



August 18, 2011

Pelma S.p.A,
25020 Bassano B. No,
Via Mazzini 500, Italy

Antimicrobial Assessment of Five PU Foam Samples

2717085.1

Five PU foam samples, treated with Ultra-Fresh, were received from Pelma on July 29, 2011. At Thomson Research Associates Inc., the samples were tested for antimicrobial activity using a quantitative test method.

PROCEDURE

Quantitative Antibacterial Assessment:

ISO 20743:2007 was used to quantitatively test the specimen for antibacterial activity. In brief:

1. A piece of the sample was placed into a container with a lid.
2. A 0.2 mL inoculum of *Staphylococcus aureus* (ATCC #6538), was placed, in microdroplets, on the surface of the samples. 0.05% Tween 80 was added to the inoculum as a wetting agent.
3. The specimen was incubated 18 hours at 37 degrees C.
4. 20 mL of Lethen broth was added to the container and shaken. The bacteria in the liquid were quantified by using a series of dilution plates.

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RESULTS

M_a = logarithm of concentration of starting bacterial inoculum (CFU/mL)

M_b = logarithm of number of bacteria after 18 hour incubation on untreated sample/inoculum control (average of 3 specimens)

M_c = logarithm of number of bacteria after 18 hour incubation on treated sample (average of 3 specimens)

$S = \text{Log Reduction} = M_b - M_c$

| Quantitative Assessment of Activity – ISO 20743:2007 | | | | | |
|---|--|---|------------------------|-------------------|-------------|
| <i>S. aureus</i> | | | | | |
| Concentration of starting inoculum (M_a) | | log 3.52 x 10 ⁴ CFU/mL = 4.6 | | | |
| Inoculum Control after 18 hour incubation (M_b), | | log 1.65 x 10 ⁷ CFU/mL = 7.2 | | | |
| Growth Value ($F = M_b - M_a$) | | 2.6 | | | |
| Sample Description | | No. Bacteria Recovered | Log Recovery (M_c) | Log Reduction (S) | % Reduction |
| 1 | Thermofresh/Climafresh 1 Pink foam | 2.56 x 10 ¹ | 1.4 | 5.8 | >99.9% |
| 2 | Thermofresh/Climafresh 2 White foam | <2.00 x 10 ¹ | <1.3 | >5.9 | >99.9% |
| 3 | Thermofresh/Climafresh 3 Yellow foam | <2.00 x 10 ¹ | <1.3 | >5.9 | >99.9% |
| 4 | Thermofresh/Climafresh 4 Light green foam | 2.56 x 10 ¹ | 1.4 | 5.8 | >99.9% |
| 5 | Thermofresh/Climafresh 5 Orange foam | <2.00 x 10 ¹ | <1.3 | >5.9 | >99.9% |

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