



May 13, 2020

Dott. Cristian Pandolfi

Decoral System s.r.l.

Viale del Lavoro 5

37040 Arcole (Verona)

TRA/012-22.04.2020

Quantitative Assessment of Four Samples

3607355

Four PE coating samples, three of which were treated with Ultra-Fresh CA-16, were received from Decoral System s.r.l. on May 01, 2020. At Thomson Research Associates, Inc., the samples were tested for antibacterial activity using a quantitative test method.

PROCEDURE

Quantitative Antibacterial Assessment:

ISO 22196:2011 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 0.3 mL inoculum of *Escherichia coli* (ATCC #8739) or *Staphylococcus aureus* (ATCC #6538) was placed, in microdroplets, on the surface of the samples.
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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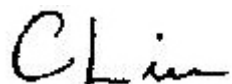
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Quantitative Assessment of Activity - ISO 22196:2011 <i>E. coli</i>					
Concentration of starting inoculum			2.57 x 10 ⁵		
Sample Description		No. Bacteria Recovered	Log Value	R = [log(B/C)]	% Reduction
1	ADA 2879/1 metal sheet covered with PE opaque powder coating. Blank sample	1.57 x 10 ⁷	7.2	---	---
2	ADA 2879/2 metal sheet covered with PE opaque with Ultra-Fresh CA-16	8.49 x 10 ¹	1.9	5.3	>99.9%
3	ADA 2879/3 metal sheet covered with PE opaque powder coating with Ultra-Fresh CA-16	5.69 x 10 ¹	1.8	5.4	>99.9%
4	ADA 2879/4 metal sheet covered with PE opaque powder coating with Ultra-Fresh CA-16	2.56 x 10 ¹	1.4	5.8	>99.9%
Inoculum Control		1.76 x 10 ⁷	7.2	----	----

Quantitative Assessment of Activity - ISO 22196:2011 <i>S. aureus</i>					
Concentration of starting inoculum			2.40 x 10 ⁵		
Sample Description		No. Bacteria Recovered	Log Value	R = [log(B/C)]	% Reduction
1	ADA 2879/1 metal sheet covered with PE opaque powder coating. Blank sample	9.44 x 10 ⁴	5.0	---	---
2	ADA 2879/2 metal sheet covered with PE opaque with Ultra-Fresh CA-16	2.92 x 10 ¹	1.5	3.5	>99.9%
3	ADA 2879/3 metal sheet covered with PE opaque powder coating with Ultra-Fresh CA-16	6.07 x 10 ¹	1.8	3.2	>99.9%
4	ADA 2879/4 metal sheet covered with PE opaque powder coating with Ultra-Fresh CA-16	<2.00 x 10 ¹	<1.3	>3.7	>99.9%
Inoculum Control		1.55 x 10 ⁵	5.2	----	----

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

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