



TESTEX®

REGISTERED

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Zurich, 11.06.2012 / me

TEST REPORT NO. ZHXA 081862.1

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Test material: 8 Epic non-phthalates screen printing inks with printed CO fabrics

SUBJECT OF ANALYSIS

According to your order dated 09.03.2012 analysis should be carried out on the samples received on 12.03.2012. This order and the tests carried out are related to the application for renewal of your Eco-Passport ZHXA 057283.

RESULTS OF ANALYSIS

The results of the analysis we have carried out are summarized in the following tables.

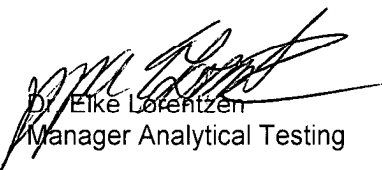
SUMMARY

The test methods and requirements according to Oeko-Tex® Standard 100 were used as basis of evaluation. The cotton fabrics printed with EPIC PF orange and PF marine inks have pH values higher than the upper limit value of 7.5. Furthermore, the results of their colour fastness to rubbing (dry) do not conform to Oeko-Tex® Standard 100.

These results indicate that the pH values and colour fastnesses of those textiles, printed with any of the EPIC inks must be controlled, whenever a certification according to Oeko-Tex® Standard 100 is intended.

Please find your Eco-Passport ZHXA 057283 enclosed with this test report. It is valid until 30.04.2013 and can then be renewed.

Swiss Textile Testing Institute
TESTEX AG


Dr. Elke Lorenzen
Manager Analytical Testing

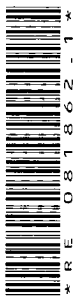

Mary Rose Egloff
Customer Service Oeko-Tex®

Enclosures mentioned

proven since 1846

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The test results only relate to the test samples. Partial reproduction of our reports are only allowed with written approval of TESTEX AG



STS 228

**OVERVIEW**

Please refer to overview table and table of result for failed samples.

p: tested and passed; X: tested and failed; d: done; ' ': not tested

	Sample No.									
	1	2	3	4	5	6	7	8	9	10
pH VALUE ISO 3071 (KCl)									p	X
FORMALDEHYDE-ANALYSIS JIS L-1041									p	
HEAVY METALS Total content	p	p	p	p	p	p	p	p		
PHENOLS (Chlorinated and OPP) Oeko-Tex® Standard 200, 5	p	p	p	p	p	p	p	p	p	p
PLASTISIZERS Oeko-Tex® Standard 200, 6										
ORGANIC TIN COMPOUNDS Oeko-Tex® Standard 200, 7					p			p		
AZO-DYESTUFFS EN 14362-1 (screening, CO etc.)	p	p	p	p	p	p	p	p		
FASTNESS TO PERSPIRATION ISO 105/E04										p
FASTNESS TO WATER ISO 105/E01										p
FASTNESS TO RUBBING ISO 105/X12 (Öko-Tex)										X
FASTNESS TO SALIVA AND PERSPIRATION LMBG 82.10-1 (modified)										p

No.1: Index 1 INK EPIC HD CLEAR 2

No.2: Index 2 INK EPIC PF ORANGE

No.3: Index 3 INK EPIC PF MARINE

No.4: Index 4 INK EPIC PF FL. YELLOW

No.5: Index 5 INK EPIC PERF BASE

No.6: Index 6 INK EPIC QUICK WHITE

No.7: Index 7 INK EPIC FINESSE

No.8: Index 8 INK EPIC ECHO WHITE

No.9: CO FABRIC PRINTED W/ EPIC HD CLEAR 2

No.10: CO FABRIC PRINTED W/ EPIC PF ORANGE



p: tested and passed; X: tested and failed; d: done; ' ': not tested

	Sample No.									
	11	12	13	14	15	16				
pH VALUE ISO 3071 (KCI)	X	p	p	p	p	p				
FORMALDEHYDE-ANALYSIS JIS L-1041	p									
HEAVY METALS Total content										
PHENOLS (Chlorinated and OPP) Oeko-Tex® Standard 200, 5	p	p	p	p	p	p				
PLASTISIZERS Oeko-Tex® Standard 200, 6	p				p					
ORGANIC TIN COMPOUNDS Oeko-Tex® Standard 200, 7										
AZO-DYESTUFFS EN 14362-1 (screening, CO etc.)										
FASTNESS TO PERSPIRATION ISO 105/E04	p	p								
FASTNESS TO WATER ISO 105/E01	p	p								
FASTNESS TO RUBBING ISO 105/X12 (Öko-Tex)	X	p								
FASTNESS TO SALIVA AND PERSPIRATION LMBG 82.10-1 (modified)	p	p								

No.11: CO FABRIC PRINTED W/ EPIC PF MARINE
 No.12: CO FABRIC PRINTED W/ EPIC PF FL. YELLOW
 No.13: CO FABRIC PRINTED W/ EPIC PERF. BASE
 No.14: CO FABRIC PRINTED W/ EPIC QUICK WHITE
 No.15: CO FABRIC PRINTED W/ EPIC FINESSE
 No.16: CO FABRIC PRINTED W/ EPIC ECHO WHITE

Index 1=10009 Epic PFX HDC EPIC HD CLEAR 2, 4496096: 30.01.12
 Index 2=38888 PFX EPIC PF ORANGE, 450555528: 17.02.12
 Index 3=68888 PFX EPIC PF MARINE, 450914067: 24.02.12
 Index 4=98888 PFX EPIC PF FLUORESCENT YELLOW, 450835845: 23.02.2012
 Index 5=18600 PFXPB EPIC PERFORMANCE BASE, 4508758: 22.02.12
 Index 6=11835 PFW EPIC QUICK WHITE, 4513978: 05.03.12
 Index 7=10150 PFXFNS EPIC FINESSE, 4515279: 29.02.12
 Index 8=11130 PFW EPIC ECHO WHITE, 4483789: 21.01.12

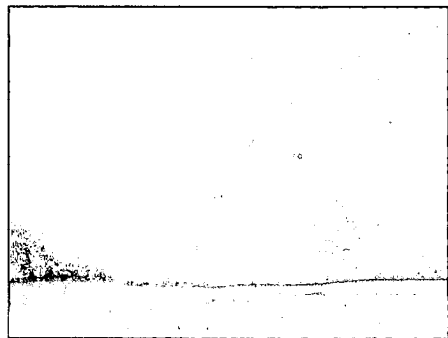


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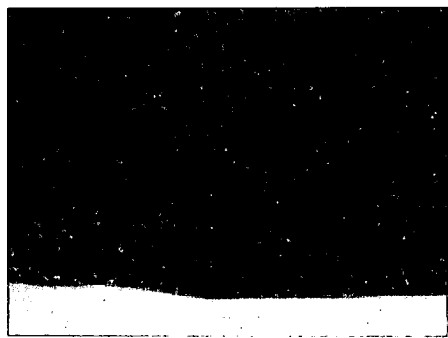
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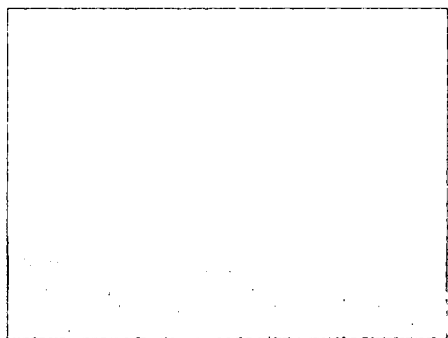
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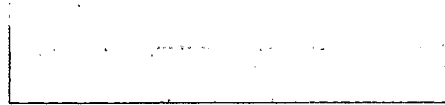
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TABLE OF RESULTS

		OEKO-TEX®	CO	CO	CO	CO
			FABRIC	FABRIC	FABRIC	FABRIC
		100	PRINTED	PRINTED	PRINTED	PRINTED
			W/	W/	W/	W/
		Product	EPIC HD	EPIC PF	EPIC PF	EPIC PF
		Class I	CLEAR 2	ORANGE	MARINE	FL. YELLOW
pH VALUE ISO 3071 (KCl)						
No. of tests			2	2	2	2
Aqueous extract	[pH]	4.0 - 7.5	7.2	8.1	8.3	7.5

		OEKO-TEX®	CO FABRIC 100	CO FABRIC PRINTED W/ EPIC PERF. BASE	CO FABRIC PRINTED W/ EPIC QUICK WHITE	CO FABRIC PRINTED W/ EPIC FINESSE	CO FABRIC PRINTED W/ EPIC ECHO WHITE
pH VALUE ISO 3071 (KCl)							
No. of tests			2	2	2	2	2
Aqueous extract	[pH]	4.0 - 7.5	7.2	7.1	7.0	7.4	

	OEKO-TEX®	CO FABRIC PRINTED W/ Product Class I	CO FABRIC PRINTED W/ EPIC HD CLEAR 2	CO FABRIC PRINTED W/ EPIC PF MARINE		
FORMALDEHYDE-ANALYSIS JIS L-1041						
No. of tests		1	1			
Avg. free formaldehyde [mg/kg]	n/d	n/d	n/d			



TABLE OF RESULTS

		OEKO-TEX® 100 Product Class I	Index 1 INK EPIC HD CLEAR 2	Index 2 INK EPIC PF ORANGE	Index 3 INK EPIC PF MARINE	Index 4 INK EPIC PF FL. YELLOW
HEAVY METALS						
Total content						
No. of tests			1	1	1	1
Antimony	[mg/kg]		1.31	1.85	1.07	0.97
Arsenic	[mg/kg]		< 0.01	0.09	0.15	< 0.01
Lead	[mg/kg]		< 0.01	< 0.01	2.45	< 0.01
Cadmium	[mg/kg]		< 0.01	< 0.01	< 0.01	< 0.01
Chromium total	[mg/kg]		1.19	1.95	5.37	1.00
Cobalt	[mg/kg]		0.12	0.23	0.32	0.13
Copper	[mg/kg]		1.91	1.75	2.88	1.90
Nickel	[mg/kg]		0.15	< 0.01	< 0.01	0.27
Mercury	[mg/kg]		2.47	1.38	0.52	1.13
Zinc	[mg/kg]		11.50	4.50	5.77	5.73
Tin	[mg/kg]		34.20	44.30	40.60	39.00

		OEKO-TEX® 100 Product Class I	Index 5 INK EPIC PERF BASE	Index 6 INK EPIC QUICK WHITE	Index 7 INK EPIC FINESSE	Index 8 INK EPIC ECHO WHITE
HEAVY METALS						
Total content						
No. of tests			1	1	1	1
Antimony	[mg/kg]		1.87	0.89	1.37	0.73
Arsenic	[mg/kg]		< 0.01	0.12	< 0.01	< 0.01
Lead	[mg/kg]		< 0.01	3.17	< 0.01	< 0.01
Cadmium	[mg/kg]		< 0.01	< 0.01	< 0.01	< 0.01
Chromium total	[mg/kg]		1.89	2.84	0.40	1.51
Cobalt	[mg/kg]		0.23	0.25	0.13	0.25
Copper	[mg/kg]		1.44	3.65	1.72	1.35
Nickel	[mg/kg]		< 0.01	2.62	0.08	< 0.01
Mercury	[mg/kg]		1.26	1.94	0.89	1.84
Zinc	[mg/kg]		3.62	14.40	7.21	1.57
Tin	[mg/kg]		41.00	11.30	40.50	15.30



TABLE OF RESULTS

			OEKO-TEX® 100 Product Class I	Index 1 INK EPIC HD CLEAR 2	Index 2 INK EPIC PF ORANGE	Index 3 INK EPIC PF MARINE	Index 4 INK EPIC PF FL. YELLOW
PHENOLS (Chlorinated and OPP) Oeko-Tex® Standard 200, 5							
No. of tests				1	1	1	1
Orthophenylphenol (OPP)	[mg/kg]	< 50.0		< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol (PCP)	[mg/kg]	< 0.05		< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,5-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenol (TeCP, Sum)	[mg/kg]	< 0.05		< 0.01	< 0.01	< 0.01	< 0.01

			OEKO-TEX® 100 Product Class I	Index 5 INK EPIC PERF BASE	Index 6 INK EPIC QUICK WHITE	Index 7 INK EPIC FINESSE	Index 8 INK EPIC ECHO WHITE
PHENOLS (Chlorinated and OPP) Oeko-Tex® Standard 200, 5							
No. of tests				1	1	1	1
Orthophenylphenol (OPP)	[mg/kg]	< 50.0		< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol (PCP)	[mg/kg]	< 0.05		< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,5-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenol (TeCP, Sum)	[mg/kg]	< 0.05		< 0.01	< 0.01	< 0.01	< 0.01

			OEKO-TEX® 100 Product Class I	CO FABRIC PRINTED W/ EPIC HD CLEAR 2	CO FABRIC PRINTED W/ EPIC PF ORANGE	CO FABRIC PRINTED W/ EPIC PF MARINE	CO FABRIC PRINTED W/ EPIC PF FL. YELLOW
PHENOLS (Chlorinated and OPP) Oeko-Tex® Standard 200, 5							
No. of tests				1	1	1	1
Orthophenylphenol (OPP)	[mg/kg]	< 50.0		< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol (PCP)	[mg/kg]	< 0.05		< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,5-TeCP	[mg/kg]			< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenol (TeCP, Sum)	[mg/kg]	< 0.05		< 0.01	< 0.01	< 0.01	< 0.01



TABLE OF RESULTS

		OEKO-TEX®	CO	CO	CO	CO
		100	FABRIC	FABRIC	FABRIC	FABRIC
			PRINTED	PRINTED	PRINTED	PRINTED
		Product	W/	W/	W/	W/
			EPIC	EPIC	EPIC	EPIC
			PERF.	QUICK		ECHO
		Class I	BASE	WHITE	FINESSE	WHITE
PHENOLS (Chlorinated and OPP)						
Oeko-Tex® Standard 200, 5						
No. of tests			1	1	2	1
Orthophenylphenol (OPP)	[mg/kg]	< 50.0	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol (PCP)	[mg/kg]	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-TeCP	[mg/kg]		< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-TeCP	[mg/kg]		< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,5-TeCP	[mg/kg]		< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenol (TeCP, Sum)	[mg/kg]	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01

		OEKO-TEX®	CO	CO		
		100	FABRIC	FABRIC		
			PRINTED	PRINTED		
		Product	W/	W/		
			EPIC PF	EPIC		
		Class I	MARINE	FINESSE		
PLASTISIZERS						
Oeko-Tex® Standard 200, 6						
No. of tests			1	1		
DINP*	[%]		n/d	n/d		
DNOP	[%]		n/d	n/d		
DEHP	[%]		n/d	n/d		
DIDP	[%]		n/d	n/d		
BBP	[%]		n/d	n/d		
DBP	[%]		n/d	n/d		
DIBP	[%]		n/d	n/d		
DHP	[%]		n/d	n/d		
DIHP*	[%]		n/d	n/d		
DUP*	[%]		n/d	n/d		
DDDP	[%]		n/d	n/d		
Sum	[%]	< 0.1	n/d	n/d		
TCEP	[%]	< 0.1	n/d	n/d		



TABLE OF RESULTS

		OEKO-TEX® 100 Product	Index 5 INK EPIC PERF	Index 8 INK EPIC ECHO WHITE		
		Class I	BASE			
ORGANIC TIN COMPOUNDS Oeko-Tex® Standard 200, 7						
No. of tests			1	1		
TBT	[mg/kg]	< 0.5	n/d	n/d		
DBT	[mg/kg]	< 1.0	n/d	n/d		
MBT	[mg/kg]		n/d	n/d		
TPT	[mg/kg]	< 0.5	n/d	n/d		
DOT	[mg/kg]	< 1.0	n/d	n/d		

		OEKO-TEX® 100 Product	Index 1 INK EPIC HD	Index 2 INK EPIC PF ORANGE	Index 3 INK EPIC PF MARINE	Index 4 INK EPIC PF FL. YELLOW
		Class I	CLEAR 2			
AZO-DYESTUFFS EN 14362-1 (screening, CO etc.)						
No. of tests			1	1	1	1
4-Aminodiphenyl	[mg/kg]		n/d	n/d	n/d	n/d
Benzidine	[mg/kg]		n/d	n/d	n/d	n/d
4-Chloro-o-toluidine	[mg/kg]		n/d	n/d	n/d	n/d
2-Naphthylamine	[mg/kg]		n/d	n/d	n/d	n/d
o-Aminoazotoluene	[mg/kg]		n/d	n/d	n/d	n/d
2-Amino-4-nitrotoluene	[mg/kg]		n/d	n/d	n/d	n/d
p-Chloraniline	[mg/kg]		n/d	n/d	n/d	n/d
2,4-Diaminoanisole	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Diaminodiphenylmethane	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dichlorobenzidine	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dimethoxybenzidine	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dimethylbenzidine	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	[mg/kg]		n/d	n/d	n/d	n/d
p-Cresidine	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Methylene-bis-(2-chloraniline)	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Oxydianiline	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Thiodianiline	[mg/kg]		n/d	n/d	n/d	n/d
o-Toluidine	[mg/kg]		n/d	n/d	n/d	n/d
2,4-Toluylenediamine	[mg/kg]		n/d	n/d	n/d	n/d
2,4,5-Trimethylaniline	[mg/kg]		n/d	n/d	n/d	n/d
o-Anisidine	[mg/kg]		n/d	n/d	n/d	n/d
2,4-Xylidine	[mg/kg]		n/d	n/d	n/d	n/d
2,6-Xylidine	[mg/kg]		n/d	n/d	n/d	n/d



TABLE OF RESULTS

		OEKO-TEX® 100 Product	Index 5 INK EPIC PERF	Index 6 INK EPIC QUICK WHITE	Index 7 INK EPIC FINESSE	Index 8 INK EPIC ECHO WHITE
		Class I	BASE	WHITE	FINESSE	WHITE
AZO-DYESTUFFS EN 14362-1 (screening, CO etc.)						
No. of tests			1	1	1	1
4-Aminodiphenyl	[mg/kg]		n/d	n/d	n/d	n/d
Benzidine	[mg/kg]		n/d	n/d	n/d	n/d
4-Chloro-o-toluidine	[mg/kg]		n/d	n/d	n/d	n/d
2-Naphthylamine	[mg/kg]		n/d	n/d	n/d	n/d
o-Aminoazotoluene	[mg/kg]		n/d	n/d	n/d	n/d
2-Amino-4-nitrotoluene	[mg/kg]		n/d	n/d	n/d	n/d
p-Chloraniline	[mg/kg]		n/d	n/d	n/d	n/d
2,4-Diaminoanisole	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Diaminodiphenylmethane	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dichlorobenzidine	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dimethoxybenzidine	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dimethylbenzidine	[mg/kg]		n/d	n/d	n/d	n/d
3,3'-Dimethyl-4,4'- diaminodiphenylmethane	[mg/kg]		n/d	n/d	n/d	n/d
p-Cresidine	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Methylene-bis-(2-chloraniline)	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Oxydianiline	[mg/kg]		n/d	n/d	n/d	n/d
4,4'-Thiodianiline	[mg/kg]		n/d	n/d	n/d	n/d
o-Toluidine	[mg/kg]		n/d	n/d	n/d	n/d
2,4-Toluylenediamine	[mg/kg]		n/d	n/d	n/d	n/d
2,4,5-Trimethylaniline	[mg/kg]		n/d	n/d	n/d	n/d
o-Anisidine	[mg/kg]		n/d	n/d	n/d	n/d
2,4-Xylidine	[mg/kg]		n/d	n/d	n/d	n/d
2,6-Xylidine	[mg/kg]		n/d	n/d	n/d	n/d

		OEKO-TEX® 100 Product	CO FABRIC PRINTED W/ EPIC PF ORANGE	CO FABRIC PRINTED W/ EPIC PF MARINE	CO FABRIC PRINTED W/ EPIC PF FL. YELLOW
		Class I			
FASTNESS TO PERSPIRATION ISO 105/E04					
No. of tests			1	1	1
Fastness to acid solution					
- Change in color	[grade]	3-4	4-5	4-5	4-5
- Staining	[grade]		4-5	4-5	4-5
Fastness to alkaline solution					
- Change in color	[grade]	3-4	4-5	4-5	4-5
- Staining	[grade]		4-5	4-5	4-5



TABLE OF RESULTS

		OEKO-TEX®	CO	CO	CO	
		100	FABRIC	FABRIC	FABRIC	
			PRINTED	PRINTED	PRINTED	
			W/	W/	W/	
		Product	EPIC PF	EPIC PF	EPIC PF	
		Class I	ORANGE	MARINE	FL.	
					YELLOW	
FASTNESS TO WATER						
ISO 105/E01						
No. of tests			1	1	1	
- Change in color	[grade]		4-5	4-5	4-5	
- Staining	[grade]	3	4-5	4-5	4-5	
		OEKO-TEX®	CO	CO	CO	
		100	FABRIC	FABRIC	FABRIC	
			PRINTED	PRINTED	PRINTED	
			W/	W/	W/	
		Product	EPIC PF	EPIC PF	EPIC PF	
		Class I	ORANGE	MARINE	FL.	
					YELLOW	
FASTNESS TO RUBBING						
ISO 105/X12 (Öko-Tex)						
No. of tests			1	1	1	
- Dry crocking test	[grade]	4	3-4	3-4	4-5	
		OEKO-TEX®	CO	CO	CO	
		100	FABRIC	FABRIC	FABRIC	
			PRINTED	PRINTED	PRINTED	
			W/	W/	W/	
		Product	EPIC PF	EPIC PF	EPIC PF	
		Class I	ORANGE	MARINE	FL.	
					YELLOW	
FASTNESS TO SALIVA AND						
PERSPIRATION						
LMBG 82.10-1 (modified)						
No. of tests			1	1	1	
- Fast to saliva	[yes/no]	yes	yes	yes	yes	
- Fast to perspiration	[yes/no]	yes	yes	yes	yes	