



Static Shielding Ziplock Bag_ANT013SSB

Features:

- Metal "Faraday cage" layer shields products from electric energy inside and prevents static build-up
- Four layer protection guards against charges inside and out
- Semi transparent for easy content identification
- Surface resistance of 10^8 - $10^{11}\Omega$
- Conforms to EIA 625, EIA 541, ANSI/ESD S-20.20
- Custom sizes and print available on request
- Suitable for packing electronic products which are sensitive to static, eg PCB's, Integrated circuits , CD drives etc

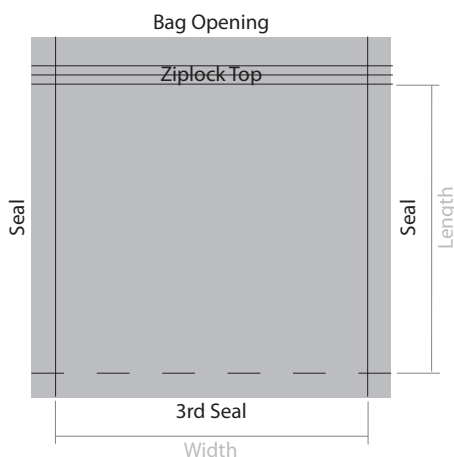


Outer Surface Dissipative Layer
Aluminized Polyester
Polyethylene
Inner Surface Dissipative Layer

Construction:

Our static shielding bags are constructed in four layers, consisting of a static dissipative polyester outer layer and a static dissipative polyethylene inner layer with a centre metallised shield layer.

Our bags are manufactured from industry approved polyester and polyethelene laminates. The polyester dielectric works with the metal layer to provide a Faraday effect, the metal layer preventing penetration from damaging electrostatic fields. The specially processed polyethelene keeps tribocharging to a minimum.



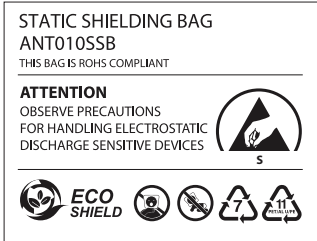
Configuration(s):

Our bags are available in custom sizes or in several industry standard sizes. Bags are offered in a 2-seal configuration and bottom fold, with our standard flexographically printed artwork. Please note any bags that are longer than 24" will have a 3rd seal along the bottom edge. Our bags can also be personalised with your company logo on any bespoke orders.

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Standard Bag Artwork:

Our static shielding bags are produced with the following sample artwork as standard. For further information on bespoke/printed orders, please contact one of our sales team. Please note there is a MOQ of 20,000 bags on all printed bags.

Test Conditions:

The following results were taken under the following environmental test conditions:
Temperature: 23°C / Humidity: 12% RH

Technical Parameters:

Item:	Test Standard:	Result:
Film Thickness	Micron Meter	3mil 75 micron
Metal Layer Optical Transmission	ASTM D1003 (TOBIAS)	40% +/- 5% optical density
Surface Resistivity	STM 11.11	<10 ¹⁰ Ω/sq
Time for static removal	FTMS 101B Method 4046 - 5000-0V	<.003 Sec
Static Shielding - Energy Penetration	ESD-STM-11.31 @12% R.H.	<20 nJ
Static Shielding - Capacitive Probe	EIA 541 Appendix E	<25V
Friction Static	E1A541 Appendix C Avg.	TriboelectricNanocolombs Quartz +0.01 Teflon -0.09
Anti-erosion	FTMS 101C Method 3005	No visible spots
Tensile Strength	ASTM D882-91, Method A	MD 6530 psi TD 5800 psi
Tear Initiation	ASTM D1004 -94-Notched	MD 2.5 lbs./in TD 2.0 lbs
Puncture Resistance	ASTM D3420	>10 psi
Tear Resistance	ASTM D882	>8 psi
Burst Strength	FTMS 101 C Method 2065.1	50 psi Nominal
Heat Seal Temperature	-	250 - 375 °F
Heat Seal Pressure	-	30-70 psi
Heat Seal Strength	(D1876-93) Vertrod bar sealer/heat	>12 lbs/in width (room temperature)
Breaking Elongation Rate	ASTM D882-91 Method A	MD 80% TD 85%
Appearance	GB/96-04-10	No delamination, burst seal, wrinkle, warp, break, foreign particle adherence, air bubble beyond sealing $\phi \leq 3\text{mm}$

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Test Conclusion: (Date of Issue: 2009-11-10)

The shielding bag is tested accordance with the relevant test standard and requirements.

Test Item:	Test Method:	Measured Equipment(s):	MDL:
Lead (Pb)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES	2mg/kg
Mercury (Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2mg/kg
Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis	2mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5mg/kg

Product Code:	Size (Imperial):	Size (Metric):	Additional Notes:
013-0001	3 x 5	76mm x 127mm	Pack of 100
013-0003	4 x 6	102mm x 152mm	Pack of 100
013-0004	5 x 8	127mm x 203mm	Pack of 100
013-0020	6 x 8	152mm x 203mm	Pack of 100
013-0005	6 x 10	152mm x 254mm	Pack of 100
013-0006	8 x 10	203mm x 254mm	Pack of 100
013-0007	8 x 12	203mm x 305mm	Pack of 100
013-0008	10 x 12	254mm x 305mm	Pack of 100
013-0009	10 x 14	254mm x 355mm	Pack of 100
013-0010	12 x 16	305mm x 406mm	Pack of 100
013-0025	14 x 18	355mm x 455mm	Pack of 100
013-0042	18 x 24	455mm x 600mm	Pack of 100

Note: Other sizes available upon request.

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MICROSTAT LABORATORIES
RIVER'S EDGE TECHNICAL SERVICE

Specialists in Materials Testing and Technical Services

TEST REPORT

AntiStat Inc
Static Shielding Bags

Stock Code: 010-0024

Metal Shield

8" X 10"

203x254mm

Bin A9/F51/F71

Stamp on Sealed Edge of Bags: 011215

TESTED FOR

Surface Resistance per ESD STM 11.11
Static Discharge Shielding per ESD STM 11.31

Report #: 2016-041
April 25th, 2016



SUMMARY

One-hundred static shielding bags were submitted for testing to industry specifications ANSI/ESD STM11.11 (surface resistance measurements of the inside and outside of the bags) and ANSI/ESD STM11.31 (static discharge shielding). The tested bags meet or exceed the requirements of ANSI/ESD STM541 and ANSI/ESD S20.20.

EXPERIMENTAL AND DISCUSSION

The bags were randomly selected and conditioned for 48 hours at the specified conditions (12% & 50% R.H., & 23°C) before testing was started. Testing was carried out in the conditioning environment.

Surface resistance is reported as “resistance,” as specified in ANSI/ESD STM11.11. To obtain resistivity values, multiply the resistance numbers by 10. The data from this testing is included below in Table 1.

The static discharge shielding test was performed using the test methods called out in ANSI/ESD STM11.31. The data from this testing is summarized below in Table 2, detailed data is included as appendix A.

Table 1
Surface Resistance Data
Stock Code: 010-0024 - Metal Shielding Bag

Surface Resistance per ANSI/ESD STM11.11		
Sample #	Inside	Outside
1	6.95 x 10 ⁹ Ω	1.17 x 10 ¹⁰ Ω
2	3.79 x 10 ⁹ Ω	8.66 x 10 ⁹ Ω
3	3.29 x 10 ⁹ Ω	7.84 x 10 ⁹ Ω
4	3.03 x 10 ⁹ Ω	8.68 x 10 ⁹ Ω
5	3.00 x 10 ⁹ Ω	8.02 x 10 ⁹ Ω
6	3.50 x 10 ⁹ Ω	7.79 x 10 ⁹ Ω
Average	3.75 x 10 ⁹ Ω	8.69 x 10 ⁹ Ω
Median	3.40 x 10 ⁹ Ω	8.34 x 10 ⁹ Ω
Minimum	3.00 x 10 ⁹ Ω	7.79 x 10 ⁹ Ω
Maximum	6.95 x 10 ⁹ Ω	1.17 x 10 ¹⁰ Ω



Table 2
Static Discharge Shielding Data Summary
Stock Code: 010-0024 - Metal Shielding Bag

Static Discharge Shielding Per ANSI/ESD STM11.31				
	12% Data		50% Data	
	Calculated Data		Calculated Data	
	Energy (nJ)	Peak I (mA)	Energy (nJ)	Peak I (mA)
Average	14.46	68.67	14.38	69.85
St. Dev.	3.47	16.69	3.71	14.61
Min	8.21	42.41	7.53	44.81
Max	19.44	99.54	23.14	101.63

EQUIPMENT USED FOR ELECTRICAL TESTING

Surface Resistance Measurements:

Keithley Model 6517a Electrometer/High Resistance Meter
ETS Model 803B Resistance Probe
ETS Model 809 Surface Resistance Verification Fixture

Static Discharge Shielding Measurements:

ETS Model 811/412 Electrostatic Discharge Unit/Shielding Bag Tester
Tektronix TDS 520A Digital Oscilloscope.

The results provided in this report are accurate within the limits appropriate to each test standard. The results of this report are statistically significant only to the samples submitted for testing. MicroStat Laboratories/River's Edge Technical Service, Inc. has no controls, and assumes no responsibility for the tested product's functionality or use.

Carl E Newberg

April 25th, 2016

Date

Static Shielding Per ESD STM 11.31					
		12% Data		50% Data	
		Calculated Data		Calculated Data	
Sample #	Test #	Energy (nJ)	Peak I(mA)	Energy (nJ)	Peak I(mA)
1	1	10.29	42.41	15.04	64.82
1	2	15.81	61.62	13.73	64.82
1	3	17.89	93.63	23.14	84.83
1	4	18.65	99.23	14.29	56.82
1	5	12.25	57.62	11.40	68.02
1	6	19.04	77.62	9.22	54.42
2	1	13.86	64.02	16.90	57.62
2	2	8.70	50.42	17.05	55.22
2	3	16.33	81.63	17.50	101.63
2	4	16.23	72.02	9.94	56.02
2	5	11.44	67.22	17.36	84.83
2	6	16.78	81.63	15.45	76.02
3	1	14.83	68.82	10.76	64.02
3	2	9.52	60.02	7.53	44.81
3	3	18.81	99.54	9.28	54.42
3	4	8.54	50.42	15.07	64.82
3	5	15.72	99.23	18.54	82.43
3	6	14.82	71.22	16.10	66.42
4	1	15.55	48.02	15.28	82.43
4	2	16.10	78.43	17.68	98.43
4	3	19.44	74.42	14.92	83.23
4	4	8.21	54.42	7.56	48.82
4	5	9.40	59.22	9.82	56.02
4	6	12.07	59.22	14.59	80.83
5	1	16.46	88.03	16.74	80.83
5	2	14.89	46.41	15.09	76.82
5	3	14.83	54.42	18.43	98.43
5	4	15.03	69.62	18.24	72.82
5	5	13.71	59.22	15.03	76.32
5	6	8.29	56.82	8.22	48.02
6	1	18.33	48.82	16.31	85.63
6	2	18.73	76.02	17.79	66.42
6	3	11.55	49.62	15.27	68.02
6	4	18.59	80.03	17.13	67.22
6	5	12.62	99.23	10.98	57.62
6	6	17.43	69.62	10.21	64.82
		Calculated Data		Calculated Data	
		Energy (nJ)	Peak I(mA)	Energy (nJ)	Peak I(mA)
Average		14.46	68.61	14.38	69.85
St. Dev.		3.47	16.58	3.71	14.61
Min		8.21	42.41	7.53	44.81
Max		19.44	99.54	23.14	101.63