



TEST REPORT

In Account With LIQUIGUARD TECHNOLOGIES, INC. 2755 E. Oakland Park Blvd, Suite 300 Fort Lauderdale, FL 33306 Attn: Abbas A. Sadriwalla	Date September 30, 2009	Page 1 of 9 Pages
	W.O. Number 39329	Specification Not Specified
	P.O.No. Verbal	Received 07-29-09

IDENTIFICATION : The test sample was submitted for testing. The test sample was identified as follows:

IDENTIFICATION

Liquiguard-CC

SPECIFICATION : Not Specified.

REFERENCE : E-mail from Liquiguard Technologies, dated 07-23-09.

TESTING : Dielectric Strength; Dielectric Constant and Dissipation Factor; Volume Resistivity; Dielectric Withstanding Voltage; Q-Resonance; Insulation Resistance; Flame Resistance.

SUMMARY : The test results, reported herein, are submitted for customer evaluation.

Respectfully submitted,
PACIFIC TESTING LABORATORIES, INC.

Michael Shin
Laboratory Director

This report applies only to the sample(s) tested and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and Pacific Testing Laboratories, Inc., this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Pacific Testing Laboratories, Inc.

DIELECTRIC STRENGTH

REQUIREMENT : Not Specified.

REFERENCE : ASTM D 149.

TEST METHOD: : The specimen was tested for Dielectric Strength in accordance with ASTM D 149.

CONDITIONING : Tested "as received" at room temperature.

RESULTS : Dielectric Strength test results are as follows:

<u>Specimen</u>	<u>Thickness</u> Inch	<u>Breakdown</u> <u>Voltage</u> KVAC, RMS	<u>Dielectric</u> <u>Strength</u> Volts/Mil
1	0.0012	2.7	2,300
2	0.0011	2.9	2,600
3	0.0012	2.8	2,300
4	0.0012	2.5	2,100
5	0.0012	2.6	2,200
		Average	:2,300

REMARKS : The test results are reported for customer evaluation.

DIELECTRIC CONSTANT
AND DISSIPATION FACTOR

REQUIREMENT : Not Specified.

TEST METHOD : The specimen was tested for Dielectric Constant and Dissipation Factor in accordance with ASTM D-150.

CONDITIONING : Tested at a frequency of 1 MHz (at room temperature).

RESULTS : Dielectric Constant and Dissipation Factor test results are as follows:

<u>THICKNESS</u> Inch	<u>TEST TEMP.</u>	<u>FREQUENCY</u> Hertz	<u>DISSIPATION FACTOR</u>	<u>DIELECTRIC CONSTANT</u>
0.0033	R.T.	1 MHz	0.049	3.29

REMARKS : The test results are reported for customer evaluation.

VOLUME RESISTIVITY

REQUIREMENT : Not Specified.

REFERENCE : ASTM D 257.

TEST METHOD: : The specimen was tested for Volume Resistivity in accordance with ASTM D 257.

CONDITIONING : Tested "as received".

RESULTS : Volume Resistivity test results are as follows:

<u>Thickness</u> Inch	<u>Volume Resistivity</u> Ohm-Cm
0.0039	1.8×10^{11}

REMARKS : The test results are reported for customer evaluation.

DIELECTRIC WITHSTANDING VOLTAGE

REFERENCE : MIL-I-46058C, paragraphs 3.10 and 4.8.7.

REQUIREMENT : Paragraph 3.10.

TEST METHOD : The coated materials were tested in accordance with Method 301 of MIL-STD-202. All electrical measurements on the coated panels were made using a test voltage of 1,500 volts, alternating current, root mean square, at 60 hertz (Hz). The leakage current was measured and recorded.

RESULTS :

<u>SPECIMEN</u>	<u>VOLTAGE APPLIED</u> VAC	<u>TIME OF APPLICATION</u> SECONDS	<u>LEAKAGE CURRENT</u> MICRO-AMPS	<u>RESULTS</u>
1	1,500	60	0.98	PASS
2	1,500	60	1.00	PASS
3	1,500	60	0.98	PASS
4	1,500	60	0.96	PASS

Requirement: 10.0 max.

REMARKS : The specimens meet the requirements of paragraph 3.10.

Q (RESONANCE)

REFERENCE : MIL-I-46058C, paragraphs 3.11 and 4.8.8.

REQUIREMENT : Paragraph 3.11.

TEST METHOD : Measurements made to determine percentage change in Q were performed using a Q Meter, Type 260A. The Q of the test panels were measured at 1 and 50 MHz before coating, and the values averaged.

The coating material was then applied to the test panels as specified in 4.7.1.1. The Q of the coated test panels was measured and the values averaged at 1 and 50 MHz and again after immersion in distilled water for a period of 24, +2, -0 hours at a temperature of 23 degrees C, \pm 2 degrees C. All tests were completed within a period of 5 hours after removing the specimens as specified in paragraph 4.4.

RESULTS : Q (Resonance) Before Coating, At 1 Megahertz

<u>SPECIMEN</u>	<u>C1</u>	<u>C2</u>	<u>K</u>	<u>Q1</u>	<u>Q2</u>	<u>Q Calculated</u>	<u>%Change</u>
1	450.86	448.68	1.0	185	183	81.8	N/A
2	450.86	448.67	1.0	185	183	82.2	N/A
3	450.86	448.68	1.0	185	183	81.8	N/A
4	450.86	448.67	1.0	185	183	82.2	N/A
Average						: 76.0	

Q (Resonance) After Coating, At 1 Megahertz

<u>SPECIMEN</u>	<u>C1</u>	<u>C2</u>	<u>K</u>	<u>Q1</u>	<u>Q2</u>	<u>Q Calculated</u>	<u>%Change</u>
1	450.85	448.62	1.0	185	183	83.7	2.3
2	450.85	448.59	1.0	185	183	84.9	3.2
3	450.85	448.61	1.0	185	183	84.1	2.8
4	450.85	448.60	1.0	185	183	84.5	2.7
Average						: 2.7	
Requirement						: 9.0 max	

RESULTS, (Continued)

Q (Resonance) After Conditioning in Distilled Water
(D-24/23), At 1 Megahertz

<u>SPECIMEN</u>	<u>C1</u>	<u>C2</u>	<u>K</u>	<u>Q1</u>	<u>Q2</u>	<u>Q Calculated</u>	<u>%Change</u>
1	450.85	448.52	1.0	185	183	87.5	4.5
2	450.85	448.51	1.0	185	183	87.9	3.5
3	450.85	448.52	1.0	185	183	87.5	4.0
4	450.85	448.53	1.0	185	183	87.1	3.1
						Average	: 3.8
						Requirement	: 11.0 max

REMARKS : The specimens meet the requirements of paragraph 3.11.

INSULATION RESISTANCE

REFERENCE : MIL-I-46058C, paragraphs 3.9 and 4.8.6.

REQUIREMENT : Paragraph 3.9.

Average Insulation Resistance Requirement:

$$2.5 \times 10^{12} \text{ ohms, minimum}$$

Individual Insulation Resistance Requirement:

$$1.5 \times 10^{12} \text{ ohms, minimum}$$

TEST METHOD : The coating materials were measured in accordance with Method 302 of MIL-STD-202, test condition B. The insulation resistance was measured using 500 volts DC, after an electrification time of 1 minute.

RESULTS : Insulation resistance, (before conditioning), is as follows:

<u>SPECIMEN</u>	<u>INSULATION RESISTANCE</u> OHMS
1	2.8×10^{12}
2	2.6×10^{12}
3	2.5×10^{12}
4	2.6×10^{12}
Average : 2.6×10^{13}	

REMARKS : The specimens meet the requirements of paragraph 3.9.

FLAME RESISTANCE

REFERENCE : MIL-I-46058C, paragraphs 3.16 and 4.8.13.

REQUIREMENT : Paragraph 3.16.

TEST METHOD : Flame resistance was tested in accordance with Method 2021 of FED-STD-406.

RESULTS : All four (4) specimens were determined "Self-extinguishing".

<u>SPECIMEN</u>	<u>TIME OF 1ST APPLICATION (SECONDS)</u>	<u>TIME OF 2ND APPLICATION (SECONDS)</u>	<u>RESULTS</u>
1	30	30	Self Extinguishing
2	30	30	Self-Extinguishing
3	30	30	Self-Extinguishing
4	30	30	Self-Extinguishing

REMARKS : The specimens meet the requirements of paragraph 3.16.