



L 1393

Institute of Public Health in Ostrava
Centre of Hygienic Laboratories
CAI Accredited Testing Laboratory No. 1393
Partyzánské náměstí 7, 702 00 Ostrava

TEST REPORT No. 28725/2012

Customer : VALMON, spol. s r.o.
 Zašovská 534
 757 01 Valašské Meziříčí

Set No. : 10945
Sample Received : 18.4.2012
Sample Analyzed : 18.4.2012 - 23.5.2012
Ref. No. : ZU/11286/2012
File No. : S-ZU/11286/2012
File code : 4.0.3

Sample name: Plastic hose TOP ELASTIC 1118ZL
Sampling date : Not mentioned
Sample Type : Materials in contacts with drinking water
Sampled by : Customer
Purpose : On the request customers

Methods of testing

Parameter	Method used	Kind
Pb	SOP OV 201 (ČSN EN ISO 17294-1, ČSN EN ISO 17294-2)	2 A
Cd	SOP OV 201 (ČSN EN ISO 17294-1, ČSN EN ISO 17294-2)	2 A
TOC	SOP OV 307 (ČSN EN 1484)	3 A
Bis(2-ethylhexyl) phthalate	SOP OV 313 (ČSN EN ISO 18856)	5 A
Identification of organic compounds	SOP OV 344 (ČSN EN ISO 15680)	3 N
Chloroetene (vinyl chloride)	SOP OV 344 (ČSN EN ISO 15680)	3 A
Colour	SOP OV 004 (ČSN EN ISO 7887)	2 A
COD-Mn	SOP OV 016 (ČSN EN ISO 8467)	2 A
pH	SOP OV 033 (ČSN ISO 10523)	2 A
TON	SOP OV 034 (ČSN EN 1622)	2 A
TFN	SOP OV 034 (ČSN EN 1622)	2 A

Notice to sampling : The sampling itself is not a subject of accreditation.

Laboratory workplace :

⁽²⁾ - Analyses performed at Ostrava (Partyzánské nám. 7, 702 00 Ostrava)

⁽³⁾ - Analyses performed at Karviná (Těřeškovové 2206, 734 01 Karviná-Mizerov)

⁽⁵⁾ - Analyses performed at Olomouc (Wolkerova 6, 779 11 Olomouc)

Methods in TYPE column: "A" accredited test, "N" non-accredited test

Results deal with tested samples only.

This Report can be reproduced only complete, its part only with the written permission of this testing laboratory.

Head of Hygienic Laboratories Center : Doškářová Šárka, RNDr.

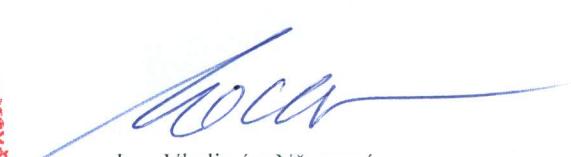
Checked by : Kantorová Jana, Ing.

Completed by : Kantorová Jana, Ing.

Number of pages : 5

Date : 4.6.2012




 Ing. Vladimíra Němcová
 Head of Department of Inorganic Analyses

INSTITUTE OF PUBLIC HEALTH OSTRAVA
CENTRE OF HYGIENIC LABORATORIES
BATCH NO.: 10945/2012

RESULTS

Results lower than detection limit are marked with <.

P - requirements - according to the Regulation of the Ministry of Health CR No.252/2004

<u>NAME OF PRODUCT:</u>	<u>ORIGIN OF PRODUCT:</u>
PVC hose TOP ELASTIC 1118ZL	Produced by: VALMON, spol.s r.o. Zašovská 534, 757 01 Valašské Meziříčí

TYPE OF SAMPLE, ITS DESCRIPTION:

Plastic hose, inner diameter 126 mm – white colour, external colour yellow, smooth surface
– s. image documentation

MATERIAL SPECIFICATIONS:

PVC

DECLARATION OF USING :

product intended for short contact with drinking water

PREPARATION :

For purposes of determining the use of 8 x 5 m samples unites.

Samples pre-treatment: according to the Regulation of the Ministry of Health CR No.409/2005, Annex No. 1.: sample was immersed in tap water for 24 hours, and then washed off with tap water for 60 minutes, last with deionised water for 3 minutes.

Material area to volume of diluents water ratio is 3 : 1. Volume of diluents water: 2500 ml – for 4 pcs 5 m hose (leached 2 x 4 pieces of hose). Leaching inside of the hose. The surface of the sample corresponded to 1 piece 1970 cm² (for 4 pcs = 7880 cm²).

Conductivity of diluents demineralised water: 0,43 mS/m.

To determination of the threshold odour number TON and threshold flavour number TFN extract was diluted to leaching ratio of 1 : 1.

Average value K²³₇₂ is diminished with the average value of blank samples K²³₀.

1st extraction period – after 72+1 hours, temperature of leaching 23+2°C

INDICATOR	K ²³ _{0,1} BLANK NO. 34053- 1.multipl. determ.	K ²³ _{0,1} BLANK NO. 34053- 2.multipl. determ.	K ²³ _{72,1} SAMPLE NO. 34054-1. multipl. determ.	K ²³ _{72,1} SAMPLE NO. 34054-2. multipl. determ.	K ²³ ₇₂ AVERAGE VALUE	P	UNIT	NV
TOC	< 0,8	< 0,8	4,3	4,5	4,4	5	mg/l	20%
pH	6,4	6,5	8,9	9,0	-	6,5-9,5	j.pH	± 0,3 j.pH
colour	< 5	< 5	5	5	5	20	mg/l Pt	
COD-Mn	< 0,5	< 0,5	3,4	3,5	3,4	3	mg/l	25%
Cd	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	5	µg/l	
Pb	< 0,50	< 0,50	< 0,50	< 0,50	< 0,50	25(10)	µg/l	

INSTITUTE OF PUBLIC HEALTH OSTRAVA

CENTRE OF HYGIENIC LABORATORIES

BATCH NO.: 10945/2012

QUALITATIVE EXAMINATION:	RESULT
Identification of organic compounds	<p>Qualitative analysis of the sample extract material was subjected to leaching of the material together with the blank sample.</p> <p>The present sample was analyzed by SPME followed by GC-MS analysis.</p> <p>Qualitative analysis of the sample were identified following substances different from the blank, the measured spectra are consistent with the following, listed in parentheses, the probability spectra in the NIST library.</p> <p>(confirmation by consensus retention times of absence)</p> <p>3-heptanon CAS#: 106-35-4 (71%)</p> <p>2-ethyl-hexanal CAS#: 123-05-7 (73%)</p> <p>5-methyl-1-heptanol CAS#: 7212-53-5 (80%)</p> <p>3-butyl-3-octen-2-on CAS#: 32064-71-4 (71%)</p>

2nd extraction period - after 72+1 hours, temperature of leaching 23+2°C

INDICATOR	K ²³ _{0,2} BLANK NO. 34055-	K ²³ _{0,2} BLANK NO. 34055-	K ²³ _{72,2} SAMPLE NO. 34056-1.	K ²³ _{72,2} SAMPLE NO. 34056-2.	K ²³ ₇₂ AVERAGE VALUE	P	UNIT	NV
TOC	< 0,8	< 0,8	3,3	3,0	3,2	5	mg/l	20%
pH	7,8	7,6	9,3	9,4	-	6,5-9,5	j.pH	± 0,3 j.pH
colour	< 5	< 5	5	5	5	20	mg/l Pt	
COD-Mn	< 0,5	< 0,5	2,2	2,4	2,3	3	mg/l	25%
Cd	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	5	µg/l	
Pb	< 0,50	< 0,50	< 0,50	< 0,50	< 0,50	25(10)	µg/l	

3rd extraction period - after 72+1 hours, temperature of leaching 23+2°C

INDICATOR	K ²³ _{0,3} BLANK NO. 34057-	K ²³ _{0,3} BLANK NO. 34057-	K ²³ _{72,3} SAMPLE NO. 34058-	K ²³ _{72,3} SAMPLE NO. 34058-1.	K ²³ ₇₂ AVERAGE VALUE	P	UNIT	NV
TOC	< 0,8	< 0,8	2,8	3,3	3,1	5	mg/l	20%
pH	7,7	7,6	9,2	9,3	-	6,5-9,5	j.pH	± 0,3 j.pH
colour	< 5	< 5	< 5	< 5	< 5	20	mg/l Pt	
COD-Mn	0,57	< 0,5	2,2	1,9	1,5	3	mg/l	25%
Cd	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	5	µg/l	
Pb	< 0,50	< 0,50	< 0,50	< 0,50	< 0,50	25(10)	µg/l	
TON	1	1	2	2	2	1 a 2	-	
TFN	1	1	2	2	2	1 a 2	-	
Chloro ethene (vinylchloride)	< 0,2	< 0,2	< 0,2	< 0,2	< 0,2	0,50	µg/l	

INSTITUTE OF PUBLIC HEALTH OSTRAVA

CENTRE OF HYGIENIC LABORATORIES

BATCH NO.: 10945/2012

INDICATOR	K ²³ _{0,3} BLANK NO. 34057- 1. multipl. determ.	K ²³ _{0,3} BLANK NO. 34057- 2. multipl. determ.	K ²³ _{72,3} SAMPLE NO. 34058- 1. multipl. determ.	K ²³ _{72,3} SAMPLE NO. 34058-2. multipl. determ.	K ²³ ₇₂ AVERAGE VALUE	P	UNIT	NV
bis(2-ethyl-hexyl) phthalate	< 0,0050	< 0,0050	0,01	0,01	0,01	-	mg/1	40%

CALCULATION OF MIGRATION NUMBER

Indicator	Migration numer M ²³ _{24,3} 3rd leach	Unit
TOC	0,031	mg.dm ⁻² .day ⁻¹
COD-Mn	0,015	mg.dm ⁻² .day ⁻¹
Cd	< 0,0005	μg.dm ⁻² .day ⁻¹
Pb	< 0,0050	μg.dm ⁻² .day ⁻¹
Chloro ethene (vinyl chloride)	< 0,002	μg.dm ⁻² .day ⁻¹
bis(2-ethyl-hexyl)phthalate	0,0001	mg.dm ⁻² .day ⁻¹

EXPERT INTERPRETATION

Leaching ratio was significantly negative 3 : 1.

For the evaluation of the results were concentrations of migrated folders recalculated on the ratio 1 : 1, see the table below.

3rd extraction period – after 72+1 hours, temperature of leaching 23+2°C

INDICATOR	K ²³ _{72,3} SAMPLE NO. 34058- 1. multipl. determ.	K ²³ _{72,3} SAMPLE NO. 34058- 2. multipl. determ.	K ²³ ₇₂ AVERAGE VALUE	P	UNIT	NV
TOC	0,93	1,1	1,02	5	mg/1	20%
COD-Mn	0,73	0,63	0,68	3	mg/1	25%
Cd	< 0,05	< 0,05	< 0,05	5	μg/1	
Pb	< 0,50	< 0,50	< 0,50	25(10)	μg/1	
Chloro ethene (vinyl chloride)	< 0,2	< 0,2	< 0,2	0,50	μg/1	
bis(2-ethyl-hexyl) phthalate	< 0,0050	< 0,0050	< 0,0050	-	mg/1	

INSTITUTE OF PUBLIC HEALTH OSTRAVA

CENTRE OF HYGIENIC LABORATORIES

BATCH NO. : 10945/2012

In the case of short contact with drinking water the specific indicators for the test material meet the requirements of the Regulation of the Ministry of Health CR No.409/2005 evidently in all three periods for the determination of metals and in the 3rd extraction period for determination of vinyl chloride.

The values of cadmium, lead and vinyl chloride are not in all extraction periods significant. The value of bis(2-ethyl-hexyl)phthalate are after conversion in the 3rd extraction period below detection limit.

Requirements for non-specific indicators affecting the organoleptic properties of water are met in the 3rd extraction period. The values of the threshold odour number TON and threshold flavour number TFN after dilution representing the leaching ratio of 1 : 1 meet the requirements of the Regulation.

COD-Mn values have a decreasing trend. TOC values have a decreasing trend from the first extract, but in the 2nd and in the 3rd extract values have stagnated.

The pH values of the extracts are stagnating and meet the limit value.

Summary:

The test material, PVC hose – TOP ELASTIC 1118ZL, produced by: VALMON, spol.s r.o., Zašovská 534, 757 01 Valašské Meziříčí, was found to meet the requirements of the Regulation of the Ministry of Health CR No. 409/2005 for short contact with drinking water.

