

Test report n°: **18LA12213** of **18/09/2018**

Dear
Parx Plastics Europe BV
Westblaak 189
3012KJ Rotterdam ()

Sample Information

Description: **TPU0008/M17083101/10130/TPE/ <bacteria> - Samples with technology - Streptococcus oralis - Contact = 8 h**

Test subject: **Polymers**

Registration date: **07/08/2018** Registration hour: **12.20**

Date of arrival: **07/08/2018** Hour of arrival: **12.20**

Notes on receipt: **Idoneo**

Date analysis commenced: **28/08/2018** Date analysis completed: **06/09/2018**

Sampling data

Sampling by: **Customer**

Transport: **Customer**

The analytical results are exclusively referred to the sample.

Representation of a Test Report signed electronically in accordance with current legislation.

The test report can not be reproduced in part without the written permission of the laboratory.

Laboratory management system certified UNI EN ISO 9001: 2015 by CSQA with the No. 14270. Inclusion in the list of regional laboratories carrying out analysis in the context of self-control procedures for Food Industries No. 52. Recommended by AIC for the analysis of quantification of gluten in food matrices. Registered laboratory for the analysis of food contact materials intended for export to Japan.

Test report n°: 18LA12213 of 18/09/2018

Parameter - Note <i>Method - Note</i>	U.M.	Result Note	LoQ
Determination of antibacterial activity (R) - $R=(U_t-U_o)-(A_t-U_o)$ ISO 22196:2011		0,7 Reduction of 80.047%	0,6
Size of test specimens (H x L)	mm	50x50	
Thickness of test specimens	mm	2,0	
Type of polymer used for the cover film		Polipropilene	
Size of the cover film (H x L)	mm	40x40	
Thickness of the cover film	mm	0,10	
Type of Gram-positive strain		Streptococcus oralis ATCC 6249	
Volume of test inoculum	ml	0,4	
Number of viable bacteria in the test inoculum	n°	250000	
U _o - N° of viable bacteria recovered from the untreated test specimens after inoculation	log	4,2	0,4
U _t - N° of viable bacteria recovered from the untreated test specimens after 24 h	log	2,0	0,4
A _t - Count bacteria recovered from the treated samples 24 hours post inoculation	log	1,4	0,4

18LA12213/01 TPU0008/M17083101/10130/TPE/ <bacteria> - Samples with technology - Streptococcus mitis -

Parameter - Note <i>Method - Note</i>	U.M.	Result Note	LoQ
Determination of antibacterial activity (R) - $R=(U_t-U_o)-(A_t-U_o)$ ISO 22196:2011		2,2 Reduction of 99.369%	0,6
Size of test specimens (H x L)	mm	50x50	
Thickness of test specimens	mm	2,0	
Type of polymer used for the cover film		Polipropilene	
Size of the cover film (H x L)	mm	40x40	
Thickness of the cover film	mm	0,10	
Type of Gram-positive strain		Streptococcus mitis NCIMB 13770	
Volume of test inoculum	ml	0,4	
Number of viable bacteria in the test inoculum	n°	390000	
U _o - N° of viable bacteria recovered from the untreated test specimens after inoculation	log	4,4	0,4
U _t - N° of viable bacteria recovered from the untreated test specimens after 24 h	log	3,5	0,4
A _t - Count bacteria recovered from the treated samples 24 hours post inoculation	log	1,3	0,4

The analytical results are exclusively referred to the sample.

Representation of a Test Report signed electronically in accordance with current legislation.

The test report can not be reproduced in part without the written permission of the laboratory.

Laboratory management system certified UNI EN ISO 9001: 2015 by CSQA with the No. 14270. Inclusion in the list of regional laboratories carrying out analysis in the context of self-control procedures for Food Industries No. 52. Recommended by AIC for the analysis of quantification of gluten in food matrices. Registered laboratory for the analysis of food contact materials intended for export to Japan.

Test report n°: **18LA12213** of **18/09/2018**
18LA12213/02 TPU0008/M17083101/10130/TPE/ <bacteria> - Samples with technology - Streptococcus sanguis

Parameter - Note <i>Method - Note</i>	U.M.	Result Note	LoQ
Determination of antibacterial activity (R) - $R=(U_t-U_o)-(A_t-U_o)$ ISO 22196:2011		> 3,1 Reduction > of 99.921%	0,6
Size of test specimens (H x L)	mm	50x50	
Thickness of test specimens	mm	2,0	
Type of polymer used for the cover film		Polipropilene	
Size of the cover film (H x L)	mm	40x40	
Thickness of the cover film	mm	0,10	
Type of Gram-positive strain		Streptococcus sanguinis ATCC 10556	
Volume of test inoculum	ml	0,4	
Number of viable bacteria in the test inoculum	n°	350000	
U _o - N° of viable bacteria recovered from the untreated test specimens after inoculation	log	4,3	0,4
U _t - N° of viable bacteria recovered from the untreated test specimens after 24 h	log	3,1	0,4
A _t - Count bacteria recovered from the treated samples 24 hours post inoculation	log	< 0,4	0,4

LEGEND: **U.M.** = Unit of measurement; **(Sup)** = upper limit; **(Inf)** = Lower Limit ;; **x ÷ y** = acceptable range; **LoQ** = limit of quantification, the threshold value below which you choose not to bring any numerical result for the parameter in question; this limit is provided directly by the method, or is chosen on the basis of the experimental detection limits (LoQ or LoD) so as not to be changed over time or according to the chemical-physical or microbiological single sample; **LOD** = limit of detection; **NQ** = unquantifiable, indicates a value less than LoQ

"<x" or ">x" respectively indicate a value lower or higher than the measuring range of the test

UNLESS OTHERWISE SPECIFIED: Quantitative microbiological tests are performed on single replica and two consecutive dilutions in accordance with UNI EN ISO 7218: 2013 (with the exception of the analysis of water and MPN); the results of this test report are not correct for recovery factors (R) as the values of recovery are in the tolerance specified in the test method; summations are calculated using the criterion of the lower bound (LB)

If the sampling isn't the responsibility of 3ALaboratori Ltd., the test results were obtained on the basis of the data declared.

Technical Director

 Dr. Giovanni Mitaritonna
Chemist

Ordine Interprov. Chimici del Veneto - Padova n° 910 SEZ. A

The analytical results are exclusively referred to the sample.

Representation of a Test Report signed electronically in accordance with current legislation.

The test report can not be reproduced in part without the written permission of the laboratory.

Laboratory management system certified UNI EN ISO 9001: 2015 by CSQA with the No. 14270. Inclusion in the list of regional laboratories carrying out analysis in the context of self-control procedures for Food Industries No. 52. Recommended by AIC for the analysis of quantification of gluten in food matrices. Registered laboratory for the analysis of food contact materials intended for export to Japan.

Mod.PT01.01 Rev.6