Aquamira Technologies

(USA)

Determination of the antimicrobial efficacy of carbon filter block samples with Irgaguard B 5000 supplied by Aquamira Technologies according to JIS Z 2801 method.

Technical Report No. USA # 87

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1. Purpose

Evaluation of antimicrobial efficacy of carbon filter block samples with Irgaguard B5000 provided by Aquamira Technologies.

2. Conclusion and considerations

⇒ The efficacy results of samples A, B & C showed excellent antimicrobial activity against *S. aureus* and *E. coli*.

3. Evaluation

3.1 Test sample

1) Control
2) A
3) B
4) C

3.2 Test method and conditions

Testing institution: Japan Spinners Inspecting Foundation
Method: JIS Z 2801 Quantitative Test
Bacteria: *S. aureus* (NBRC 12732)
E. coli (NBRC 3972)

Procedure:
In accordance with JIS Z 2801-2000, bacteria were instilled on the samples, covered with a regular film, and kept at 35°C for 24hrs. The number of viable cells of bacteria was counted. Value of antimicrobial activity of each sample was calculated according to the following formula:

R = Log B/C

where:
R: value of antimicrobial activity
B: average of the number of bacteria on the control samples (untreated samples) after incubation for 24 hrs
C: average of the number of bacteria on the antimicrobial samples (treated samples) after incubation for 24 hrs

Criteria for judging antimicrobial efficacy:
The value of antimicrobial activity shall not be under 2.0 for the antimicrobial efficacy of antimicrobial products. In other words, when the value is 2.0 or more, the treated sample is judged to have antimicrobial efficacy based on JIS Z 2801.

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Blank film:
Blank film can be used as a control sample in substitution for untreated sample when the untreated samples are not available and do not have any effect on antimicrobial efficacy. Covering film of size 5cm × 5cm is commonly used.

4. Test results

Table 1 Antimicrobial efficacy of test samples against *S. aureus*
(Number of bacteria immediately after inoculation: 2.1×10^5)

Test sample	Number of bacteria after incubation for 24 hrs	Antimicrobial activity (R)
1) Control	1.2×10^5	-
2) A	1.4×10^2	2.9
3) B	<10	4.0
4) C	<10	4.0
Blank film	5.8×10^5	

Table 2 Antimicrobial efficacy of test samples against *E. coli*
(Number of bacteria immediately after inoculation: 2.3×10^5)

Test sample	Number of bacteria after incubation for 24 hrs	Antimicrobial activity (R)
1) Control	1.2×10^6	-
2) A	<10	5.0
3) B	<10	5.0
4) C	<10	5.0
Blank film	1.5×10^6	