

Textilní zkušební ústav

(Textile Testing Institute)
Václavská 6, 65841 Brno, Česká republika

ACCREDITED TESTING LABORATORY No. 1001

TEST REPORT

AZL 15/ 0306-01

CUSTOMER: VÚB a.s.
Na Ostrově 1165
562 23 Ústí nad Orlicí

SAMPLE: Knitted grey fabric
(according to the customer order) Colour: white
Fibre composition: 50% Bio cotton / 30% Tencel C / 20% Tencel
Untreated reference: knitted fabric
Colour: red
Fibre composition: 60% cotton / 40% lyocell (Tencel)

SUBJECT OF ASSESSMENT:

Determination of antibacterial activity of antibacterial finished products

CONDITIONS OF APPLICATION OF THE TEST REPORT:

Test Report contains result of the tests related to the submitted sample only. Sampling has been done by customer. The Report may not be reproduced in the way other than as a complete set. Reproduction of certain parts of the Report is subject to approval of the test laboratory, which has issued it.

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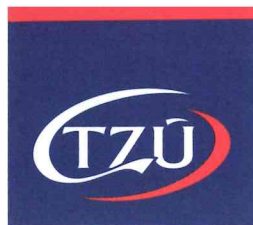
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Textilní zkušební ústav

AZL 15/ 0306-01

page 2

PROCEDURE OF ASSESSMENT:

Determination of antibacterial activity of antibacterial finished products

was determined according to EN ISO 20743 – Absorption method.

Used bacteria (cultures delivered from National institute of public health and Czech collection of Microorganisms):

CNCTC 6120	<i>Klebsiella pneumoniae</i>
CCM 4516	<i>Staphylococcus aureus</i>

CNCTC - Czech National Collection of Type Cultures

CCM - Czech Collection of Microorganisms

Conditions of assessment:

- adjustment of samples: washing according to EN ISO 6330, number of washing: 3x, detergent ECE, temperature 60 °C
- mass of samples: (0,40 ± 0,05) g
- number of samples: six treated samples, six untreated references
- sterilization of test samples: dry heat sterilization (124 °C, 3 h)
- shake-out medium: tryptone
- dilution medium: tryptone
- influence time: 24 h
- temperature in incubator: 37 °C
- agar: Plate count agar (PCA)
- incubation time of Petri dishes: 24 h

Results:

The antibacterial activity value is obtained according to the following formula and it says, by how many logarithmic orders the growth of the tested bacteria in the treated sample is lower comparing to the untreated reference

$$A = (\log C_t - \log C_0) - (\log T_t - \log T_0) = F - G$$

where

A is the antibacterial activity value

F is the growth value on the control fabric ($F = \log C_t - \log C_0$)

G is the growth value on the antibacterial-treated sample ($G = \log T_t - \log T_0$)

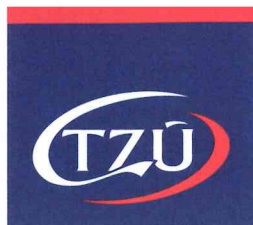
log C_t is the average common logarithm for the number of bacteria obtained from three test samples of control fabric after an 18 h to 24 h incubation

log C₀ is the average common logarithm for the number of bacteria obtained from three test samples of control fabric after immediately after inoculation

log T_t is the average common logarithm for the number of bacteria obtained from three antibacterial-treated test samples after an 18 h to 24 h incubation

log T₀ is the average common logarithm for the number of bacteria obtained from three antibacterial-treated test samples immediately after inoculation





Textilní zkušební ústav

AZL 15/ 0306-01

page 3

TEST RESULTS:

Knitted grey fabric Colour: white Fibre composition: 50% Bio cotton / 30% Tencel C / 20% Tencel				
Untreated reference: knitted fabric Colour: red Fibre composition: 60% cotton / 40% lyocell (Tencel)				
Name of test bacteria (strain number)	<i>Staphylococcus aureus</i> (CCM 4516)		<i>Klebsiella pneumoniae</i> (CNCTC 6120)	
Concentration of inoculum (CFU/ml)	$1,7 \cdot 10^5$		$1,3 \cdot 10^5$	
Difference of extremes for three control fabrics (log)	0 h	24 h	0 h	24 h
	0,35	0,92	0,01	0,03
Growth value of F	3,30		4,51	
Growth value of G	- 0,06		4,50	
Antibacterial activity value A	3,36		0,01	
Sterilization method	dry heat sterilization (124 °C, 3 h)			
Incubation time	24 h			

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Head of Testing Laboratory

