

Antimicrobial Test Laboratories

Fast, Reliable Antimicrobial Efficacy Testing

EcoActive Surfaces Study ID NG1619 - JIS Z 2801:2000 (Double Replicate, "Office" Light)

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Client Information

Company Name:	<u>EcoActive Surfaces</u>	Sponsor(s):	<u>Stewart Avarett</u>
Sponsor's Phone:	<u>(954) 788-1880</u>	E-mail(s):	<u>ecoactivesurfaces@bellsouth.net</u>

Test Information

Test(s) Performed:	<u>JIS Z 2801:2000 Double replicate, without cover film, spot-inoculated (see notes)</u>		
SOP Followed:	<u>Custom Protocol</u>	Performed by:	<u>J. Williams, A. Rex</u>

Sample Information

Test Substance ID(s):	<u>OxiTitan VLR</u>	Batch/Lot #:	<u>N/A</u>
Sample (s) Received:	<u>8/7/2009</u>		

Parameters

Microorganism(s):	<u>MS2 Phage, ATCC 15597-B1</u>	Exposure Temp.	<u>Ambient (23 - 25°C)</u>
Subculture Number:	<u>N/A (Stock Virus Preparation)</u>	Type of Carrier:	<u>2 x 2 x 1/4 Inch Ceramic Coupon</u>
Growth Medium:	<u>E. coli ATCC 15597 Host Cells</u>	# of Test Carriers:	<u>16 Total: 8 Control, 8 Test</u>
Culture Age:	<u>N/A</u>	Target Inoculum:	<u>1.5 x 10⁵ CFU/coupon (Dry)</u>
Diluent for Plating:	<u>D/E Broth (0.9ml Blanks)</u>	Plating medium:	<u>Trypticase Soy Agar (Difco)</u>
Plate Incubation Time:	<u>18 Hours</u>	Plate Inc. Temp.:	<u>36.0 ± 1°C</u>
Luminometer Reading:	<u>Ranged from 220 to 230 lux</u>	Inoculum Volume:	<u>0.100 mL (Spotted Onto Surface)</u>

Controls

Neutralized:	<u>Passed, Agar Plates Positive (T=0)</u>	Growth Control:	<u>Passed, MS2 +</u>
Media Sterility:	<u>Passed, Control Plates Negative</u>		

Test Results

Test(s) Valid?:	<u>Yes, See Table, Page 2</u>	"Passed?"	<u>N/A</u>
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Notes: The study was conducted in accordance with JIS Z 2801:2000, but utilizing 2 replicates and without cover film. Test and control samples were analyzed *just after the inoculum had dried*, and also 0.25, 4, and 24 hours thereafter, with room temperature incubation. The study suggests that OxiTitan VLR, when exposed to normal "office light" conditions, enhances die-off of MS2 virus (and therefore probably most viruses) on a surface.

Tests Completed: 10/9/2009

Report Sent: 10/9/2009

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Additional Test Information

Double Replicate JIS Z 2801 Test Results for MS2 Phage ATCC 15597-B1

Sample	Time Point	Replicate Number	PFU/Coupon
Control Surface (Light)	"Time Zero" (Dried Inoculum)	R1	1.11E+07
		R2	8.15E+06
	15 Minutes	R1	1.10E+07
		R2	8.80E+06
	4 Hours	R1	9.15E+06
		R2	7.50E+06
	24 Hours	R1	3.70E+06
		R2	1.85E+06
OxiTitan VLR on Ceramic Coupon	"Time Zero"	R1	6.80E+06
		R2	2.60E+06
	15 Minutes	R1	7.50E+06
		R2	3.95E+06
	4 Hours	R1	5.85E+06
		R2	3.35E+06
	24 Hours	R1	3.44E+05
		R2	2.39E+05

Average (Double Replicate JIS Z 2801) Test Results for MS2 Phage ATCC 15597-B1

Sample	Time Point (After Inoculum Dried)	Average PFU/Coupon	Reduction vs Control (Time after Inoculum Dried)
Control Surface (Light)	"Time Zero" (Dried Inoc.)	9.60E+06	N/A
	15 Minutes	9.88E+06	N/A
	4 Hours	8.33E+06	N/A
	24 Hours	2.78E+06	N/A
OxiTitan VLR on Ceramic Coupon	"Time Zero" (Dried Inoc.)	4.70E+06	N/A
	15 Minutes	5.73E+06	42.0%
	4 Hours	4.60E+06	44.7%
	24 Hours	2.92E+05	89.5%

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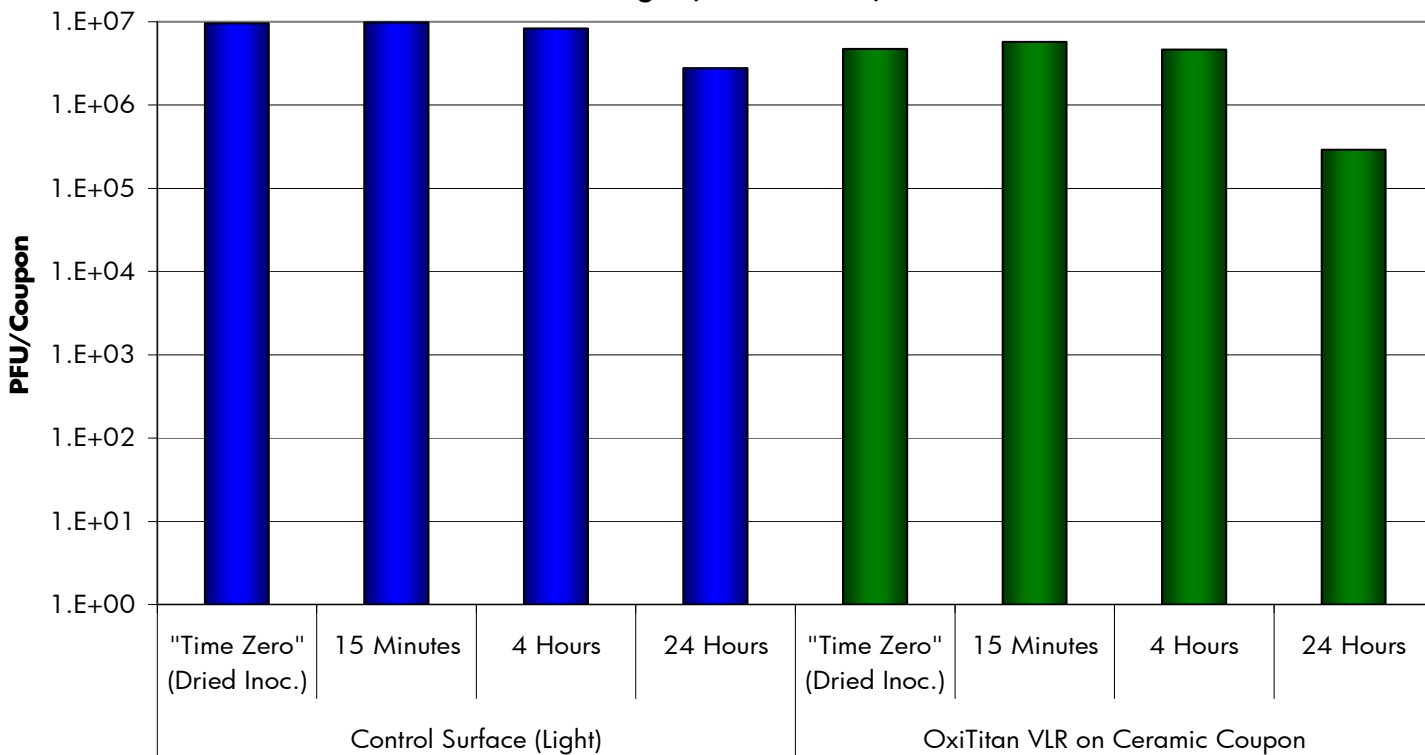
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Additional Test Information

**Average Values (Double Replicate JIS Z 2801) for VRE ATCC 51299
Office Light (230-240 Lux)**



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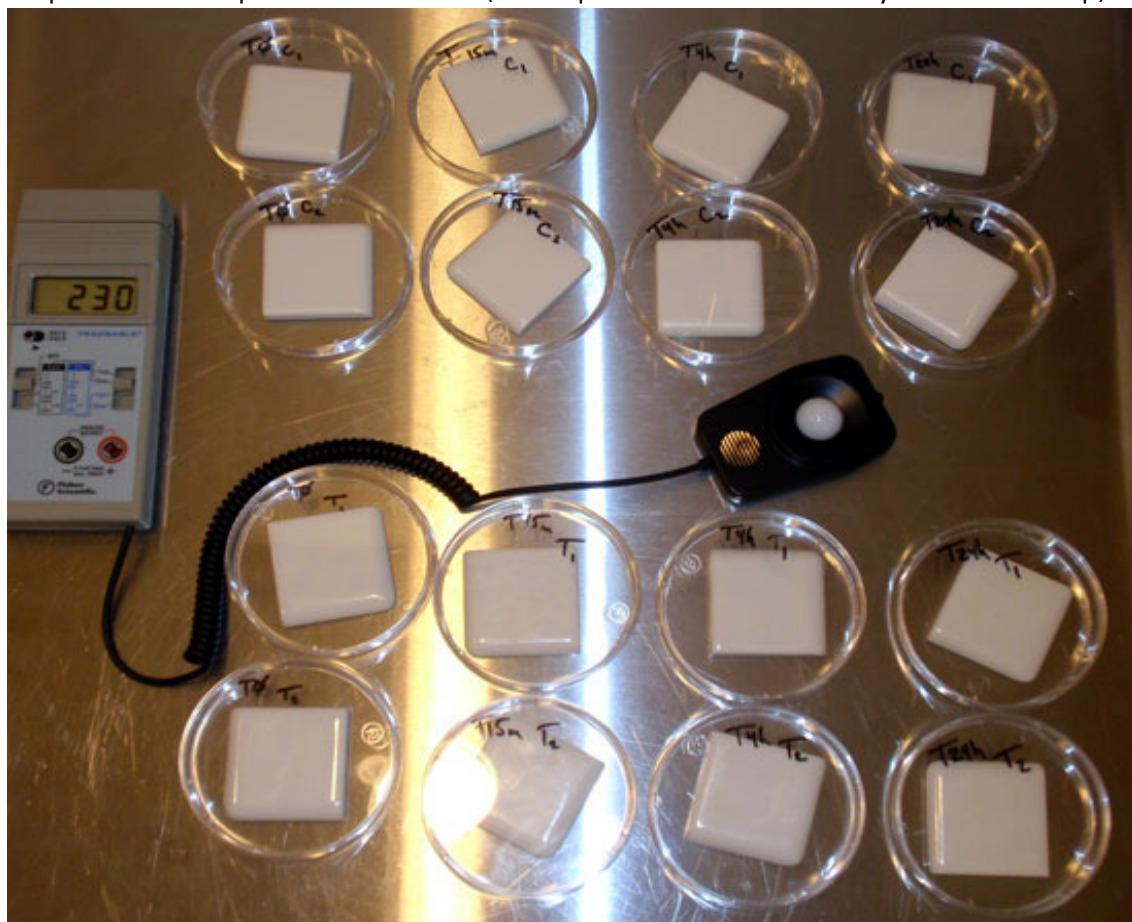
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Additional Test Information

Light Source (~6 ft Above Study):



Experimental Setup with Luminometer (Note - photo from different study with same setup)



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Additional Test Information

Note: These photos were taken of the laboratory benchtop, on which samples were placed for the 24 hour incubation period under normal "office" lighting conditions. There were two fluorescent 25 watt overhead lights, approximately 6 feet above the samples, spaced approximately 6 feet apart from one another. "Time zero" for this particular study began when the inoculum dried.



Study Setup



Spot-Inoculation with Virus