



**ZAVOD ZA ZDRAVSTVENO VARSTVO MARIBOR**

Prvomajska ulica 1, 2000 Maribor, Slovenia <http://www.zzv-mb.si>

**ENVIRONMENTAL PROTECTION INSTITUTE**

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VAT Number: SI30447046    Transactional Account Number: 01100-6030926630

**Analysis of materials intended for contact with drinking water**

Maribor, february 2013

**Title:** Analysis of materials intended for contact with drinking water

**Contractor:** Zavod za zdravstveno varstvo Maribor

Prvomajska ulica 1, 2000 Maribor

Telephone: +386 2 4500170

Telefax: +386 2 4500227

Transaction account: 01100-6030926630

**Customer:** Chemcolor Sevnica d.o.o.  
Dolnje Brezovo 35  
8290 Sevnica

**Evidence code:** 132-11/5073-12/13087-V/p1  
replaces 132-11/5073-12/13087-V

**Order:** Order No. 12-020-000315 of 12.11.2012

**Branch:**

**Head of branch:** Nataša Sovič, B. Sc. Chem. Techn.

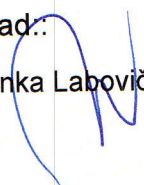
**Operator:** Lucija Smojver, B. Sc. Chem. Techn.

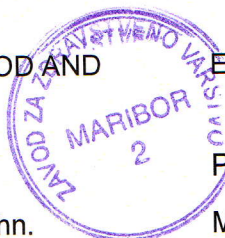


Maribor, 14.02.2013

DEPARTMENT FOR WATER, FOOD AND  
COMM. OF GEN. USE

ENVIRONMENTAL PROTECTION INSTITUTE

**Head:**   
Alenka Lapovič, B. Sc. Chem. Techn.



**Principal:**   
M. Sc. Emil Žerjal, B. Sc. Chem. Techn.

**BASIC DATA**

**Sample:** 8532 MCU-Mastic HS Light grey  
**Evidence code:** 132-11/5073-12/13087-V/p1  
replaces 132-11/5073-12/13087-V  
**Sample number:** 2012/13087  
**Subsamples:** 2012/13087/1 - 1st migration period, 2012/13087/2 - 2nd  
migration period, 2012/13087/3 - 3rd migration period  
**Owner:** MCU COATINGS INTERNATIONAL, PARTIDA LA OLLA 1  
EDIFICIO ATALAYA 6, Altea (Alicante)  
**Payed by:** Chemcolor Sevnica d.o.o., Dolnje Brezovo 35, Sevnica  
**Customer:** Chemcolor Sevnica d.o.o., Dolnje Brezovo 35, Sevnica  
**Sample taken by:** Customer  
**Place of sampling:**  
**Sample received by:** Aleksandra Moik  
**Sample received on:** 30.10.2012  
**Sample tested till:** 20.12.2012

**Description of the sample**

Name and designation:  
Coating 8532 MCU-Mastic HS Light gray

Intended use: contact with drinking water

The sample represents glass plates in dimensions of 10cm x 10cm, which are on one side treated with the tested coating.

Producer/Owner:  
MCU COATINGS INTERNATIONAL  
Partida la Olla 1 Edificio Atalaya del Mar Local No. 6  
03590 Altea (Alicante)  
SPAIN



## Analytic results

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 water).

Conditions of migration test:

- test simulant: deionized water
- temperature of migration: 23 °C
- time of migration: 3 x 72 hours
- three time migration period: eluate 1, 2, 3
- blank sample: deionized water
- measured parameters in 1st, 2nd and 3rd eluate: odour, visible characteristics, taste, turbidity, overall migration, TOC
- measured parameters 3rd eluate: primary aromatic amines, elements-metals, derivatives of BADGE and bisphenol A.

Analytic results are enclosed.

## Opinion and assessment

The results of analysis of the basic parameters show that the eluates are clear, with acceptable odor and tasteless. The results of measurements of migration of certain parameters in eluates 1, 2 and 3, did not show significant increasing of migration levels. The concentration of total organic carbon (TOC), expressed in the test report, but calculated according to the provisions of used standards, is after 2nd and 3rd migration period lower than the recommended limit of 0.5 mg/l (DWPLL - Drinking Water Positive List Limit, maximum tolerated concentration at sampling point of the consumer; source: Guideline for hygienic assessment of organic materials in contact with drinking water-KTW Guideline).

Specific migrations of: elements-metals, primary aromatic amines, derivatives of BADGE and bisphenol A are lower than limit values and lower than the minimum limit value for determining the selected analytical methods.

With regard to the results of the measured concentrations of migration into selected simulant, the sample 8532 MCU-MASTIC HS LIGHT GREY, no. sample 12/13087, 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.



## Sample photographs



## Enclosure

Annex 1: Test report with evidence code 132-11/5073-12/13087-A/p1 132-11/5073-12/13087-A.

**ANNEX 1**

**Test report with evidence code  
132-11/5073-12/13087-A/p1zamenjuje 132-  
11/5073-12/13087-A**



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VAT Number: SI30447046 Transactional Account Number: 01100-6030926630**SLOVENSKA  
AKREDITACIJA**  
SIST EN ISO/IEC 17025  
**LP-014**Results, marked with #  
refer to not accredited  
activity.

## TEST REPORT

Evidence code: 132-11/5073-12/13087-A/p1  
replaces 132-11/5073-12/13087-A

Place, date: Maribor, 14.02.2013

**Task**Title: Analysis of materials intended for contact with drinking water  
Responsible for: Lucija Smojver, B. Sc. Chem. Techn.  
Customer: Chemcolor Sevnica d.o.o., Dolnje Brezovo 35, 8290 Sevnica  
Order: Order No. 12-020-000315 of 12.11.2012**Sample**Number: 12/13087  
Code: 8532 MCU-Mastic HS Light grey  
Taken by: CustomerTime of receipt:  
30.10.2012 11:15Department for analytical chemistry  
Head: Marjana Babič, B. Sc. in Chem. Eng.Environmental Protection Institute  
Principal: M. Sc. Emil Žerjal, B. Sc. Chem. Techn.**Results**

# - Results refer to not accredited activity.

| Parameter | Result | Norm | Unit | Expressed as/on | Method | Start |
|-----------|--------|------|------|-----------------|--------|-------|
|           | Remark |      |      |                 |        | End   |

**General parameters**

|         |      |  |                 |   |  |  |
|---------|------|--|-----------------|---|--|--|
| Surface | 5,0  |  | dm <sup>2</sup> | # |  |  |
| Volume  | 1000 |  | ml              | # |  |  |

**1st migration period****organoleptic parameters**

|                         |          |  |  |   |                        |                          |
|-------------------------|----------|--|--|---|------------------------|--------------------------|
| Odour                   | NO ODOUR |  |  | # | Interna metoda - vonj  | 26.11.2012<br>26.11.2012 |
| Visible characteristics | CLEAR    |  |  | # | Interna metoda - videz | 26.11.2012<br>26.11.2012 |
| Taste                   | NO TASTE |  |  | # | Interna metoda - okus  | 26.11.2012<br>26.11.2012 |

**Physico-chemical parameters**

Evidence code: 132-11/5073-12/13087-A/p1  
replaces 132-11/5073-12/13087-A

Place, date: Maribor, 14.02.2013

## Results

# - Results refer to not accredited activity.

| Parameter                              | Result   | Norm | Unit               | Expressed as/on | Method                     | Start End                |
|----------------------------------------|----------|------|--------------------|-----------------|----------------------------|--------------------------|
| <b>Physico-chemical parameters</b>     |          |      |                    |                 |                            |                          |
| Turbidity                              | 0,20     |      | NTU                | #               | ISO 7027: 1999             | 26.11.2012<br>26.11.2012 |
| Overall migration into distilled water | <2,0     | 10   | mg/dm <sup>2</sup> |                 | SIST EN 1186-3: 2002 [147] | 19.12.2012<br>20.12.2012 |
| Total organic carbon - TOC             | 0,7      |      | mg/l               | C               | # ISO 8245: 1999           | 23.11.2012<br>23.11.2012 |
| <b>2nd migration period</b>            |          |      |                    |                 |                            |                          |
| <b>organoleptic parameters</b>         |          |      |                    |                 |                            |                          |
| Odour                                  | NO ODOUR |      |                    |                 | # Interna metoda - vonj    | 26.11.2012<br>26.11.2012 |
| Visible characteristics                | CLEAR    |      |                    |                 | # Interna metoda - videz   | 26.11.2012<br>26.11.2012 |
| Taste                                  | NO TASTE |      |                    |                 | # Interna metoda - okus    | 26.11.2012<br>26.11.2012 |
| <b>Physico-chemical parameters</b>     |          |      |                    |                 |                            |                          |
| Turbidity                              | 0,10     |      | NTU                | #               | ISO 7027: 1999             | 26.11.2012<br>26.11.2012 |
| Overall migration into distilled water | <2,0     | 10   | mg/dm <sup>2</sup> |                 | SIST EN 1186-3: 2002 [147] | 19.12.2012<br>20.12.2012 |
| Total organic carbon - TOC             | <0,5     |      | mg/l               | C               | # ISO 8245: 1999           | 26.11.2012<br>26.11.2012 |
| <b>3rd migration period</b>            |          |      |                    |                 |                            |                          |
| <b>organoleptic parameters</b>         |          |      |                    |                 |                            |                          |
| Odour                                  | NO ODOUR |      |                    |                 | # Interna metoda - vonj    | 26.11.2012<br>26.11.2012 |
| Visible characteristics                | CLEAR    |      |                    |                 | # Interna metoda - videz   | 26.11.2012<br>26.11.2012 |
| Taste                                  | NO TASTE |      |                    |                 | # Interna metoda - okus    | 26.11.2012<br>26.11.2012 |
| <b>Physico-chemical parameters</b>     |          |      |                    |                 |                            |                          |
| Turbidity                              | 0,10     |      | NTU                | #               | ISO 7027: 1999             | 26.11.2012<br>26.11.2012 |
| Overall migration into distilled water | <2,0     | 10   | mg/dm <sup>2</sup> |                 | SIST EN 1186-3: 2002 [147] | 19.12.2012<br>20.12.2012 |
| Total organic carbon - TOC             | <0,5     |      | mg/l               | C               | # ISO 8245: 1999           | 26.11.2012<br>26.11.2012 |
| <b>Elements</b>                        |          |      |                    |                 |                            |                          |
| Aluminium                              | <10      | 200  | µg/l               | #               | ISO 17294-2: 2003          | 27.11.2012<br>27.11.2012 |
| Arsenic                                | <1,0     | 10   | µg/l               | #               | ISO 17294-2: 2003          | 27.11.2012<br>27.11.2012 |



Evidence code:

132-11/5073-12/13087-A/p1  
replaces 132-11/5073-12/13087-A

Place, date: Maribor, 14.02.2013

**Results**

# - Results refer to not accredited activity.

| Parameter                 | Result | Norm | Unit | Expressed as/on | Method               | Start      | End        |
|---------------------------|--------|------|------|-----------------|----------------------|------------|------------|
| Elements                  | Remark |      |      |                 |                      |            |            |
| Cadmium                   | <0,10  | 5    | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Chromium                  | <1,0   | 50   | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Copper                    | <1,0   | 2000 | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Iron                      | <0,10  | 0,2  | mg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Manganese                 | <1,0   | 50   | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Nickel                    | <1,0   | 20   | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Lead                      | <1,0   | 25   | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Antimony                  | <1,0   | 5    | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Selenium                  | <1,0   | 10   | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Tin                       | <1,0   |      | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| Zinc                      | <10    |      | µg/l | #               | ISO 17294-2: 2003    | 27.11.2012 | 27.11.2012 |
| <b>Organic parameters</b> |        |      |      |                 |                      |            |            |
| Primary aromatic amines   | <0,010 | 0,01 | mg/l | Anilin klorid   | # 35 LMBG-L 00.00-6  | 04.12.2012 | 04.12.2012 |
| BADGE                     | <0,10  |      | mg/l | #               | SIST EN 15136-modif. | 05.12.2012 | 06.12.2012 |
| BADGE x HCl               | <0,10  |      | mg/l | #               | SIST EN 15136-modif. | 05.12.2012 | 06.12.2012 |
| BADGE x H2O               | <0,10  |      | mg/l | #               | SIST EN 15136-modif. | 05.12.2012 | 06.12.2012 |
| BADGE x H2O x HCl         | <0,10  |      | mg/l | #               | SIST EN 15136-modif. | 05.12.2012 | 06.12.2012 |
| BADGE x 2HCl              | <0,10  |      | mg/l | #               | SIST EN 15136-modif. | 05.12.2012 | 06.12.2012 |
| BADGE x 2H2O              | <0,10  |      | mg/l | #               | SIST EN 15136-modif. | 05.12.2012 | 06.12.2012 |
| Bisphenol A               | <0,5   | 0,6  | mg/l | #               | ISO 18857-2: 2008    | 04.12.2012 | 07.12.2012 |

**Evidence code:** 132-11/5073-12/13087-A/p1  
replaces 132-11/5073-12/13087-A

**Place, date:** Maribor, 14.02.2013

[147] Podano kot povprečje treh meritev.

- 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

Bold formatted results exceed norm, the measurement uncertainty data are not considered.

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 institute.

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

All additional information on testing is available at the institute.