**Microbiology Study Report**

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### Client Information

**Company Name:** Advanced Vapor Technologies  
**Sponsor:** Rick Hoverson  
**Sponsor’s Phone:** (800) 997-6584  
**E-mail:** rick@advap.com

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### Test Information

**Test(s) Performed:** AVT LT Study #1 (Ultra-Low Contact Time Kill-Curve Generation for "Standard" Microorganisms)  
**Study ID #:** PT505  
**SOP Followed:** ATL SOP C-005  
**Performed by:** B. Tanner

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### Sample Information

**Test Substance ID(s):** SVS w/TANCS Technology  
**Unit ID Number:** 55120401165

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### Parameters

**Microorganism(s):** See Charts, Below  
**Type of Carrier:** Unglazed Clay Coupon  
**Subculture Number:** 1 Where Applicable  
**# of Test Carriers:** (12) Tests, 5 Carriers Each  
**Growth Medium:** Difco Nutrient Broth  
**Carrier Dry Time:** 20 minutes  
**Contact Time:** 0, 0.5, 1, 2, and 5 seconds  
**CFU per Carrier:** See Table, Page 2  
**Organic Soil Load:** n/a  
**Incubation Temp.:** 35.0 (+/- 1) C  
**Neutralizer Used:** 10 mL D/E Broth (for Elution Only)  
**Incubation Time:** 24-48 hours

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### Controls

**Neutralized:** N/A  
**Growth Control:** Passed, all organisms +  
**Media Sterility:** Passed, All Control Jars Neg

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### Test Results

**# of Carriers Positive:** See chart, Page 2  
**Confirmation:** Colony morphology  
**# of Carriers Negative:** See chart, Page 2  
**Test(s) Valid?:** Yes

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### Notes:

For this test, six microorganisms were tested in duplicate, with each test plated in duplicate. The tests for MS2 were repeated since the original tests were below target for initial PFU/carrier.

Lab contact information amended 3/31/08.

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### Tests Completed:

7/5, 7/11, and 7/17/07  
**Report Sent:** (Updated 10/15/07 for MRSA/VRE)
Summary Microbe/Carrier Table for TANCS Ultra-Low Contact Time Expt Finished 7-17-07

<table>
<thead>
<tr>
<th>Organism</th>
<th>0 seconds</th>
<th>0.5 seconds</th>
<th>1 second</th>
<th>2 seconds</th>
<th>5 seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS2 #1</td>
<td>5650000</td>
<td>334000</td>
<td>39000</td>
<td>2010</td>
<td>0</td>
</tr>
<tr>
<td>MS2 #2</td>
<td>4000000</td>
<td>142000</td>
<td>4040</td>
<td>2490</td>
<td>0</td>
</tr>
<tr>
<td>P. aeruginosa #1</td>
<td>820000</td>
<td>750</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>P. aeruginosa #2</td>
<td>1240000</td>
<td>3660</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>S. aureus #1</td>
<td>1500000</td>
<td>27840</td>
<td>11560</td>
<td>13080</td>
<td>0</td>
</tr>
<tr>
<td>S. aureus #2</td>
<td>1225000</td>
<td>28880</td>
<td>12920</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>S. enterica #1</td>
<td>50000</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>S. enterica #2</td>
<td>190000</td>
<td>1100</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C. alibicans #1</td>
<td>2000000</td>
<td>1060</td>
<td>410</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C. alibicans #2</td>
<td>490000</td>
<td>3500</td>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A. niger #1</td>
<td>950000</td>
<td>90000</td>
<td>27000</td>
<td>4000</td>
<td>0</td>
</tr>
<tr>
<td>A. niger #2</td>
<td>1800000</td>
<td>90000</td>
<td>9000</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

Time-Kill Chart for TANCS Unit - Individual Replicates
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**Additional Study Information**

**Time-Kill Chart - VaporJet PC 2400 with TANCS Option**

*Average of 2 Replicates - Dried Film of Microbes on Porous Clay Test Surface*

![Graph showing the Time-Kill Chart with various microbial counts and treatment times.](chart)

- **Methicillin-Resistant Staphylococcus aureus (MRSA)**
- **Vancomycin-Resistant Enterococcus Faecalis (VRE)**
- **Pseudomonas aeruginosa**
- **Methicillin-sensitive Staphylococcus aureus**
- **Salmonella enterica**
- **Candida albicans (Pathogenic Yeast)**
- **Aspergillus niger (Pathogenic Mold)**
- **MS2 Virus - Surrogate for Non-Enveloped Viruses Such as Hepatitis A Virus and Norovirus**

**Treatment Time**

1. **10,000,000**
2. **1,000,000**
3. **100,000**
4. **10,000**
5. **1000**
6. **100**
7. **10**
8. **1**

**Note:** This chart also references an Antimicrobial Test Laboratories MRSA/VRE study, completed 8/2/07