



NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO

Prvomajska ulica 1, 2000 Maribor

CENTER ZA OKOLJE IN ZDRAVJE

Oddelek za okolje in zdravje Maribor

Prvomajska ulica 1, 2000 Maribor, T: (02) 45 00 260, F: (02) 45 00 148, E: mb.coz@nlzohsi

Analysis of the materials, intended to come into contact with water

Maribor, may 2016

Title: Analysis of the materials, intended to come into contact with water

Contractor: National Laboratory of Health, Environment and Foodstuffs
CENTRE OF ENVIRONMENT AND HEALTH
Department of Environment and Health Maribor
Prvomajska ulica 1, 2000 Maribor
Telephone: +386 2 4500 260
Telefax: +386 2 4500 148
Transaction account: 01100-6000043285

Customer: MCU COATINGS INTERNATIONAL
PARTIDA LA OLLA 1 EDIF. ATALAYA DEL MAR 6, SPAIN, 3590 Altea (Alicante),
Španija

Evidence code: 213b-15/10691-15/20767-V/p1
replaces 213b-15/10691-15/20767-V

Order: E-mail of 03.09.2015

Branch: Commodities for general use

Head of branch: Lucija Smojver, B. Sc. Chem. Techn. 

Operator: Lucija Smojver, B. Sc. Chem. Techn.

Maribor, 24.05.2016

DEPARTMENT OF ENVIRONMENT AND HEALTH MARIBOR

Head: 

M. Sc. Emil Žerjat, B. Sc. Chem. Techn.



BASIC DATA

Sample: 8521 NS-MCU Mastic NS light grey

Evidence code: 213b-15/10691-15/20767-V/p1
replaces 213b-15/10691-15/20767-V

Sample number: 15/20767

Subsamples: 15/767/A1 - 1st migration period, 15/767/A2 - 2nd migration period, 15/767/A3 - 3rd migration period, 15/767/B1 - 1st migration period, 15/767/B2 - 2nd migration period, 15/767/B3 - 3rd migration period

Owner: MCU COATINGS INTERNATIONAL, PARTIDA LA OLLA 1 EDIF. ATALAYA DEL MAR 6, SPAIN, 3590 Altea (Alicante), Španija

Payed by: MCU COATINGS INTERNATIONAL, PARTIDA LA OLLA 1 EDIF. ATALAYA DEL MAR 6, SPAIN, 3590 Altea (Alicante), Španija

Customer: MCU COATINGS INTERNATIONAL, PARTIDA LA OLLA 1 EDIF. ATALAYA DEL MAR 6, SPAIN, 3590 Altea (Alicante), Španija

Sample taken by: Customer

Place of sampling: Chemcolor Sevnica, d.o.o.

Sample received by: Aleksandra Moik

Sample received on: 03.09.2015

Sample tested till: 16.03.2016

Description of the sample

Name and designation:
8521 NS-MCU Mastic NS light grey

The sample represent glass plates in dimensions of 8,5cm x 12cm, which are on one side treated with the tested coating.

The samples for testing was prepared by the customer.

The sample received in 09/2015 was given to analytical procedure in 02/2016. Meanwhile it was stored in dry/dark place at room temperature.

Intended use: contact with drinking water

Analytic results

Technical basis for the migration tests is the final draft of the Slovenian recommendations: Recommendations for the assessment of the suitability of materials and products intended to come into contact with drinking water according to the requirements of the Rules on drinking water, march 2016, NLZOH-NIJZ-ZAG.

Migration test was performed according to:

modif. SIST EN 12873-1:2004: Influence of materials on water intended for human consumption - Influence due to migration - Part 1: Test method for non-metallic and non-cementitious factory made products (contact with cold and warm water).

Conditions of migration test - cold water:

- time of migration: 3 x 72 hours
- temperature of migration: $(23 \pm 2)^{\circ}\text{C}$
- test simulant: deionized water (eluate 1, 2, 3)
- surface of the sample: 2 dm²
- volume of the simulant in contact with sample: 0,4 L

Conditions of migration test - warm water:

- time of migration: 3 x 24 hours
- temperature of migration: $(60 \pm 2)^{\circ}\text{C}$
- test simulant: deionized water (eluate 1, 2, 3)
- surface of the sample: 2 dm²
- volume of the simulant in contact with sample: 0,4 L

Analytic results are enclosed.

Opinion and assessment

The results of analysis of the basic parameters show that the eluates are clear, with no odor and no taste. The results of measurements of migration of certain parameters in eluates 1, 2 and 3, did not show significant increasing of migration levels. The measured and calculated concentrations of total organic carbon (TOC), expressed in the test report, are after all three migration periods (cold water test) and after 1st, 2nd and 3rd migration period (warm water test) lower than 0,5 mg/l.

Measured and calculated specific migrations of: elements-metals, primary aromatic amines, derivatives of BADGE, bisphenol A and highly volatile aromatic hydrocarbons (benzene, toluene, m,p-xylene, o-xylene) are lower than the recommended limits, according to chapter 5.3 of the final draft of Recommendations for the assessment of the suitability of materials and products intended to come into contact with drinking water according to the requirements of the Rules on drinking water, march 2016, NLZOH-NIJZ-ZAG.

With regard to the results of the measured concentrations of migrations into selected simulant, the sample "8521 NS-MCU Mastic NS light grey", no. sample 15/20767, has been found to comply with the stipulations of:

- Art. 13 of Act Regulating the Sanitary Suitability of Foodstuff, Products and Materials Coming into Contact with Foodstuffs, OJRS No. 52/2000, 42/2002, 47/2004;
- Art. 33 of Rules on Drinking Water, OJRS No. 19/2004, 35/2004, 26/2006, 92/2006, 25/2009.

Comment on the GC/MS SCAN, Identification of organic compounds:

In the extract of the water eluate of the sample with dichloromethane, the GC/MSD analysis was performed in order to identify the presence of organic compounds.

We identified the presence of the compound which is listed in the Regulation 10/2011, on plastic materials and articles intended to come into contact with food, Annex I:

- diphenylmethane-4,4'-diisocyanate, FCM=198, SML=1 mg/kg of g in final product expressed as isocyanate moiety, allowed as monomer or other starting substance in polymerisation process;

In the sample eluate extract were also detected compound derivatives of isocyanates, traces of phthalates (diethylphthalate and diisobutylphthalate), 4-toluenesulfonamide, which is a typical plasticizer found in different types of resins and also other compounds were detected, typically found in resins or coatings. According to the measured concentration of total organic carbon – TOC ($< 0,5 \text{ mg/l}$) in the 3rd eluate, we estimate the concentrations of these substances being in traces.

Sample photographs



Enclosure

Annex 1: Test report with evidence code 213b-15/10691-15/20767-A/p1 replaces 213b-15/10691-15/20767-A.

ANNEX 1

**Test report with evidence code
213b-15/10691-15/20767-A/p1 replaces 213b-
15/10691-15/20767-A**



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: mbcl@nlzohs.si



SLOVENSKA
AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Results, marked with #
refer to not accredited
activity.

TEST REPORT

Evidence code: 213b-15/10691-15/20767-A/p1
replaces 213b-15/10691-15/20767-A

Place, date: Maribor, 24.05.2016

Task

Title: Analysis of the materials, intended to come into contact with water

Operator: Lucija Smojver, B. Sc. Chem. Techn.

Customer: MCU COATINGS INTERNATIONAL, PARTIDA LA OLLA 1 EDIF. ATALAYA DEL MAR
6, SPAIN, 3590 Altea (Alicante), Španija

Order: E-mail of 03.09.2015

Sample

Number: 15/20767

Code: 8521 NS-MCU Mastlic NS light grey

Delivered by: By Post

Time of receipt:

Taken by: Customer

03.09.2015 13:10

Department for Chemical Analysis Maribor

Head:

dr. Boštjan Krizanec, B. Sc. Chem. Techn. 2/1



Results

- Results refer to not accredited activity.

Parameter	Result	Norm	Unit	Expr. as/on	Method	Start	End
	Remark						

General parameters

Surface	#	2,0		dm ²		, Mb	
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Volume	#	400		ml		, Mb	
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1st migration period 72 hours at 23°C

organoleptic parameters

Odour	#	NO ODOUR			Interna metoda - vonj, Mb	19.02.2016	19.02.2016
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Visible characteristics	#	CLEAR			Interna metoda - videz, Mb	19.02.2016	19.02.2016
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Taste	#	NO TASTE			Interna metoda - okus, Mb	19.02.2016	19.02.2016
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Physico-chemical parameters

Evidence code: 213b-15/10691-15/20767-A/p1
replaces 213b-15/10691-15/20767-A

Place, date: Maribor, 24.05.2016

Results

- Results refer to not accredited activity.

Parameter	Result	Norm	Unit	Expr. as/on	Method	Start End
	Remark					
Physico-chemical parameters						
Turbidity	# 0,20		NTU		ISO7027 - brez poglavja 5: 1999, Mb	19.02.2016 19.02.2016
Overall migration into distilled water	<2,0	10	mg/dm ²		SIST EN 1186-3: 2002 [307], Mb	09.02.2016 24.02.2016
Total organic carbon - TOC	# 0,4 calculated result according to CF		mg/l	C	ISO 8245: 1999, Mb	22.02.2016 22.02.2016
2nd migration period 72 hours at 23°C						
organoleptic parameters						
Odour	# NO ODOUR				Interna metoda - vonj, Mb	19.02.2016 19.02.2016
Visible characteristics	# CLEAR				Interna metoda - videz, Mb	19.02.2016 19.02.2016
Taste	# NO TASTE				Interna metoda - okus, Mb	19.02.2016 19.02.2016
Physico-chemical parameters						
Turbidity	# 0,10		NTU		ISO7027 - brez poglavja 5: 1999, Mb	19.02.2016 19.02.2016
Overall migration into distilled water	<2,0	10	mg/dm ²		SIST EN 1186-3: 2002 [307], Mb	09.02.2016 24.02.2016
Total organic carbon - TOC	# 0,4 calculated result according to CF		mg/l	C	ISO 8245: 1999, Mb	22.02.2016 22.02.2016
3rd migration period 72 hours at 23°C						
organoleptic parameters						
Odour	# NO ODOUR				Interna metoda - vonj, Mb	19.02.2016 19.02.2016
Visible characteristics	# CLEAR				Interna metoda - videz, Mb	19.02.2016 19.02.2016
Taste	# NO TASTE				Interna metoda - okus, Mb	19.02.2016 19.02.2016
Physico-chemical parameters						
Turbidity	# 0,20		NTU		ISO7027 - brez poglavja 5: 1999, Mb	19.02.2016 19.02.2016
Overall migration into distilled water	<2,0	10	mg/dm ²		SIST EN 1186-3: 2002 [307], Mb	09.02.2016 24.02.2016
Total organic carbon - TOC	# 0,4 calculated result according to CF		mg/l	C	ISO 8245: 1999, Mb	22.02.2016 22.02.2016
Elements						
Aluminium	# 8 calculated result according to CF	200	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Arsenic	# <1,0	10	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016

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Place, date: Maribor, 24.05.2016

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Parameter	Remark	Result	Norm	Unit	Expr. as/on	Method	Start End
Elements							
Cadmium	#	<0,10	5	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Cobalt	#	<1,0		µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Chromium	#	<1,0	50	µg/l	Cr	ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Copper	#	<1,0	2000	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Iron	#	<0,10	0,2	mg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Mercury	#	<0,10	1	µg/l		SIST EN ISO 12846, modif.: 2012, Mb	03.03.2016 03.03.2016
Manganese	#	<1,0	50	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Nickel	#	<1,0	20	µg/l	Ni	ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Lead	#	<1,0	10	µg/l	Pb	ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Antimony	#	<1,0	5	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Selenium	#	<1,0	10	µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Tin	#	<1,0		µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Zinc	#	<10		µg/l		ISO 17294-2: 2003, Mb	25.02.2016 25.02.2016
Organic parameters							
BADGE		<5,00		mg/l		SIST EN 15136- modif.: 2006, Lj	15.03.2016 16.03.2016
BADGE x HCl		<5,00		mg/l		SIST EN 15136- modif.: 2006, Lj	15.03.2016 16.03.2016
BADGE x H2O		<5,00		mg/l		SIST EN 15136- modif.: 2006, Lj	15.03.2016 16.03.2016
BADGE x H2O x HCl		<5,00		mg/l		SIST EN 15136- modif.: 2006, Lj	15.03.2016 16.03.2016
BADGE x 2HCl		<5,00		mg/l		SIST EN 15136- modif.: 2006, Lj	15.03.2016 16.03.2016
BADGE x 2H2O		<5,00		mg/l		SIST EN 15136- modif.: 2006, Lj	15.03.2016 16.03.2016
Bisphenol A	#	<0,5	0,6	mg/l		ISO 18857-2: 2008, Mb	03.03.2016 04.03.2016

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Place, date: Maribor, 24.05.2016

Results

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Parameter	Result	Norm	Unit	Expr. as/on	Method	Start End
	Remark					
Organic parameters						
Identification of organic compounds	# enclosed Rezultat je priloga				IM/GC-MS/ SOP 1008, Mb	02.03.2016 15.03.2016
Highly volatile aromatic HC						
Benzene	<0,20		µg/l		EN ISO 15680: 2003 [103], Mb	23.02.2016 25.02.2016
Toluene	<0,20		µg/l		EN ISO 15680: 2003 [103], Mb	23.02.2016 25.02.2016
m,p- xylene	<0,40		µg/l		EN ISO 15680: 2003 [103], Mb	23.02.2016 25.02.2016
o- xylene	<0,20		µg/l		EN ISO 15680: 2003 [103], Mb	23.02.2016 25.02.2016
Primary aromatic amines						
Aniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
m-Phenylenediamine	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2-Naphthylamine	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
o-Toluidine	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
4-Chloro-Aniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2-Methoxy aniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2-Methoxy-5-Methylaniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
Toluene-2,4-diamine	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2,4-Dimethylaniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2,4,5-Trimethylaniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2,6-Diaminotoluene	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
2,6-Dimethylaniline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
4-Aminobiphenyl	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016

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replaces 213b-15/10691-15/20767-A

Place, date: Maribor, 24.05.2016

Results

- Results refer to not accredited activity.

Parameter	Result	Norm	Unit	Expr. as/on	Method	Start End
	Remark					
Primary aromatic amines						
4-chloro-o-Toluidine	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
4,4'-Thiodianiline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
4,4'-Methylenedianiline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
4,4'-Oxydianiline	# <0,0025		mg/kg		IM/LC-MS/MS/ SOP 997.05, Lj	22.02.2016 02.03.2016
1st migration period 24 hours at 60°C						
organoleptic parameters						
Odour	# NO ODOUR				Interna metoda - vonj, Mb	19.02.2016 19.02.2016
Visible characteristics	# CLEAR				Interna metoda - videz, Mb	19.02.2016 19.02.2016
Taste	# NO TASTE				Interna metoda - okus, Mb	19.02.2016 19.02.2016
Physico-chemical parameters						
Turbidity	# 0,60		NTU		ISO7027 - brez poglavja 5: 1999, Mb	19.02.2016 19.02.2016
Overall migration into distilled water	<2,0	10	mg/dm ²		SIST EN 1186-3: 2002 ^[307] , Mb	09.02.2016 24.02.2016
Total organic carbon - TOC	# 0,4 calculated result according to CF		mg/l	C	ISO 8245: 1999, Mb	22.02.2016 22.02.2016
2nd migration period 24 hours at 60°C						
organoleptic parameters						
Odour	# NO ODOUR				Interna metoda - vonj, Mb	19.02.2016 19.02.2016
Visible characteristics	# CLEAR				Interna metoda - videz, Mb	19.02.2016 19.02.2016
Taste	# NO TASTE				Interna metoda - okus, Mb	19.02.2016 19.02.2016
Physico-chemical parameters						
Turbidity	# 0,30		NTU		ISO7027 - brez poglavja 5: 1999, Mb	19.02.2016 19.02.2016
Overall migration into distilled water	<2,0	10	mg/dm ²		SIST EN 1186-3: 2002 ^[307] , Mb	09.02.2016 24.02.2016
Total organic carbon - TOC	# 0,4 calculated result according to CF		mg/l	C	ISO 8245: 1999, Mb	22.02.2016 22.02.2016
3rd migration period 24 hours at 60°C						
organoleptic parameters						

Evidence code: 213b-15/10691-15/20767-A/p1
replaces 213b-15/10691-15/20767-A

Place, date: Maribor, 24.05.2016

Results

- Results refer to not accredited activity.

Parameter	Result	Norm	Unit	Expr. as/on	Method	Start End
	Remark					
organoleptic parameters						
Odour	# NO ODOUR				Interna metoda - vonj, Mb	19.02.2016 19.02.2016
Visible characteristics	# CLEAR				Interna metoda - videz, Mb	19.02.2016 19.02.2016
Taste	# NO TASTE				Interna metoda - okus, Mb	19.02.2016 19.02.2016
Physico-chemical parameters						
Turbidity	# 0,10		NTU		ISO7027 - brez poglavja 5: 1999, Mb	19.02.2016 19.02.2016
Overall migration into distilled water	<2,0	10	mg/dm ²		SIST EN 1186-3: 2002 ^[307] , Mb	09.02.2016 24.02.2016
Total organic carbon - TOC	# 0,4 calculated result according to CF		mg/l	C	ISO 8245: 1999, Mb	22.02.2016 22.02.2016
Organic parameters						
Identification of organic compounds	# enclosed Rezultat je priloga				IM/GC-MS/ SOP 1008, Mb	02.03.2016 15.03.2016
Highly volatile aromatic HC						
Benzene	<0,20		µg/l		EN ISO 15680: 2003 ^[103] , Mb	23.02.2016 25.02.2016
Toluene	<0,20		µg/l		EN ISO 15680: 2003 ^[103] , Mb	23.02.2016 25.02.2016
m,p- xylene	<0,40		µg/l		EN ISO 15680: 2003 ^[103] , Mb	23.02.2016 25.02.2016
o- xylene	<0,20		µg/l		EN ISO 15680: 2003 ^[103] , Mb	23.02.2016 25.02.2016

[103] Avtomatski vzorčevalnik, 25 ml vzorca, koncentriranje vzorca s preprihovanjem ("purge") ter zajemanje na pasti ("trap"), detekcija z MSD.

[307] Given as the average of three measurements.

- Art. 13 of Act Regulating the Sanitary Suitability of Foodstuff, Products and Materials Coming into Contact with Foodstuffs, OJRS No. 52/2000, 42/2002, 47/2004;

- Art. 33 of Rules on Drinking Water, OJRS No. 19/2004, 35/2004, 26/2006, 92/2006, 25/2009;

- Commission Regulation (EU) No. 10/2011 of 14 January 2011, on plastic materials and articles intended to come into contact with food. Materials intended to come with contact with water

Commission Regulation (EU) No 10/2011 (amended with: 321/2011, 1282/2011, 1183/2012, 202/2014, 174/2015), on plastic materials and articles intended to come into contact with food; Annex I, II.

Measurement uncertainty data are available on the request of the client.

Results refer only to the tested sample. The test report shall not be reproduced except in full without written approval of the department.

The sample was kept in accordance to the requirements until testing.

All additional information on testing is available at the department.

Additions

Addition 1: Identification of organic compounds

Addition 2: Identification of organic compounds

ANNEX 1



NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO

Prvomajska ulica 1, 2000 Maribor

CENTER ZA KEMIJSKE ANALIZE ŽIVIL, VOD IN DRUGIH VZORCEV OKOLJA

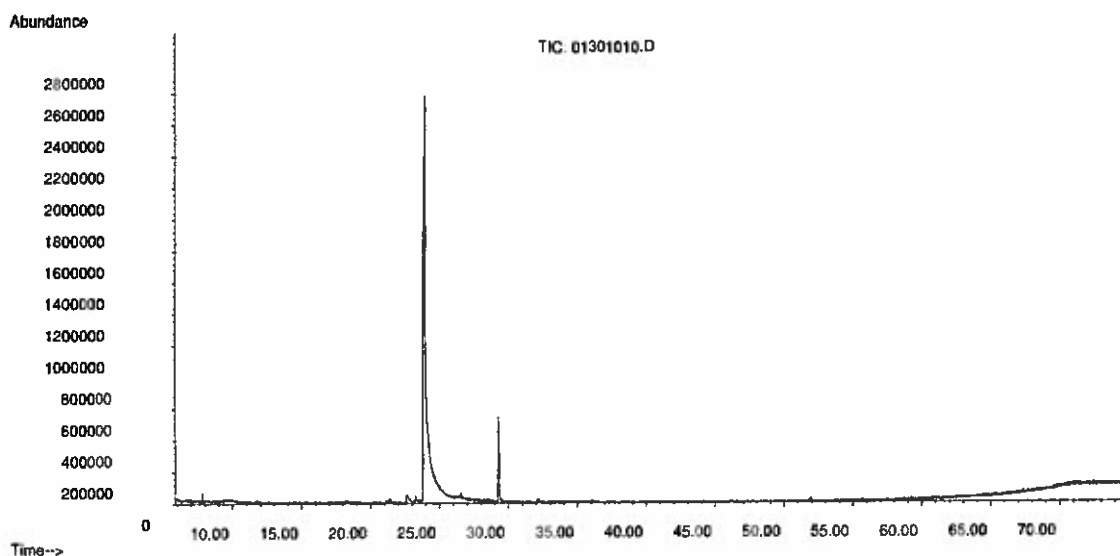
Oddelek za kemijske analize živil, vod in drugih vzorcev okolja Maribor

Prvomajska ulica 1, 2000 Maribor, T: (02) 45 00 170, F: (02) 45 00 227, E: mb.cka@nlzohsi

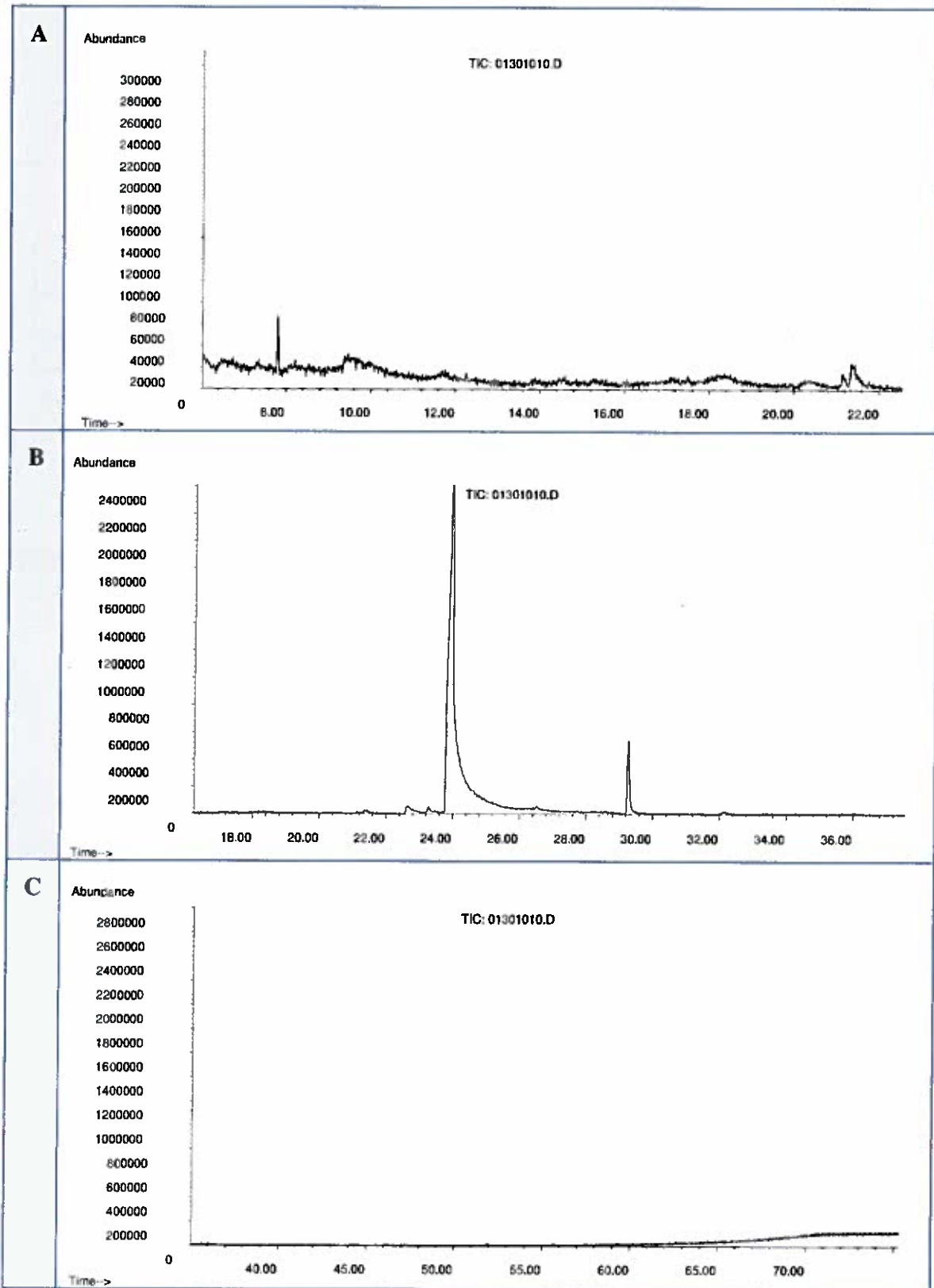
IDENTIFIKACIJA ORGANSKIH SPOJIN Z GC/MSD

Vrsta vzorca	0306: Posoda, pribor, embalaža iz umetnih mas
Oznaka vzorca	8521 NS-MCU Mastic NS light grey ; tretji migracijski preskus-hv
Laboratorijska številka	2015_20767/A3
Odgovorni analitik	Matej Stegu, Ernest Vončina
Datum analize	02.03.2016
Oceno izdelal (-a)	Matej Stegu, Ernest Vončina
Datum izdelave ocene	15.03.2016

CELOTNI KROMATOGRAM EKSTRAKTA VZORCA



KROMATOGRAM VZORCA RAZDELJEN PO »RT« INTERVALIH



IDENTIFIKACIJA ORGANSKIH SPOJIN

Datoteka	C:\msdchem\data\DATA 2016\03_MAREC\160302\01301010.D
Priprava vzorca	15_20767/A3, migracija v modelno raztopino, ekstrakcija z metilen kloridom
Datum/Čas analize	02.03.2016

zadrževalni čas (min)	najverjetnejša identifikacija	CAS
21,39	dietil ftalat (sled)	84-66-2
23,90	4-toluen sulfonamid	70-55-3

KOMENTAR:

Vzorec modelne raztopine po migracijskem preskusu smo ekstrahirali z metilen kloridom in analizirali s plinsko kromatografijo v povezavi z masno spektrometrijo (GC/MS). Masne spektre zaznanih spojin primerjamo s spektri iz standardne knjižnice masnih spektrov NIST ter dodatno še s knjižnico masnih spektrov Willey ali pa podajamo lastno interpretacijo masnega spektra.

V ekstraktu prevladuje toluensulfonamid, ostale spojine so v sledovih oziroma so del ozadja analitskega postopka.

ANNEX 2



NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO

Prvomajska ulica 1, 2000 Maribor

CENTER ZA KEMIJSKE ANALIZE ŽIVIL, VOD IN DRUGIH VZORCEV OKOLJA

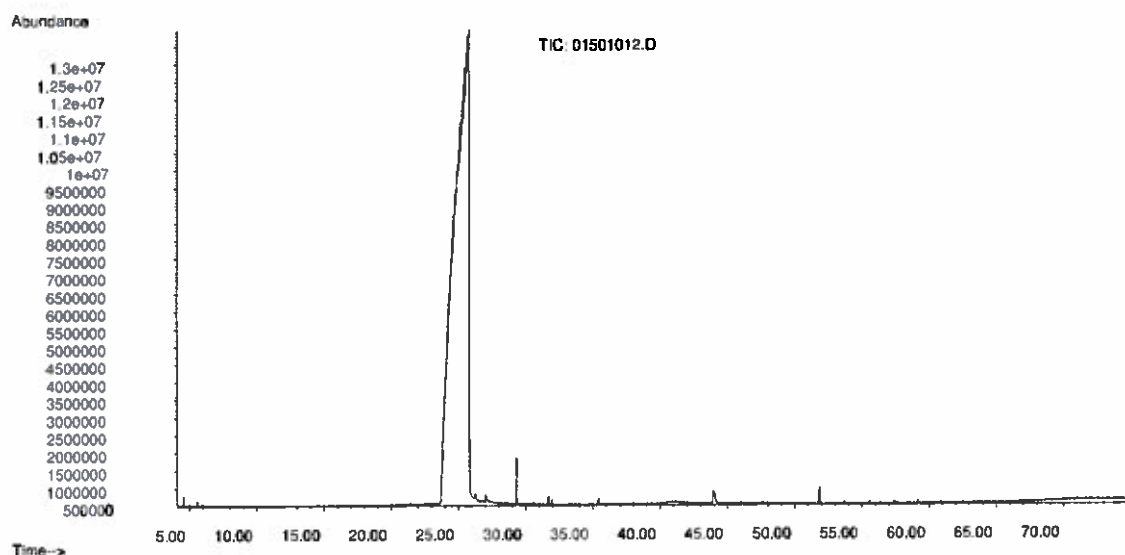
Oddelek za kemijske analize živil, vod in drugih vzorcev okolja Maribor

Prvomajska ulica 1, 2000 Maribor, T: (02) 45 00 170, F: (02) 45 00 227, E: mbacka@nlzoh.si

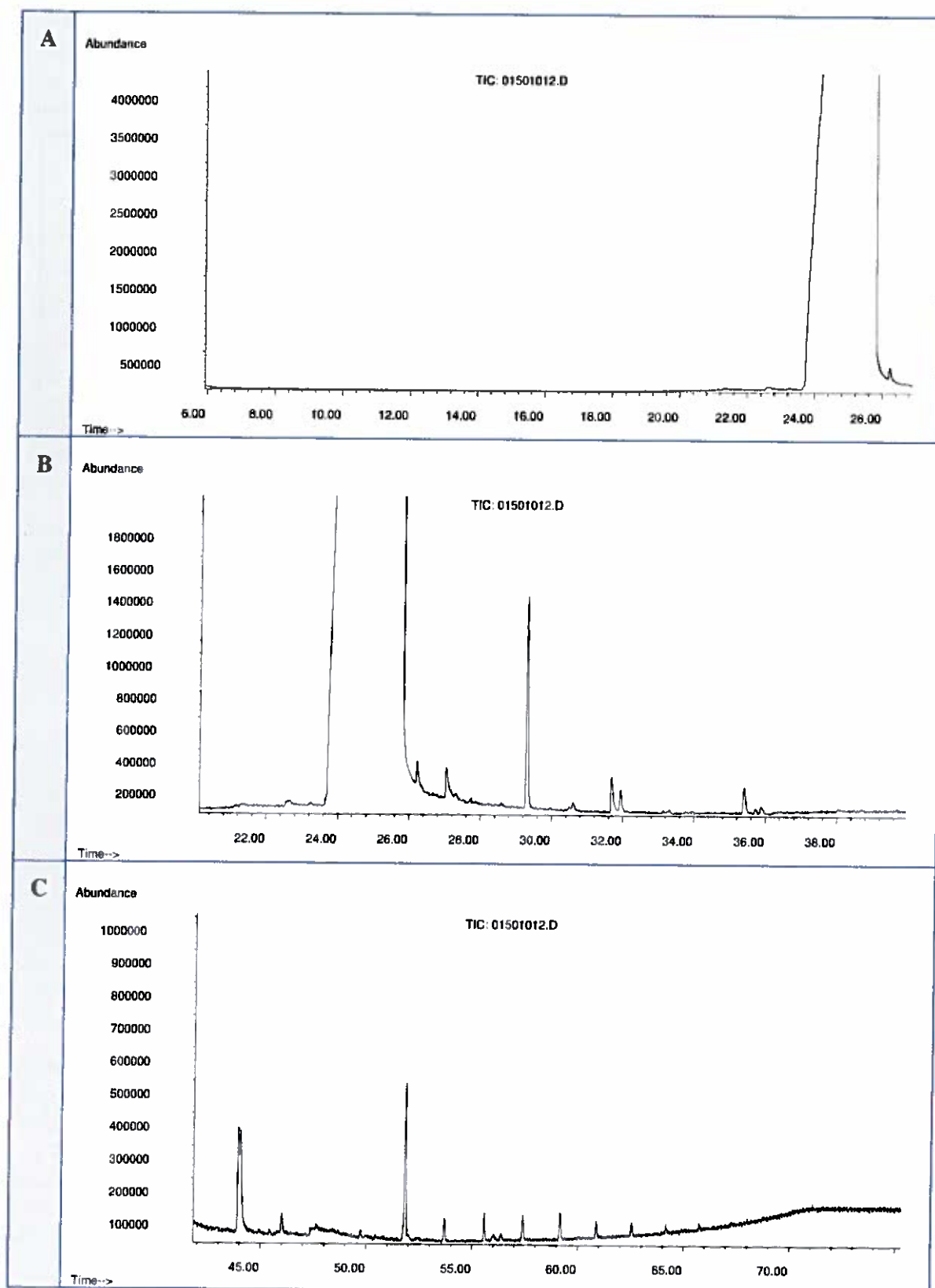
IDENTIFIKACIJA ORGANSKIH SPOJIN Z GC/MSD

Vrsta vzorca	0306: Posoda, pribor, embalaža iz umetnih mas
Oznaka vzorca	8521 NS-MCU Mastic NS light grey ; tretji migracijski preskus-tv
Laboratorijska številka	2015_20767/B3
Odgovorni analitik	Matej Stegu, Ernest Vončina
Datum analize	02.03.2016
Oceno izdelal (-a)	Matej Stegu, Ernest Vončina
Datum izdelave ocene	15.03.2016

CELOTNI KROMATOGRAM EKSTRAKTA VZORCA



KROMATOGRAM VZORCA RAZDELJEN PO »RT« INTERVALIH

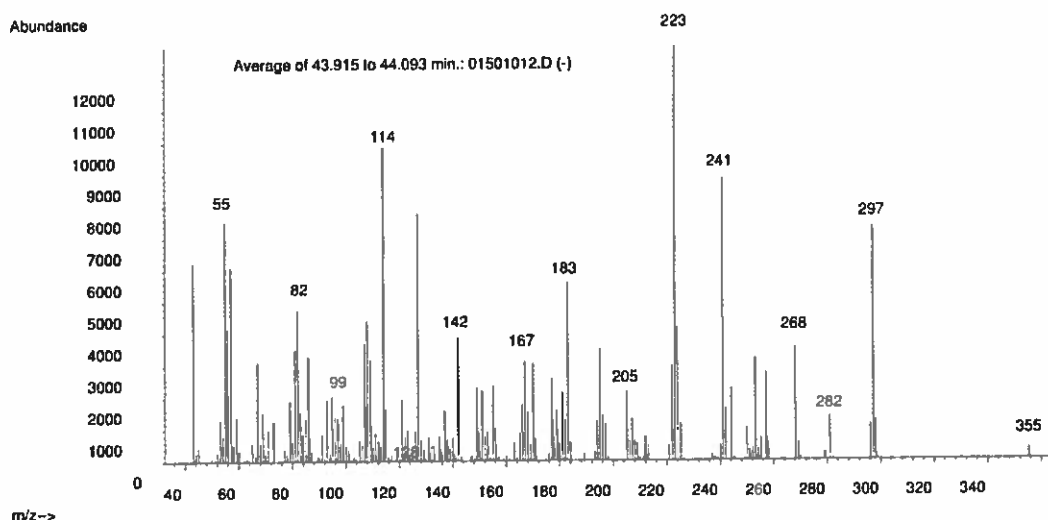


IDENTIFIKACIJA ORGANSKIH SPOJIN

Datoteka	C:\msdchem\data\DATA 2016\03_MAREC\160302\01401011.D
Priprava vzorca	15_20767/B3, migracija v modelno raztopino, ekstrakcija z metilen kloridom
Datum/Čas analize	02.03.2016

zadrževalni čas (min)	najverjetnejša identifikacija	CAS
23,90	4-toluen sulfonamid	70-55-3
27,06	etil N-(2,6-dimetilfenil)karbamat	/
29,29	diizobutil ftalat	84-69-5
31,69	p,p-difenil metan diizocianat	101-68-8
43,79	neidentificirana spojina	
51,81	skvalen	
52-65	nasičeni alifatski ogljikovodiki	

MASNI SPEKTER NEIDENTIFICIRANE SPOJINE



KOMENTAR:

Vzorec modelne raztopine po migracijskem preskusu smo ekstrahirali z metilen kloridom in analizirali s plinsko kromatografijo v povezavi z masno spektrometrijo (GC/MS). Masne spektre zaznanih spojin primerjamo s spektri iz standardne knjižnice masnih spektrov NIST ter dodatno še s knjižnico masnih spektrov Willey ali pa podajamo lastno interpretacijo masnega spektra.

V ekstraktu prevladuje toluensulfonamid, ostale spojine so v sledovih oziroma so del ozadja analitskega postopka. Za spojino, ki je nismo uspeli nedvoumno identificirati, prilagamo masni spekter.