



LONESTAR ELECTROSTATIC SOLUTIONS

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SUMMARY

Testing of material samples were performed to ANSI/ESD STM11.11 and 11.12 to determine Surface and Volume resistance of the material. A qty of 6 samples were conditioned to the requirements of the test methods. Each was then tested per the referenced test methods with data recorded and shown below. Results showed a range on Surface Resistance of $10^7 - 10^{10}$ Ohms. Range for Volume Resistance is $10^7 - 10^{10}$ Ohms.

MATERIAL:

Kleanstat Flex TPU
Sample Thickness: 0.125"

TEST CONDITIONS:

Qty 6 specimens @ 12.4% RH, 23°C, 60 hours conditioning.
Qty 6 specimens @ 50.3% RH, 23°C, 54 hours conditioning.
Test Voltage (@ Upper Resistance): 100 Volts
Electrification Period (@ Upper Resistance): 8-10 seconds

TEST DATA

TEST METHOD/S:

- ANSI/ESD STM11.11-2022
- ANSI/ESD STM11.12-2021

STANDARDS:

- PROSTAT PRS-80 I
RESISTANCE METER (CAL
DATE 1-2023)
- PROSTAT PRF-91 I
CONCENTRIC RING (CAL
DATE 2-2023)
- ALL STANDARDS ON 1
YEAR CAL CYCLE.

TABLE 1: SURFACE RESISTANCE DATA

Test Method	Surface Resistance (Ohms) @ 12.4% RH, 23°C, 60 hours conditioning								
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Min	Max	Mean
ANSI/ESD STM 11.11	6.31 x 10^{10}	8.78 x 10^9	6.77 x 10^9	2.94 x 10^{10}	5.03 x 10^{10}	7.39 x 10^9	6.74 x 10^9	6.31 x 10^{10}	2.76 x 10^{10}

Test Method	Surface Resistance (Ohms) @ 50.3% RH, 23°C, 54 hours conditioning								
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Min	Max	Mean
ANSI/ESD STM 11.11	4.56 x 10^8	7.59 x 10^8	9.47 x 10^7	3.12 x 10^8	3.98 x 10^8	5.22 x 10^8	9.47 x 10^7	7.59 x 10^8	4.24 x 10^8

TABLE 2: VOLUME RESISTANCE DATA

Test Method	Volume Resistance (Ohms) @ 12.4% RH, 23°C, 60 hours conditioning								
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Min	Max	Mean
ANSI/ESD STM 11.12	5.64 x 10 ⁹	9.05 x 10 ⁹	2.01 x 10 ¹⁰	4.44 x 10 ¹⁰	1.90 x 10 ¹⁰	7.42 x 10 ⁹	5.64 x 10 ⁹	4.44 x 10 ¹⁰	1.76 x 10 ¹⁰

Test Method	Volume Resistance (Ohms) @ 50.3% RH, 23°C, 54 hours conditioning								
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Min	Max	Mean
ANSI/ESD STM 11.12	4.83 x 10 ⁷	3.39 x 10 ⁸	1.15 x 10 ⁸	3.91 x 10 ⁸	7.02 x 10 ⁸	4.91 x 10 ⁸	4.83 x 10 ⁷	7.02 x 10 ⁸	3.48 x 10 ⁸