-benzene	Styrene	Phenyl-cyclo-hexane	Benzo-phenone	Methyl-stearate
1	1.3	0.7	0.3	0.2	0.3	
3	1.4	1.2	1.5	0.3	0.3	
7	2.0	2.5	2.1	0.5	0.7	
16	1.7	3.0	2.4	0.5	0.9	
36	4.5	5.2	3.9	0.7	1.1	
49	3.9	5.2	3.6	0.7	1.1	
64	5.9	7.7	4.6	0.8	1.2	

Migration Kinetics - Results in $\mu\text{g}/\text{dm}^2$. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	02.2	n.d.	06.6	14.0	07.0	n.d.	n.d.
3	n.d.	03.2	11.7	11.2	23.2	10.8	n.d.	n.d.
7	n.d.	07.2	06.1	14.1	28.1	08.2	n.d.	n.d.
16	n.d.	08.5	06.3	13.8	30.6	13.6	02.9	n.d.
36	n.d.	06.7	06.9	12.0	27.8	16.6	02.8	n.d.
49	n.d.	10.6	08.0	13.7	31.0	19.4	03.3	n.d.
64	n.d.	11.8	07.7	18.1	35.4	09.5	03.6	n.d.

Relative migration - Results in %. Average values

Migration time [days]	Oligo-1	Oligo-2	Oligo-3	Oligo-4	Oligo-5	Oligo-6	Oligo-7	Oligo-8
1	n.d.	0.1	n.d.	0.0	0.1	0.1	n.d.	n.d.
3	n.d.	0.1	0.1	0.1	0.1	0.1	n.d.	n.d.
7	n.d.	0.2	0.1	0.1	0.1	0.1	n.d.	n.d.
16	n.d.	0.3	0.1	0.1	0.1	0.2	0.1	n.d.
36	n.d.	0.2	0.1	0.1	0.1	0.2	0.1	n.d.
49	n.d.	0.3	0.1	0.1	0.1	0.3	0.1	n.d.
64	n.d.	0.4	0.1	0.1	0.1	0.1	0.1	n.d.

Weight increase - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.5	0.03
5	0.7	0.14
12	0.9	0.12
16	1.0	0.03
30	1.1	0.13
44	1.1	0.11
64	1.2	0.04
92	1.2	0.06
126	1.2	0.05
159	1.4	0.04
201	1.2	0.08
273	1.3	0.06

20 Weight increase in 20% ethanol at 60. 40 and 20 °C

Weight increase at 60 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.7	0.004
5	0.7	0.003
12	0.7	0.003
16	0.7	0.001
30	0.7	0.010
44	0.8	0.009
64	0.8	0.007
92	0.9	0.005
126	1.6	0.004
159	2.6	0.011
201	3.8	0.014
273	5.2	0.015

Weight increase at 40 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.5	0.022
5	0.6	0.056
12	0.6	0.053
16	0.6	0.007
30	0.6	0.007
44	0.6	0.009
64	0.6	0.011
92	0.6	0.020
126	0.6	0.023
159	0.6	0.023

Weight increase at 20 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.2	0.009
5	0.4	0.071
12	0.4	0.060
16	0.4	0.026
30	0.5	0.037
44	0.5	0.046
64	0.5	0.014

92	0.5	0.020
126	0.5	0.021
159	0.5	0.007

21 Weight increase in 10% ethanol at 60. 40 and 20 °C

Weight increase at 60 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.4	0.01
5	0.4	0.02
12	0.4	0.02
16	0.4	0.02
30	0.4	0.01
44	0.5	0.01
64	0.5	0.00
92	0.7	0.01
126	1.1	0.02
159	1.7	0.01
201	2.3	0.01
273	3.3	0.00

Weight increase at 40 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.2	0.010
5	0.3	0.047
12	0.3	0.048
16	0.3	0.006
30	0.3	0.005
44	0.3	0.004
64	0.3	0.008
92	0.3	0.011
126	0.3	0.015
159	0.3	0.004

Weight increase at 20 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.1	0.005
5	0.2	0.028
12	0.2	0.027
16	0.2	0.005
30	0.2	0.022
44	0.3	0.018
64	0.3	0.003
92	0.2	0.006
126	0.3	0.006
159	0.3	0.010

22 Weight increase in 3% acetic acid at 60. 40 and 20 °C

Weight increase at 60°C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.3	0.010
5	0.4	0.129
12	0.4	0.114
16	0.6	0.081
30	0.6	0.037
44	0.7	0.036
64	0.8	0.019
92	0.9	0.042
126	0.9	0.116
159	1.1	0.085
201	1.1	0.072
273	1.2	0.051

Weight increase at 40 °C - Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.1	0.028
5	0.2	0.030
12	0.2	0.029

16	0.3	0.002
30	0.3	0.010
44	0.3	0.015
64	0.3	0.015
92	0.3	0.022
126	0.3	0.028
159	0.4	0.005
201	0.4	0.013
273	0.6	0.013

Weight increase at 20 °C- Results in %. Average values and standard deviation (N=3)

Time contact [days]	Weight increase [%]	SD
2	0.1	0.003
5	0.1	0.012
12	0.2	0.010
16	0.2	0.010
30	0.2	0.021
44	0.2	0.014
64	0.2	0.006
92	0.2	0.005
126	0.2	0.003
159	0.3	0.015