Statshield® Moisture Barrier Bags Application Instructions

Made in the United States of America

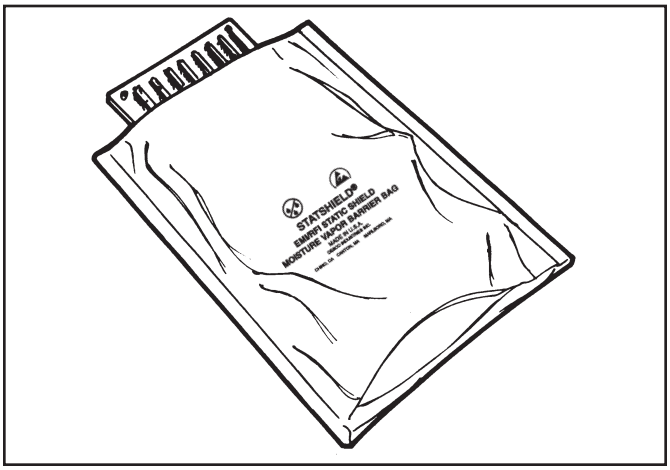

Figure 1. Desco Statshield® Moisture Barrier Bag

Description

Desco Statshield® Moisture Barrier Bags combine the properties of a MOISTURE BARRIER protection with EMI-RFI-ESD shielding. Statshield® Moisture Barrier Bags meet the electrical and physical requirements of ANSI/ESD S20.20, Packaging standard ANSI/ESD S541, and Static Control Bag ANSI/ESD S11.4. All Statshield® Moisture Barrier Bags are amide, amine, and silicone free and pass outgassing and corrosion tests. All bags are printed with ESD protective symbol and the Moisture-Sensitive Identification Label and are dated and lot coded for quality control traceability.

All three styles are available in a variety of standard sizes, custom sizes and with custom printing.

Desco offers three styles of Moisture Barrier Bags:

Moisture Barrier Bags
- Static Control Bag ANSI/ESD S11.4 Level 2
- Thickness .0035" (.0889mm)
- Moisture Barrier Transfer Rate (MVTR) ≤ 0.020 grams/100 in^2/day
- Puncture Resistance >20 lbs

High Moisture Barrier Bags
- Static Control Bag ANSI/ESD S11.4 Level 2
- Thickness .0065" (.1651mm)
- Moisture Barrier Transfer Rate (MVTR) ≤ 0.020 grams/100 in^2/day
- Puncture Resistance >30 lbs

Foil (EMI/RFI) Moisture Barrier Bag
- Static Control Bag ANSI/ESD S11.4 Level 1
- Thickness .0040" (.1061mm)
- Moisture Barrier Transfer Rate (MVTR) ≤ 0.020 grams/100 in^2/day
- Puncture Resistance >27 lbs

Notes:
Thickness - Typical value. Nominal ±10% per MIL-STD-3010 1003

Moisture Barrier Transfer Rate (MVTR) - Measured per ASTM F1249

Puncture Resistance – measured per MIL-STD-3010 2065

Construction

Desco's Statshield® Moisture Barrier Bags manufactured from a static dissipative metalized laminated film. The metal layer of the Desco's Statshield® Moisture Barrier Bags and Statshield® High Moisture Barrier Bags is created by vacuum deposited manufacturing technique. This manufacturing technique allows for a more flexible finished bag that is less likely to tear or rip during use. Finished bags with foil layer, such as Desco's Statshield® Foil Moisture Barrier Bags provides a better moisture barrier and is a good choice when having to meet IPC/JEDEC J-STD-033D Standard.

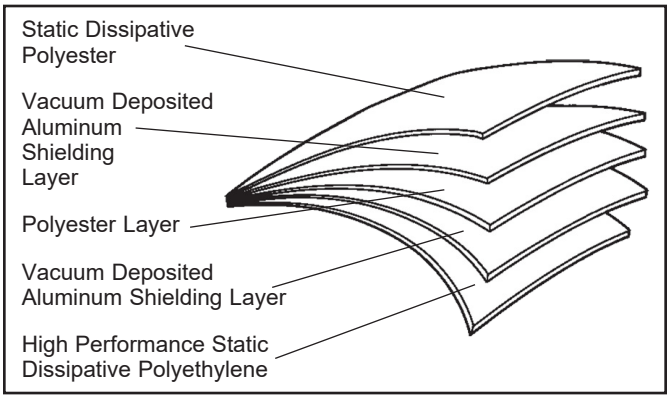

Figure 2. Statshield® MBB bag and High Moisture MBB Bag Layer construction.

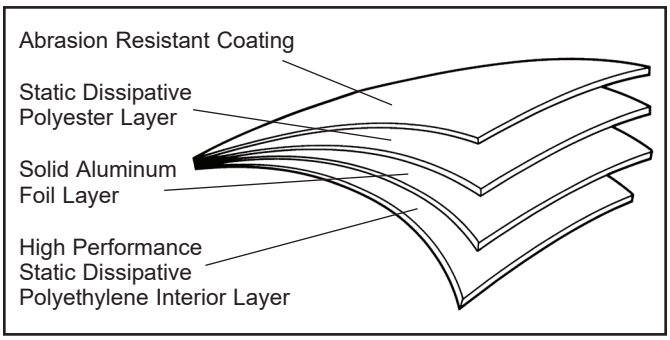

Figure 3. Statshield® Foil (EMI/RFI) MBB Bag Layer construction

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DESCO EAST - One Colgate Way, Canton, MA 02021-1407 • (781) 821-8370 • Web Site: Desco.com

Dry Packing Information

The Statshield® Moisture Barrier Bag, Desiccant Packs and Humidity Indicator Cards have been developed for use in “DRY PACKAGING” applications. In order for the MBB bag and its accessories to perform properly, Desco recommends the user follow procedures defined in IPC/JEDEC J-STD-033D.

DESICCANT

Desiccant is a drying agent used to lower the moisture content of air within a closed space, such as a sealed Moisture Barrier bag. Desiccant is packaged in fractional units in order to facilitate its usage with a variety of bag sizes. One full “unit” of packaged desiccant will absorb the following quantities of water at equilibrium with air at 77°F (25°C): 3.00 grams @ 20%RH and 6.00 grams @ 40%RH, when tested to MIL-D-3464.

Figure 4. Desiccant packs

In order to provide a complete moisture barrier packaging system, desiccant must be inserted into the bag, prior to having the bag vacuum sealed. The recommended amount of desiccant is dependent on the interior surface area of the bag to be used. Figure 5 is a reference table indicating recommended minimum amounts of desiccant that should be used with Moisture Barrier Bags.

INTERIOR BAG SURFACE AREA	NUMBER OF DESICCANT UNITS *MIH <20%	MIH <30%	MIH < 40%
100 sq. in.	1.5	1.0	1.0
130 sq. in.	2.0	1.5	1.0
160 sq. in.	2.0	1.5	1.5
200 sq. in.	2.5	2.0	1.5
240 sq. in.	3.0	2.0	1.5
290 sq. in.	4.0	2.5	2.0
340 sq. in.	4.5	3.0	2.5
390 sq. in.	5.0	3.5	2.5
450 sq. in.	5.5	4.0	3.0
510 sq. in.	6.5	4.5	3.5
580 sq. in.	7.5	5.0	4.0
650 sq. in.	8.0	5.5	4.0
720 sq. in.	9.0	6.0	4.5

Figure 5. Table for recommended desiccant usage. Information taken out of EIA-583, Table 1, Page 8

*MIH - Maximum Interior Humidity.

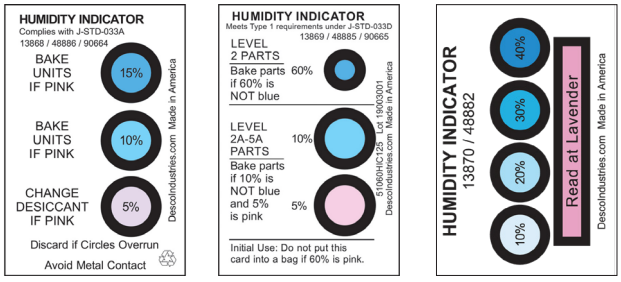
Desiccant packs are available from Desco in the following unit sizes and standard packages:

Item	Unit Size	Std. Package
13840	1/2 unit - 1.5" x 3"	Box of 700
13844	1 unit - 2" x 4"	Pail of 300
13850	1/2 unit - 1.5" x 3"	Pail of 550

Desiccant packs sold by Desco meet the requirements of MIL-D-3464. For more detailed information, see Drawing 13850.

HUMIDITY INDICATOR CARDS

Humidity Indicator Cards contain chemically impregnated, humidity sensitive, indicating spots that will change color with moisture. The comparison bar is used to determine relative humidity of air. Select the indicating spot that most closely matches the color of the comparison bar. The measured relative humidity is the percentage indicated on the matching spot. The chemical reaction of the indicating spots is completely reversible; the spots will continue to change color as the moisture levels change.



13868 13869 13870

Figure 5. Humidity Indicator Cards

Item	Card Size	Cards/Can	Relative Humidity
13868	2" x 3"	125	5/10/15
13869	2" x 3"	125	5/10/60
13870	2" x 3"	125	10/20/30/40

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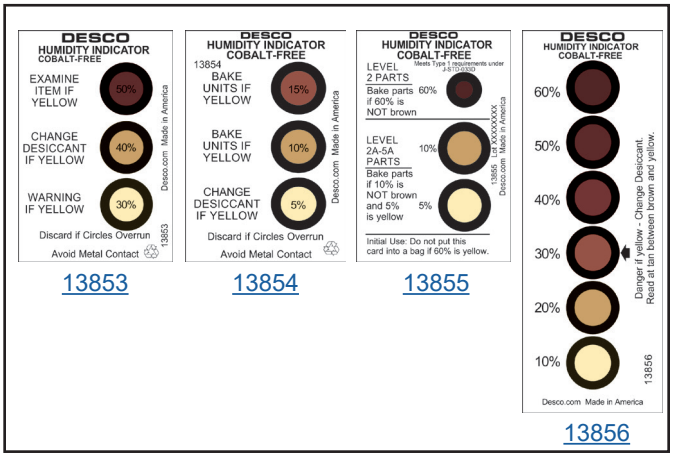
COBALT-FREE HUMIDITY INDICATOR CARDS

Cobalt-Free Humidity Indicator Cards (HIC) provide electronic and semiconductor manufacturers with a JEDEC complaint humidity indicator card that is free of Cobalt-Dichloride, a chemical regulated under European Chemical Bureau (ECB) REACH-directives.



13853 13854 13855 13856

Figure 6. Cobalt-Free Humidity Indicator Cards

Item	Cards/Can	Relative Humidity
13853	125	30/40/50
13854	125	5/10/15
13855	125	5/10/60
13856	200	10/20/30/40/50/60

Our Humidity Indicator Cards meet the requirements of MIL-I-8835 and IPC/JEDEC J-STD-033D (Type 1).

Specifications

Moisture Barrier Bag .0035" (.0889mm)

Electrical Properties

Surface Resistance of polyester layer
1 x 10^4 to < 1 x 10^{11} ohms per ANSI/ESD STM11.11

Surface Resistance of polyethylene layer
1 x 10^4 to < 1 x 10^{11} ohms per ANSI/ESD STM11.11

EMI Shielding (dB between 1 and 10 GHz)
45dB

Energy Penetration <10nJ per ANSI/ESD S11.31

Physical Properties

Thickness (nominal)
0.0035" (.0889mm) per MIL-STD-3010 1003

MVTR (grams / 100 in^2/24 hrs, 100°F) ≤0.02 per ASTM F 1249

Puncture Strength (lb)
≥20 per FTMS 101-C, MIL-STD-2065

For more detailed information, see Drawing 13806.

Foil Moisture Barrier Bag .0040" (.1016mm)

Electrical Properties

Surface Resistance of polyester outer layer
1 x 10^4 to < 1 x 10^{11} ohms per ANSI/ESD STM11.11

Surface Resistance of polyethylene inner layer
1 x 10^4 to < 1 x 10^{11} ohms per ANSI/ESD STM11.11

EMI Shielding (dB between 1 and 10 GHz)
45dB

Energy Penetration <10nJ per ANSI/ESD S11.31

Physical Properties

Thickness (nominal)
0.0040" (.1016mm) per MIL-STD-3010 2065

MVTR (≤ 0.014g/100 in^2/24 hours)
≤0.0003 per ASTM F 1249

Puncture Strength (lb)
≥25 per FTMS 101-C, MIL-STD-3010 2065

For more detailed information, see Drawing 13950.

High Moisture Barrier Bag .0065" (.1651mm)

Electrical Properties

Surface Resistance of polyester outer layer
1 x 10^4 to < 1 x 10^{11} ohms per ANSI/ESD STM11.11

Surface Resistance of polyethylene inner layer
1 x 10^4 to < 1 x 10^{11} ohms per ANSI/ESD STM11.11

EMI Shielding
45dB

Energy Penetration <10nJ per ANSI/ESD S11.31

Physical Properties

Thickness (nominal)
0.0065" (.1651mm) per MIL-STD-3010 1003

MVTR (≤ 0.014g /100 in^2/24 hours)
0.005 per ASTM F 1249

Puncture Strength (lb)
30 per FTMS 101-C, MIL-STD-3010 2065

For more detailed information, see Drawing 13760.
See Bag Selection Chart Click HERE.
See Shielding Bag Storage at TB-7057.

RoHS, REACH, and Conflict Minerals Statement
See the Desco Statshield® Shielding and Moisture Barrier Bags Regulatory Statement:
https://desco.descoindustries.com/pdf/REACHRoHSConflictMinerals-Desco_Bags.pdf

See the Desco Limited Warranty:
https://desco.descoindustries.com/Limited-Warranty.aspx

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