

### TEST REPORT

account with  Volatile Free, Inc. 19500 Janacek Court Brookfield, WI 53045	Date	10/28/05	Page	1	of	3	Pages
	W. O. No.	T 39353	P. O. No.	Credit Card			
	Identification	As noted	Shipper	None			

**IDENTIFICATION** : Five (5) 6 inches by 1 inch laminate strips, which were coated with coating on one (1) side of each laminate, were submitted for testing. Delsen arbitrarily numbered 1, 2, 3, 4 and 5.

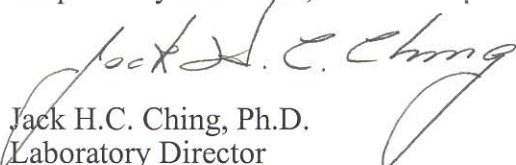
**SPECIFICATION** : None

**REFERENCES** : 1. E-mail from John Moylan of Delsen to Darel of Volatile Free, dated October 11, 2005.  
 2. ASTM D 4496-87 (Reapproved 1998), "D-C Resistance or Conductance of Moderately Conductive Materials"

**TESTING PERFORMED** : Surface resistivity in accordance with ASTM D 4496-87 (Reapproved 1998)

**REMARKS** : There were no acceptance/rejection criteria applicable to the test results.  
 Test results are herein submitted for client's evaluation.

Respectfully submitted,



Jack H.C. Ching, Ph.D.  
 Laboratory Director  
 DELSEN TESTING LABORATORIES, INC.

dsp L3D34 T39353VolatileFree W

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**SURFACE RESISTIVITY**

TEST METHOD : ASTM D 4496-87 (Reapproved 1998)

TEST PROCEDURE : The specimens were cleaned with isopropyl alcohol and distilled water and dried at room ambient conditions. A four-point measurement technique was used to determine the resistance of the coating. Four (4) conductive silver paint lines were applied on the coating across the width of each specimen with conductive silver paint. While DC current was applied to the specimen through the two outer electrodes, the potential drop between the two inner electrodes was measured.

Resistance was calculated as follows:

$$R = \frac{V}{I}$$

where  $R$  = Resistance (ohms)  
 $V$  = Potential drop (volts)  
 $I$  = Applied current (amperes)

Surface resistivity was calculated as follows:

$$\rho_s = \frac{W}{L} \times R$$

where  $\rho_s$  = Surface resistivity (ohms/square)  
 $R$  = Resistance (ohms)  
 $L$  = Distance between potential electrodes (inches)  
 $W$  = Specimen width (inches)

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**SURFACE RESISTIVITY**

TEST METHOD : ASTM D 4496-87 (Reapproved 1998)  
 ELECTRODE TYPE : Conductive silver paint  
 TEST CONDITIONS : Tested at 73°F and 46% R.H.

<u>CURRENT DIRECTION</u>	<u>SPECIMEN WIDTH</u> inches	<u>DISTANCE BETWEEN POTENTIAL ELECTRODE</u> inches	<u>RESISTANCE</u> ohms	<u>SURFACE RESISTIVITY</u> ohms/square
Specimen No. 1				
Forward	1.036	2.96	48,300	16,900
Reverse	1.036	2.96	48,100	16,800
Specimen No. 2				
Forward	1.030	2.97	47,800	16,600
Reverse	1.030	2.97	47,700	16,500
Specimen No. 3				
Forward	0.993	3.00	48,300	16,000
Reverse	0.993	3.00	48,300	16,000
Specimen No. 4				
Forward	1.013	3.01	50,600	17,000
Reverse	1.013	3.01	50,300	16,900
Specimen No. 5				
Forward	1.030	3.02	45,600	15,600
Reverse	1.030	3.02	45,400	15,500
			Median:	16,600

NOTES : 1. Surface resistivity determined by the above method is valid if the material tested was an isotropic material through which current would be uniformly distributed during testing. And since the material tested was coated on the laminate substrate, there might be some current leakage through the substrate. Therefore, the test results reported herein should be viewed with caution.

2. The power dissipation in each specimen between potential electrodes was 0.10 watt.

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