



**THE REGIONAL PUBLIC HEALTH
AUTHORITY IN POPRAD**

Zdravotnícka 3, 058 97 Poprad

**The National Reference Laboratory
for materials intended to come into contact
with foodstuffs**

EU Network of
National Reference Laboratories



Food Contact Materials



Reg. No. 126/S-096

A – accreditation test
N – non accreditation test

**Test report
Laboratory analysis results and assessment of safety of product
Nr. 85 - 93/2016**

Customer : Chesterton International GmbH
Am Lenzefleck 23
Ismaning 85737
Germany

Date of sample receipt : 04.01.2016

Date of issue : 09.02.2016

Sample title : Chesterton ARC S1PW coating

Application : *For direct contact with food*

Producer : A.W. Chesterton Company, USA.

Chemical examination

- I. Determination of overall migration of substances**
Test conditions : 10 days, 40°C
- II. Determination of overall and specific migration of substances**
Test conditions : 2 days, 20 ± 1°C
- III. Determination of specific migration of substances and sensorial assessment**
Test conditions : 10 days, 60°C

I.
a)

Overall migration of substances (mg.dm ⁻²)	
Food simulants	Results
deionized water	< 1.5
A : 10% ethanol	2.4
B : 3% acetic acid	< 1.5
D1 : 50% ethanol	5.05

II.

a)

Overall migration of substances (mg.dm ⁻²)	
Food simulants	Results
95% ethanol	4.45
isooctane	< 1.5

b)

Content of bisphenol A (mg.kg ⁻¹ simul.)	
Food simulants	Results
95% ethanol	< 0.006

c)

Content of bisphenol F (mg.kg ⁻¹ simul.)	
Food simulants	Results
95% ethanol	< 0.012

d)

Content of bisphenol S (mg.kg ⁻¹ simul.)	
Food simulants	Results
95% ethanol	< 0.025

e)

Content of certain epoxy derivatives – BADGE, BFDGE, NOGE (mg.kg ⁻¹ simul.)				
Food simulants	Σ BADGE	Σ BFDGE	NOGE (3 ring)	NOGE (4 ring)
isooctane	2.6	0.3	< 0.04	< 0.04

III.

a)

Content of formaldehyde (mg.dm ⁻²)	
Food simulants	Results
A : 10% ethanol	< 0.030
B : 3% acetic acid	0.134 / 0.255
D1 : 50% ethanol	0.041

b)

Content of primary aromatic amines (mg.dm ⁻²)	
Food simulants	Results
B : 3% acetic acid	< 0.007

c)

Sensorial assessment				
Assessor Nr.	Model substance	Model substance affected by packaging material		
		taste variation	odour variation	favour variation
1.	Drinking water (simulating soft drinks, nonacid foodstuffs, dairy products, fresh meat)	1	1	1
2.		1	1	1
3.		1	1	1
Variation mean total		1.0	1.0	1.0

Sensorial assessment				
Assessor Nr.	Model substance	Model substance affected by packaging material		
		taste variation	odor variation	favor variation
1.	Powdered sugar (simulating dry foodstuffs of constant consistence)	1	1	1
2.		1	1	1
3.		1	1	1
Variation mean total		1.0	1.0	1.0

Sensorial assessment				
Assessor Nr.	Model substance	Model substance affected by packaging material		
		taste variation	odour variation	favour variation
1.	Milk chocolate (simulating foodstuffs with higher content of fat and water)	1	1	1
2.		1	1	1
3.		1	1	1
Variation mean total		1.0	1.0	1.0

The evaluation of mean total :

- ≤ 1,8 low probability that material and article will have an unfavourable affect on the organoleptic properties of food and drinking water
- 1,9 - 2,4 material or article may adversely affect the sensory properties of food and drinking water
- > 2,4 high probability that material and article will have an unfavourable affect on the organoleptic properties of food and drinking water

	Laboratory	Technique	Methods	
I. a)	NRL for materials intended to come into contact with foodstuffs	EN 1186	ŠPP-N3	N
II. a)		EN 1186	ŠPP-N3	N
II. b), c), d)	Specialised laboratory 1 of chemical analysis	HPLC	STN 15136	N
II. e)		HPLC	STN 15136 (BADGE, BFDGE) STN EN 15137 (NOGE)	N N
III. a)	NRL for materials intended to come into contact with foodstuffs	spectrophotometric	ŠPP-N2 (10% ethanol) ŠPP-N2 (50% ethanol, 3% acetic acid)	A N
III. b)		spectrophotometric	ŠPP-N6/A	A
III. c)		-	ŠPP-N7	N

ŠA – special analysis, ŠPP – standard operation process

The test results are relevant solely to the testing samples.

This document may not be copied in a shortened form and without the approval of the testing laboratory.

Validity:

The results of laboratory analyses should be updated if some changes carry out in the manufacturing process which can cause changes in the migration of substances into used food simulators or if there are changes in the current legislative regulations.

Assessment of safety of product

(expression of opinions and interpretations is accredited to accredited tests)

Coating Chesterton ARC S1PW was laboratory examined in the accredited testing laboratory at the Regional Public Health Authority seated in Poprad, which was authorised (letter of Ministry of Health of SR no. 15654-3/2007ŠT) as *National Reference Laboratory for materials intended into contact with foodstuffs* according Regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.

Coating Chesterton ARC S1PW was laboratory tested in accordance with the following legislation law :

- *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*
- *Regulation of Ministry of Agriculture of Slovak republic and Ministry of Health of Slovak republic of 9 June 2003 No. 1799/2003-100, which issued the fifth head of the Food Code governing materials and articles intended to come into contact with foodstuffs as amended.*

The conditions of the modeling migration tests and the selection of the foodstuffs simulants in laboratory examination are in compliance with the following legislation law :

- *Commission Regulation (EU) No 10/2011 of 14 January 2011 relating to plastic materials and articles intended to come into contact with food*
- *Regulation of Ministry of Agriculture of Slovak republic and Ministry of Health of Slovak republic of 9 June 2003 No. 1799/2003-100, which issued the fifth head of the Food Code governing materials and articles intended to come into contact with foodstuffs as amended.*

The following sample – coating Chesterton ARC S1PW was tested to the following parameters:

- overall migration of substances into the foodstuffs simulants (deionized water, 10 % ethanol, 3 % acetic acid, 95 % ethanol and isooctane) on test condition I., II.
- content of bisphenol A, F, S in sample leachate to isooctane on test condition II.
- content of formaldehyde in sample leachate to 10 % ethanol and 50 % ethanol on test condition III.
- content of primary aromatic amines in sample leachate to 3 % acetic acid on test condition III.
- sensorial assessment of the model foodstuffs simulants : drinking water (simulating soft drinks, nonacid foodstuffs, dairy products, fresh meat), powdered sugar (simulating dry foodstuffs of constant consistence) and milk chocolat (simulating foodstuffs with higher content of fat and water) on test condition III.

meeting the requirements of the *Commission Regulation (EU) No. 10/2011 of 14 January 2011 relating to plastic materials and articles intended to come into contact with food and amendements Commission Regulation (EU) No. 1282/2011, Commission Regulation (EU) No. 1183/2012 and Commission Regulation (EU) No. 202/2014 and Regulation of Ministry of Agriculture of Slovak republic and Ministry of Health of Slovak republic of 9 June 2003 No. 1799/2003-100.*

The following sample – coating Chesterton ARC S1PW regarding:

- content of formaldehyde in sample leachate to 3% acetic acid on test condition III. does not meet the requirements of *Regulation of Ministry of Agriculture of Slovak republic and Ministry of Health of Slovak republic of 9 June 2003 No. 1799/2003-100.*

Content of BADGE, BFDGE and NOGE (3 ring and 4 ring) in sample leachate to isooctane on test conditions II. meets the requirements of *Commission Regulation (EC) No 1895/2005 on the restriction of use of ceratin epoxy derivatives in materials and articles intended to come into contact with food.*

Following the laboratory examination results - in term of the health protection - **it is possible to recommended coating Chesterton ARC S1PW** manufactured by A.W. Chesterton Company, USA, for use **in direct contact with following types of food :**

- dry foods
- foods that have a hydrophilic character
- foods that have a lipophilic character
- drinking water

for long term storage at room temperature or below except for use in direct contact with food which has a pH below 4.5.



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