



August 05, 2010

Mr. Xu Ping
Objektplanung Stellwag

Antimicrobial Assessment of Two Polyethylene Samples
Treated with Ultra-Fresh CA-16

2617741

Two polyethylene samples, treated with Ultra-Fresh CA-16, were received from Objektplanung Stellwag on July 26, 2010. At Thomson Research Associates Inc., the samples were tested for antimicrobial activity using a quantitative test method.

PROCEDURE

Quantitative Antibacterial Assessment:

ISO 22196:2007 was used to quantitatively test the specimen for antibacterial activity. In brief:

1. The sample was placed into a container with a lid.
2. A 0.1 mL inoculum of *Klebsiella pneumoniae* (ATCC #4352) was placed, in microdroplets, on the surface of the samples. Sterile films were placed over the inoculum to encourage good contact.
3. The specimen was incubated 24 hours at 37C.
4. 20 mL of Lethen broth was added to the container and shook. The liquid was plated using dilution techniques.
5. The "Value of Antimicrobial Activity" was carried out using the formula

$$R = [\log (B/C)]$$

Where:

R= value of antimicrobial activity

B = Average of the number of viable cells of bacteria on the untreated test piece / inoculum control after 24 hours

C = Average of the number of viable cells of bacteria on the antimicrobial test piece after 24 hours.

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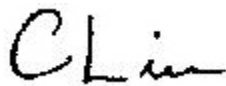
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RESULTS

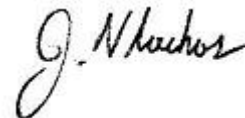
Quantitative Assessment of Activity - ISO 22196:2007					
<i>K. pneumoniae</i>					
Concentration of starting inoculum			1.78 x 10 ⁵ CFU/mL		
Sample Description		No. Bacteria Recovered	Log Value	R = [log(B/C)]	% Reduction
1	No.1, PE Blue Fridge Mat, 225 g/piece (Production Trial)	<2.00 x 10 ¹	<1.3	>5.1	>99.9%
2	No.2, PE Transparent Fridge Mat, 225 g/piece (Production Trial)	<2.00 x 10 ¹	<1.3	>5.1	>99.9%
Inoculum Control		2.51 x 10 ⁶	6.4	---	---

Note: The level of treatment stated above indicates theoretical levels only.

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Microbiologist



Microbiologist

c: Joseph Xu

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