

Textile Laboratory

**Test Report**

No: TXC1060 /2017 /SP

Date: Jan. 02, 2018

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smartfiber AG  
Im Weidig 12, D-07407 Rudolstadt

The following sample was submitted and identified by applicant as:

Sample Description : One sample of knitted fabric

Color : Black

Fiber Content : 57% Cotton 28% Bamboo (Viscose)  
10% Smartcel™ Sensitive (Lyocell) 5% Spandex

Fabric Weight : 250g/yd (180gsm)

Style No. : JS675

Applicant : smartfiber AG

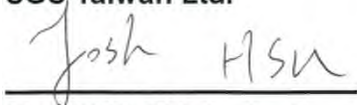
Sample Receiving Date : Dec. 13, 2017

Test Performance Period : Dec. 13, 2017 to Jan. 02, 2018

Test Performed : Selected test(s) as requested by applicant.

Test Results : For further details, please refer to the following page(s).

Signed for and on behalf of  
SGS Taiwan Ltd.



Hsu Chih Chieh, Josh  
Test Specialist

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Test Results:

Antibacterial Finishes on Textile Materials (JIS L1902:2015)

As received

Test Bacteria : Staphylococcus aureus ATCC 6538P		
Absorption Method	CFU	LOG
The test inoculum (CFU/mL)	2.0×10 <sup>5</sup>	5.30
Control specimen at 0hr (C <sub>0</sub> )	2.9×10 <sup>4</sup>	4.46
Control specimen at 18hr (C <sub>t</sub> )	2.5×10 <sup>7</sup>	7.39
Testing specimen at 0hr (T <sub>0</sub> )	8.6×10 <sup>3</sup>	3.93
Testing specimen at 18hr (T <sub>t</sub> )	<20	<1.3
Control specimen growth value (F) F = log C <sub>t</sub> - log C <sub>0</sub>	Testing specimen growth value (G) G = log T <sub>t</sub> - log T <sub>0</sub>	Antibacterial activity value (A) A = (log C <sub>t</sub> - log C <sub>0</sub> ) - (log T <sub>t</sub> - log T <sub>0</sub> ) = F - G
2.93	-2.63	>6.09

Test Bacteria : Klebsiella pneumonia ATCC 4352		
Absorption Method	CFU	LOG
The test inoculum (CFU/mL)	1.9×10 <sup>5</sup>	5.27
Control specimen at 0hr (C <sub>0</sub> )	2.9×10 <sup>4</sup>	4.46
Control specimen at 18hr (C <sub>t</sub> )	3.2×10 <sup>7</sup>	7.50
Testing specimen at 0hr (T <sub>0</sub> )	1.8×10 <sup>4</sup>	4.25
Testing specimen at 18hr (T <sub>t</sub> )	<20	<1.3
Control specimen growth value (F) F = log C <sub>t</sub> - log C <sub>0</sub>	Testing specimen growth value (G) G = log T <sub>t</sub> - log T <sub>0</sub>	Antibacterial activity value (A) A = (log C <sub>t</sub> - log C <sub>0</sub> ) - (log T <sub>t</sub> - log T <sub>0</sub> ) = F - G
3.04	-2.95	>6.2

Note:

1. The test report merely reflects the test results of the consigned matters of the client and is not a certification of the legitimacy of the related products.
2. The report is in vain if it is partly reproduced or used.
3. The test inoculum shall be at 1.0\*10<sup>5</sup> to 3.0\*10<sup>5</sup> CFU/ml
4. Control specimen growth value (F) shall be ≥ 1.0
5. Antibacterial activity value (A) calculation, in the case of log C<sub>0</sub> > log T<sub>0</sub>, substitute log C<sub>0</sub> for log T<sub>0</sub>.
6. Antibacterial activity value (A) shall be 2 ≤ A < 3 for Effect antibacterial property.
7. Antibacterial activity value (A) shall be 3 ≤ A for Full effect antibacterial property.

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Test Results:

Antibacterial Finishes on Textile Materials (JIS L1902:2015)

After 20 washes\*

Test Bacteria : Staphylococcus aureus ATCC 6538P		
Absorption Method	CFU	LOG
The test inoculum (CFU/mL)	2.0×10 <sup>5</sup>	5.30
Control specimen at 0hr (C <sub>0</sub> )	2.9×10 <sup>4</sup>	4.46
Control specimen at 18hr (C <sub>t</sub> )	2.5×10 <sup>7</sup>	7.39
Testing specimen at 0hr (T <sub>0</sub> )	2.4×10 <sup>4</sup>	4.38
Testing specimen at 18hr (T <sub>t</sub> )	<20	<1.3
Control specimen growth value (F) F = log C <sub>t</sub> - log C <sub>0</sub>	Testing specimen growth value (G) G = log T <sub>t</sub> - log T <sub>0</sub>	Antibacterial activity value (A) A = (log C <sub>t</sub> - log C <sub>0</sub> ) - (log T <sub>t</sub> - log T <sub>0</sub> ) = F - G
2.93	-3.08	>6.09

Test Bacteria : Klebsiella pneumonia ATCC 4352		
Absorption Method	CFU	LOG
The test inoculum (CFU/mL)	1.9×10 <sup>5</sup>	5.27
Control specimen at 0hr (C <sub>0</sub> )	2.9×10 <sup>4</sup>	4.46
Control specimen at 18hr (C <sub>t</sub> )	3.2×10 <sup>7</sup>	7.50
Testing specimen at 0hr (T <sub>0</sub> )	2.8×10 <sup>4</sup>	4.44
Testing specimen at 18hr (T <sub>t</sub> )	<20	<1.3
Control specimen growth value (F) F = log C <sub>t</sub> - log C <sub>0</sub>	Testing specimen growth value (G) G = log T <sub>t</sub> - log T <sub>0</sub>	Antibacterial activity value (A) A = (log C <sub>t</sub> - log C <sub>0</sub> ) - (log T <sub>t</sub> - log T <sub>0</sub> ) = F - G
3.04	-3.14	>6.2

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4. Control specimen growth value (F) shall be ≥ 1.0
5. Antibacterial activity value (A) calculation, in the case of log C<sub>0</sub> > log T<sub>0</sub>, substitute log C<sub>0</sub> for log T<sub>0</sub>.
6. Antibacterial activity value (A) shall be 2 ≤ A < 3 for Effect antibacterial property.
7. Antibacterial activity value (A) shall be 3 ≤ A for Full effect antibacterial property.

\* Washing condition: AATCC 135 2012 - (2)IIB - Machine wash at 80±5°F  
 - using 1993 AATCC Standard Reference Detergent  
 - gentle cycle -line dry - 20 cycles

Tested by relevant SGS laboratory.

\*\*\* End of Report \*\*\*

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