NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO

Task report

Analysis of materials and articles, intended to come into contact with food

Evidence code:	2131b-18/45410-18/109804
Customer:	KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA ROSALNICE 5 8330 Metlika
Order:	Order according to offer no. 213b-18/45410/13-LJ-18, Kolpa d.d. Metlika, 28.09.2018
Contractor:	Oddelek za okolje in zdravje Maribor Oddelek za kemijske analize živil, vod in drugih vzorcev okolja Maribor
Head of task:	Andreja Zorič, univ. dipl. kem.
Sample caretaker:	Andreja Zorič, univ. dipl. kem.
Maribor,	11.04.2019

Head of task:

Andreja Zorič, univ. dipl. kem.

Electronically signed Andreja Zorič, univ. dipl. kem. at 11.04.2019 07:02:10

Oddelek za okolje in zdravje Maribor
Head of branch:

mag. Emil Žerjal, univ. dipl. inž. kem. tehnol.

The time of the certified signature of deputy and information about the certificate are shown at the top of the first page of the document.

Sample information

Sample:	Kerrock - food contact material
Sample number:	18/109804
Purpose:	Analysis on owner request
Customer:	KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA, ROSALNICE 5, 8330 Metlika
Sample taken by:	KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA
Time of sampling:	
Sample received by:	Tatjana Škrabec
Place and time of receiving:	Ljubljana, 28.09.2018 08:00

Sample description

Food contact material in the form of plates.

Sample preparation

Migration testing conditions

Migration testing conditions for determination of overall migration (method EN 1186-1: 2002, Regulation 10/2011):
- food simulant: 10% ethanol, 3% acetic acid, olive oil
- time, temperature of contact:
10% ethanol, 3% acetic acid: 10days, 40°C (8.10.-18.10.2018, LJ)
olive oil: 10days, 40°C (5.10.-15.10.2018, LJ)
- type of contact: total immersion
- surface of sample material/volume of simulant: 1dm2 / 100ml

Migration testing conditions for analysis of identification of volatile organic migrants (method EN 13130-1: 2004, Regulation 10/2011):
- food simulant: 3% acetic acid
- time, temperature of contact: 10dni, 40°C (25.1.-4.2.2019, LJ)
- type of contact: total immersion
- surface of sample material/volume of simulant: 3.36dm2/558ml (corresponds to 1dm2/166ml)

Migration testing conditions for determination of specific migration of metals and primary aromatic amines (method EN 13130-1: 2004, Regulation 10/2011):
- food simulant: 3% acetic acid
- time, temperature of contact: 10days, 60°C (8.10.-18.10.2018, LJ)
- type of contact: total immersion
- surface of sample material/volume of simulant: 1dm2 / 100ml

Because high specific migration of aluminium was determined, additional migration test was performed taking in account information (submitted by the customer) about actual conditions of use of the material.
Migration testing conditions for determination of specific migration of aluminium (method EN 13130-1: 2004, Regulation 10/2011):
- food simulant: 3% acetic acid
- time, temperature of contact: 3days, 40°C, three times repeated (10.12.-13.12.2018, 14.12.-17.12.2018, 17.12.-20.12.2018, LJ)
- type of contact: total immersion
- surface of sample material/volume of simulant: 1dm2 / 100ml.
Specific migration of aluminium was determined in the third migration solution.

Assessment of the results

Shown are all results with annexes.

Parameter	Result	Unit	Norm
Food simulant 3% acetic acid (10days)			
Elements			
Barium	<0.01	mg/kg	1 (1)
Cobalt	<0.01	mg/kg	0.05 (1)
Copper	<0.01	mg/kg	5 (1)
Iron	0.08	mg/kg	48 (1)
Lithium	<0.01	mg/kg	0.6 (1)

Elements			
Manganese	0.32	mg/kg	0.6 (1)
Zinc	0.02	mg/kg	5 (1)
Antimony	<0.01	mg/kg	0.04 (2)
Organic parameters			
Identification of organic compounds	Priloga		/ (3)
Basic parameters			
Overall migration into 3% acetic acid	<1	mg/dm^2	10 (1)
Primary aromatic amines			
Aniline	<0.0025	mg/kg	/ (1)
m-Phenylenediamine	<0.0025	mg/kg	/ (1)
2-naftilamin	<0.0025	mg/kg	/ (1)
o-Toluidine	<0.0025	mg/kg	/ (1)
4-Chloro-Aniline	<0.0025	mg/kg	/ (1)
2-metoksianilin *(o-Anisidine *)*	<0.0025	mg/kg	/ (1)
6-metoksi m-toluidin *(2-Methoxy-5-Methylaniline *)*	<0.0025	mg/kg	/ (1)
2,4-toluendiamin *(Toluene-2,4-diamine *)*	<0.0025	mg/kg	/ (1)
2,4-Dimetilanilin *(2,4-Dimethylaniline *)*	<0.0025	mg/kg	/ (1)
2,4,5-Trimethylaniline	<0.0025	mg/kg	/ (1)
2,6-toluendiamin *(2,6-Diaminotoluene *)*	<0.0025	mg/kg	/ (1)
2,6-Dimethylaniline	<0.0025	mg/kg	/ (1)
4,4'-Methylenedi-o-toluidine	<0.0025	mg/kg	/ (1)
4-Aminobifenil	<0.0025	mg/kg	/ (1)
4-chloro-o-Toluidine	<0.0025	mg/kg	/ (1)
4,4'-Thiodianiline	<0.0025	mg/kg	/ (1)
4,4'-Methylenedianiline	<0.0025	mg/kg	/ (1)
4,4'-Oxydianiline	<0.0025	mg/kg	/ (1)
2-Chloroaniline	<0.0025	mg/kg	/ (1)

The limit value of the specific migration of primary aromatic amines is 0.010 mg/kg and refers to the sum of the primary aromatic amines present in the food simulant.

Food simulant 3% acetic acid (3days)			
Elements			
Aluminium	0.46	mg/kg	1 (1)
Food simulant olive oil (10days)			
Basic parameters			
Overall migration into olive oil	<4	mg/dm^2	10 (1)
Food simulant 10%ethanol (10days)			
Basic parameters			
Overall migration into 10 vol.% ethanol	<1	mg/dm^2	10 (1)

Indications in brackets are identical as in enclosed test reports

Criterion-Limits according to:

(1) Regulation (EU) 10/2011 of 14 January 2011, on plastic materials and articles intended to come into contact with food, amended by 321/2011, 1282/2011, 1183/2012, 202/2014, 865/2014, 174/2015, 1416/2016, 2017/752, 2018/79, 213/2018, 831/2018, Art.12, Annex I, II

(2) Regulation (EU) 10/2011 of 14 January 2011, on plastic materials and articles intended to come into contact with food, amended by 321/2011, 1282/2011, 1183/2012, 202/2014, 865/2014, 174/2015, 1416/2016, 2017/752, 2018/79, 213/2018, 831/2018, Annex I, II

(3) Regulation (EC) No 1935/2004 of 27 October 2004, on materials and articles intended to come into contact with food and repealing Directives 80/590/EEC and 89/109/EEC, 3. člen , Materiali in izdelki namenjeni za stik z živili

The sample of composite plastic material intended for food contact was analysed for overall migration into food simulants 10% ethanol, 3% acetic acid and olive oil and for specific migration primary aromatic amines and elements barium, cobalt, copper, iron, lithium, manganese, zinc, antimony and aluminium into food simulant 3% acetic acid.
Analysis of identification of organic substances in simulant 3% acetic acid after migration testing ("GCMS screening") was also performed.
Overall migration and specific migration of primary aromatic amines were not determined in the simulants in concentrations higher than quantification limits of analytical methods used.
Specific migration of elements were lower than the limits for specific migration of elementa in Annex II of Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food (with ammendments).

According to the results of analysis, we evaluate the sample COMPLIANT with :
- art.10. and 12. of Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food (with ammendments)
- point 1a and b of art.3 of Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004 on materials and articles intended to come into contact with food and repealing Directives 80/590/EEC and 89/109/EEC

as regards overall migration into simulants 10% ethanol, 3% acetic acid and olive oil and specific migration of primary aromatic amines and elements barium, cobalt, copper, iron, lithium, manganese, zinc, antimony and aluminium into simulant 3% acetic acid
for contact with food for up to three days at temperature up to 40°C.

Note:
Determined specific migration (10.2mg/kg) of aluminium at migration conditions which simulate long-term contact of sample material with food exceeded specific migration limit (1mg/kg) from Annex II of Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food (with ammendments).
Additional analysis was carried out taking into account the information, submitted by the customer, about the conditions of use of sample . Determined specific migration of of aluminium (0.46 mg/kg) at migration conditions which simulate contact of sample material with food for up to three days does not exceed limit value.

Comment to the results of analysis of identification of volatile organic substances in simulant 20% ethanol (Annex to the report "Identifikacija organskih spojin z GC/MSD")

Analysis showed presence of some substances which are included in the list of authorised substances for use in plastic materials in Annex I of Commission Regulation (EU) No. 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food (with ammendments):
- 2-methylbutyl ester 2-propenojske kisline (butyl ester metacrylic acid); FCM ref.no.184, SML (specific migration limit) - group restriction specification is 6mg/kg (expressed ad metacrylic acid)
-2-ethyl-1-hexanol; FCM ref.not.209, SML is 30mg/kg
- dodecanoic acid; FCM ref.no.330, SML is not specified.

We also identified substances which are not included in the list of authorised substances but can be impurities in the substances used for the production or a reaction intermediates formed during the production process or a decomposition or reaction products (non.intentionaly or are other substances which are not regulated by Regulation 10/2011 :
-2,6-dimethyl-4-heptanon (CAS 108-83-8); substance is included in the list of substances in permitted for use in printing inks in Swiss Ordinance for food contact materials Ordinance of the FDHA on Materials and Articles (RS 817.023.21), section 8b, Annex 10, 1.1.2017, List of permitted substances for the production of packaging inks, and related requirements. Specific migration limit (SML) is 0.05mg/kg.
- 4,6-dimethyl -2-heptanone (CAS 19549-80-5);
- 2,2'-azobis 2-methyl- propanenitril (CAS 78-67-1); the substance is included in the list of substances which are used in printing inks inks in Swiss Ordinance for food contact materials Ordinance of the FDHA on Materials and Articles (RS 817.023.21), section 8b, Annex 10, 1.1.2017; it is classified in the group of substances which have not been subjected to any officially recognised scientific testing (such as that of the scientific committee of the EFSA). The use of these substances is permitted if no transfer of these substances to food or food simulants can be detected.
- methylen dimethyl ester butanedioic acid (CAS 617-52-7)
- 4-(1,1-dimethylethyl) cis-cyclohexanol (CAS 937-05-3)
- 4-(1,1- dimethylethyl) cyclohexanol (CAS 98-52-2)
- 4-(1,1- dimethylethyl)- cyclohexanon (CAS 98-53-3)
- H-isoindol-1,3(2H)-dion ; the substance is included in the list of substances which are used in printing inks inks in Swiss Ordinance for food contact materials Ordinance of the FDHA on Materials and Articles (RS 817.023.21), section 8b, Annex 10, 1.1.2017; it is classified in the group of substances which have not been subjected to any officially recognised scientific testing (such as that of the scientific committee of the EFSA). The use of these substances is permitted if no transfer of these substances to food or food simulants can be detected.
- diethyl phthalate (CAS 84-66-2)
- dodecanamid (CAS 1120-16-7).

None of the substances identified is categorised as CMR substance (carcinogenic, mutagenic or toxic for reproduction) of categories 1A or 1B according to the criteria of Annex I of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (with ammendments).

Fotografije vzorca/ Sample photo

Report annexes:

Testing report with evidence code 2131b-18/45410-18/109804-T
Report of chemical analyses with evidence code 1011-18/45410-18/109804-K

NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO
CENTER ZA OKOLJE IN ZDRAVJE

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Evidence code:2131b-18/45410-18/109804-T

Testing report

Sample: Kerrock - food contact material

Sample number: 18/109804

Purpose: Analysis on owner request

Title: Analysis of materials and articles, intended to come into contact with food

Head of task: Andreja Zorič, univ. dipl. kem.

Customer: KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA, ROSALNICE 5, 8330 Metlika

Order: Order according to offer no. 213b-18/45410/13-LJ-18, Kolpa d.d. Metlika, 28.09.2018

Sample status: The sample complies with criteria for the reception

Sampling

Date and hour:

Taken by: KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA

Sample receiving

Date and hour: 28.09.2018 08:00

Received by: Tatjana Škrabec

Issue date: 11.04.2019

Analytic results

Parameter	Result Note	Unit	Expressed as/on	Method Place of execution	Start/End
Food simulant 3% acetic acid (10days)					
Basic parameters					
Overall migration into 3% acetic acid	<1	mg/dm^2		SIST EN 1186-3: 2002, LJ	24.10.18 25.10.18
	The reported value is average of measurements on three samples. Because of technical reasons the surface of the sample in migration testing was not exactly 1dm2, but the ratio surface to volume of simulant was 1dm2/100ml.				
Food simulant 10%ethanol (10days)					
Basic parameters					
Overall migration into 10 vol.% ethanol	<1	mg/dm^2		SIST EN 1186-3: 2002, LJ	24.10.18 25.10.18
	The reported value is average of measurements on three samples. Because of technical reasons the surface of the sample in migration testing was not exactly 1dm2, but the ratio surface to volume of simulant was 1dm2/100ml.				

Locations of analyses:
LJ - OOZ Maribor, Grablovičeva ulica 44, Ljubljana

Head of branch:
mag. Emil Žerjal, univ. dipl. inž. kem. tehnol.

Electronically signed by deputy Alenka Labović, univ. dipl. inž. kem. tehnol. at 11.04.2019 14:24:22

NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO
CENTER ZA KEMIJSKE ANALIZE ŽIVIL, VOD IN DRUGIH VZORCEV OKOLJA

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014
Results marked with # or **non-accredited** relate to not-accredited activity

Evidence code: 1011-18/45410-18/109804-K

Report of chemical analyses

Sample: Kerrock - food contact material
Sample number: 18/109804
Purpose: Analysis on owner request
Title: Analysis of materials and articles, intended to come into contact with food
Head of task: Andreja Zorič, univ. dipl. kem.
Customer: KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA, ROSALNICE 5, 8330 Metlika
Order: Order according to offer no. 213b-18/45410/13-LJ-18, Kolpa d.d. Metlika, 28.09.2018
Sample status: The sample complies with criteria for the reception

Sampling
Date and hour:
Taken by: KOLPA PROIZVODNJA IN PREDELAVA PLASTIČNIH MAS, D.D. METLIKA

Sample receiving
Date and hour: 28.09.2018 08:00
Received by: Tatjana Škrabec

Issue date: 10.04.2019

Analytic results

Results marked with # refer to **not accredited** activity

Parameter	Result Note		Unit	Expressed as/on	Method Place of execution	Start/End
Food simulant 3% acetic acid (10days)						
Elements						
Barium	<0.01	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Cobalt	<0.01	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Copper	<0.01	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Iron	0.08	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Lithium	<0.01	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Manganese	0.32 ± 0.06	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Zinc	0.02 ± 0.004	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Aluminium	10.2 ± 0.5	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Antimony	<0.01	#	mg/kg		ISO 17294-2:2016 modif., LJ	19.10.18 19.10.18
Organic parameters						
Identification of organic compounds	Priloga	#			IM/GC-MS/SOP 1008, LJ	05.02.19 06.02.19
	For the identification of detected compounds, we used Wiley Registry 10th Edition / NIST 2014 Mass Spectral Library and/or our own standard mass spectral Library					
Primary aromatic amines						
Aniline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18

Evidence code: 1011-18/45410-18/109804-K

Analytic results

Results marked with # refer to **not accredited** activity

Parameter	Result Note		Unit	Expressed as/on	Method Place of execution	Start/End
m-Phenylenediamine	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2-naftilamin	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
o-Toluidine	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4-Chloro-Aniline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
o-Anisidine	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2-Methoxy-5-Methylaniline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
Toluene-2,4-diamine	<0.0025	#	mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2,4-Dimethylaniline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2,4,5-Trimethylaniline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2,6-Diaminotoluene	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2,6-Dimethylaniline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4,4'-Methylenedi-o-toluidine	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4-Aminobifenil	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4-chloro-o-Toluidine	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4,4'-Thiodianiline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4,4'-Methylenedianiline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
4,4'-Oxydianiline	<0.0025		mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
2-Chloroaniline	<0.0025	#	mg/kg		ND-IV-NLZOH-OKAMB-LJ-9 97, izdaja 7, LJ	12.11.18 13.11.18
Food simulant 3% acetic acid (3days)						
Elements						
Aluminium	0.46 ± 0.09	#	mg/kg		ISO 17294-2:2016 modif., LJ	20.12.18 20.12.18
Food simulant olive oil (10days)						
Basic parameters						
Overall migration into olive oil	<4		mg/dm^2		SIST EN 1186-2:2002, LJ	15.10.18 19.10.18
	The reported value is average of measurements on three samples. Because of technical reasons the surface of the sample in migration testing was not exactly 1dm2, but the ratio surface to volume of simulant was 1dm2/100ml. The result is corrected for loss of volatile substances.					

Locations of analyses:

LJ - OKA Maribor, Grablovičeva ulica 44, Ljubljana

Evidence code: 1011-18/45410-18/109804-K

The reported uncertainty is the expanded uncertainty calculated using coverage factor equal to 2, which gives a reliability of approximately 95% or is for the pesticide residues in foodstuffs evaluated according to document SANTE/11813/2017.

Attachment

Head of branch:
dr. Boštjan Križanec, univ. dipl. inž. kem. tehnol.

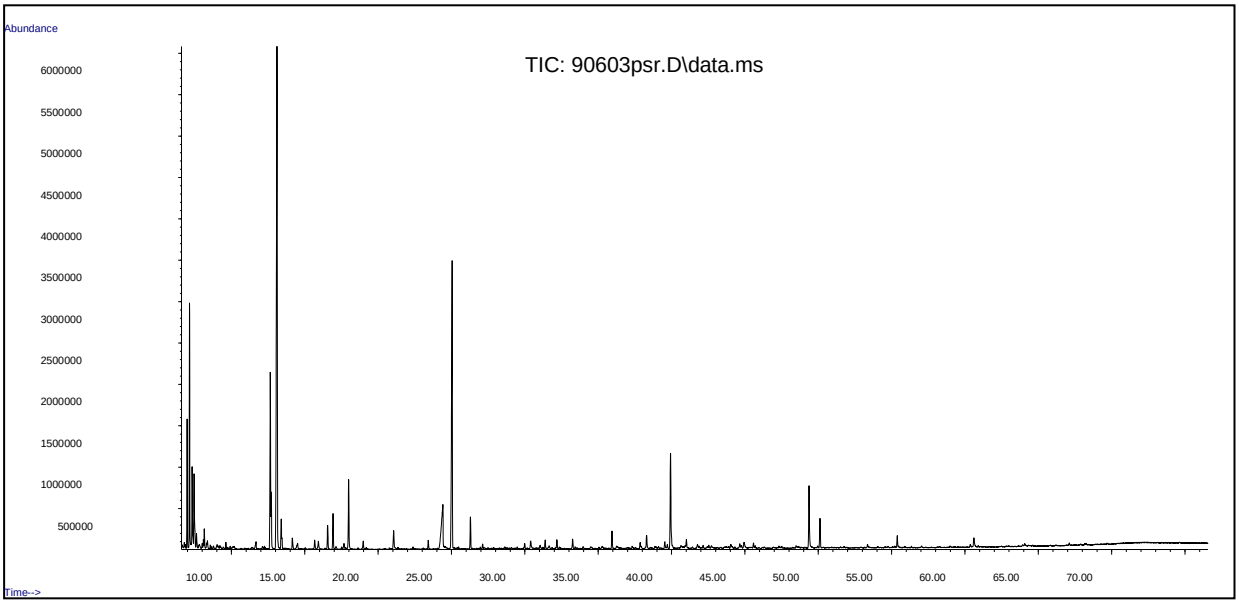
Electronically signed dr. Boštjan Križanec, univ. dipl. inž. kem. tehnol. at 10.04.2019 18:10:29

NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO
Prvomajska ulica 1, 2000 Maribor
CENTER ZA KEMIJSKE ANALIZE ŽIVIL, VOD IN DRUGIH VZORCEV OKOLJA
Oddelek za kemijske analize živil, vod in drugih vzorcev okolja Maribor
Prvomajska ulica 1, 2000 Maribor, **T:** (02) 45 00 170, **F:** (02) 45 00 227, **E:** mb.cka@nlzoh.si

IDENTIFIKACIJA ORGANSKIH SPOJIN Z GC/MSD

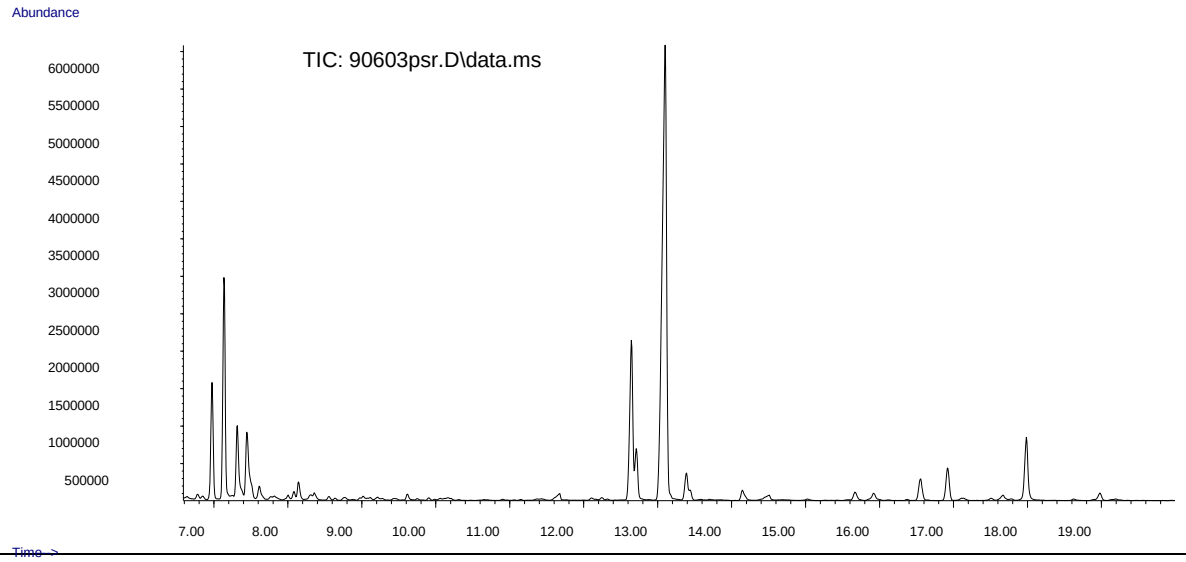
Oznaka vzorca	Kerrock - material namenjen za stik z živili
Laboratorijska številka	2018_109804
Odgovorni analitik	Mojca Erjavec, Matej Stegu
Datum analize	5. 2. 2019
Oceno izdelal (-a)	Mojca Erjavec, Matej Stegu
Datum izdelave ocene	6. 2. 2019

CELOTNI KROMATOGRAM EKSTRAKTA VZORCA



KROMATOGRAM VZORCA RAZDELJEN PO »RT« INTERVALIH

A



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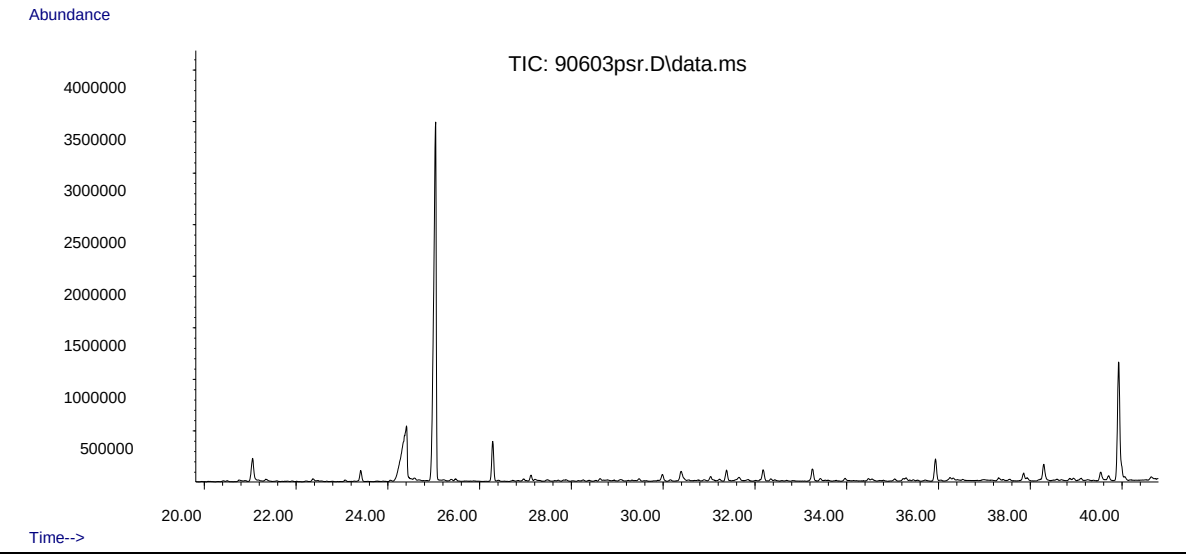

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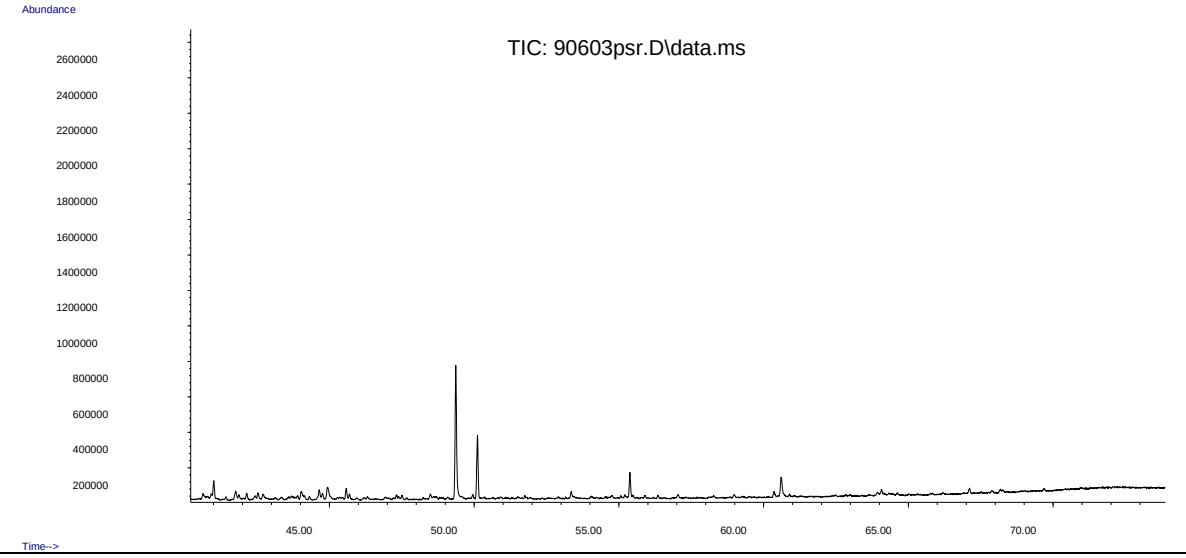
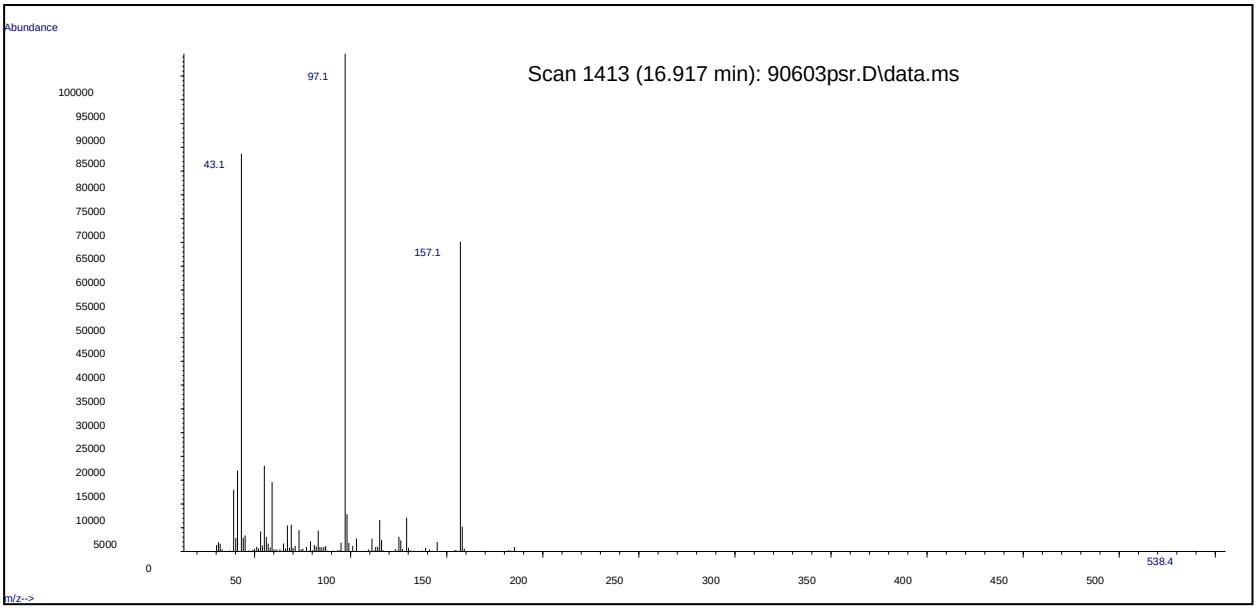


IDENTIFIKACIJA ORGANSKIH SPOJIN

Datoteka	C:\msdchem\1 \DATA\2019\PSR_SCANi\90603psr.D
Priprava vzorca	18_109804_Kerrock, migracija v 3% ocetno kisl., ekstr. z diklormetanom
Datum/Čas analize	6. 2. 2019

zadrževalni čas (min)	najverjetnejša identifikacija	CAS
6,97	2,6-dimetil-4-heptanon	108-83-8
7,14	2-metil butil ester 2 propenojske kisline	97-88-1
7,32	4,6-dimethyl-2-heptanon	19549-80-5
8,08	2,2'-azobis 2-metil- propanenitril	78-67-1
8,15	2-etil-1-heksanol	104-76-7
9,62	metilen dimetil ester butanediojske kisline	617-52-7
12,64	4-(1,1-dimetiletil) cis-cikloheksanol	937-05-3
13,08	4-(1,1-dimetiletil) cikloheksanol	98-52-2
13,39	4-(1,1-dimetiletil)-cikloheksanon	98-53-3
16,97	neidentificirana spojina 1	/
18,04	alkil alkohol	/
21,05	1H-isoindol-1,3(2H)-dion	85-41-6
24,55	dodekanojska kislina	143-07-7
25,03	dietil ftalat	84-66-2
30,42	dodekanamid	1120-16-7

MASNI SPEKTER NEIDENTIFICIRANE SPOJINE 1



KOMENTAR:

Modelno raztopino 3% ocetne kisline po migracijskem preskusu ekstrahiramo z diklormetanom in analiziramo s plinsko kromatografijo v povezavi z masno spektrometrijo (GC/MS). Masne spektre zaznanih spojin primerjamo s spektri iz standardne knjižnice masnih spektrov NIST ter s knjižnico masnih spektrov Wiley.

V ekstraktu smo zaznali v zgornji tabeli omenjene spojine. Za spojino, ki jo nismo uspeli identificirat, prilagamo masni spekter. Ostale spojine so del kemijskega ozadja analitskega postopka, oziroma spojine, ki so prisotne tudi v kontrolnem (slepem) vzorcu.