



smartfiber AG

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Labor

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TEST REPORT

Test Report No:	42-2009
Client:	smartfiber AG Breitscheidstr. 154 D-07407 Rudolstadt
Sample number:	2.5/IT-013/75/2009
Sample description:	wool / smartcel sensitive
Internal growth control:	2.5/IT-013/74/2009
Receipt of order:	2009-09-15
Examination period:	September 2009

Assessment of the sample

The examined specimen showed a strong antibacterial activity against the test strain *Staphylococcus aureus* ATCC 6538 and a significant antibacterial activity against test strain *Klebsiella pneumoniae* ATCC 4352 under given test conditions.

Seal and Sign

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Examination task

Evaluation of textile 3 D structures regarding their antibacterial activity.

Methods

The examination is carried out according to JIS Japanese Industrial Standard, JIS L 1902: 2002 "Testing method for antibacterial activity and efficacy on textile products".

Test strains: Staphylococcus aureus ATCC 6538,
Klebsiella pneumoniae ATCC 4352

Following examination was carried out:

Sample weight: 400mg
 Calculation: only S value, not L value
 Preincubation C: Columbia Blood agar
 Preincubation D: CASO broth
 Dilute agent for inoculation: physiologic salt solution
 Incubation: 37°C
 Specimen preparation: Incubation 15 min at 121°C
 Sample number: **2.5/IT-013/75/2009**
 Sample description: **wool / smartcel sensitive**
 Date of receipt: **2009-09-15**

Calculation of the total antibacterial activity

$\log \text{cfu (IWK)}_{18\text{h}} - \log \text{cfu}(\text{sample})_{18\text{h}} = \text{total antibacterial activity}$

IWK= Interne Wachstumskontrolle (internal growth control)

Criteria of evaluation

Antibacterial activity	Total antibacterial activity
slight	0.5 bis 1
significant	>1 bis < 3
strong	≥ 3



Specimen

Sample description	Sample number
Wool / smartcel sensitive	2.5/IT-013/75/2009

Growth value IWK (2.5/IT-013/74/2009)

	Average value (cfu)	Average value (log cfu)	Growth value
St. aureus ATCC 6538			
0 h	1,18E+06	6,07	
18 h	1,04E+08	8,02	1,95
Klebs. pneumoniae ATCC 4352			
0 h	1,22E+06	6,09	
18 h	2,82E+08	8,45	2,36

The growth value was calculated from the difference between the common logarithm of the number of colony forming units (cfu) after 18 h and the start time 0 h.


Total antibacterial activity of sample No. 2.5/IT-013/75/2009

	Average (cfu)	Average (log cfu)	Total antibacterial activity (related to IWK)
St. aureus ATCC 6538			
0 h			
18 h	9,90E+04	5,00	3,02
Klebs. pneumoniae ATCC 4352			
0 h			
18 h	6,57E+05	5,82	2,63

Evaluation of the test results

The examined specimen showed a strong antibacterial activity against the test strain *Staphylococcus aureus* ATCC 6538 and a significant antibacterial activity against test strain *Klebsiella pneumoniae* ATCC 4352 under given test conditions.