



The Chemical Company

Evaluation Report of Antimicrobial Efficacy

**Determination of the anti-microbial efficacy of
PMMA artificial stone samples containing Irgaguard B5000**

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Customer: KOLPA, SLO

**Test report: BSL-140
(TA 20100906)**

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1. Purpose

Evaluation of antimicrobial efficacy of PMMA artificial stone samples containing Irgaguard B5000.

2. Conclusion and considerations

- Table 1 shows the results of evaluation of antimicrobial efficacy against *Escherichia coli*.
- Irgaguard B5000-containing sample TA20100906-2 had antimicrobial efficacy against *Escherichia coli*.
- Compared with blank film, the number of viable cells of bacteria on sample TA20100906-1: No Irgaguard in your standard recipe after 24 hours decreased by 10^2 , suggesting that the sample had slight antimicrobial efficacy.

3. Evaluation

3.1 Test sample

- 1) TA20100906-1: No Irgaguard in your standard recipe
- 2) TA20100906-2: 0.25% Irgaguard B5000 in your standard recipe

3.2 Test method and conditions

Testing institution: Japan Spinners Inspecting Foundation

Method: JIS Z 2801 Quantitative Test

Bacteria: *Escherichia 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

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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.

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 *Esherichia coli*****(Number of bacteria immediately after inoculation: 2.1×10^5)**

Test sample	Number of bacteria after incubation for 24 hrs	Antimicrobial activity (R)
1) TA20100906-1: No Irgaguard in your standard recipe	2.5×10^5	-
2) TA20100906-2: 0.25% Irgaguard B5000 in your standard recipe	10	4.3
Blank film	2.5×10^7	

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