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DESCO INDUSTRIES INC. Technical Bulletin TB-3010



ESD Tape Applications



Wescorp ESD Tapes

In ESD protected areas, replace regular high charging tape with Wescorp ESD Tape. ANSI/ESD S20.20 section 8.3.1. states "All nonessential insulators, such as those made of plastics and paper (e.g., coffee cups, food wrappers and personal items) must be removed from the workstation."

Wescorp ESD Cellulose Tape Line



Technical Information for ESD Cellulose Tape

Film Thickness: 1.9 mil 0.0019". (0.048 mm)

Film construction: Cellulose

Adhesive: Rubber based - non-staining, absorbs moisture

Film surface resistance: $1 \times 10^9 < 1 \times 10^{11}$ ohms per ANSI/ESD STM11.11

Temperature Range: -10°C to 71°C (14°F to 160°F)
100°C for 10 minutes max

Color: Transparent

RoHS 2, REACH, and Conflict Minerals Statement

None of the RoHS 2 restricted materials or REACH substances of very high concern as of 2014/06/16, or Conflict Minerals are intentionally added in manufacturing Wescorp ESD Tapes. Ref: European Union Directive 2011/65/EU and Regulation (EC) No. 1907/2006/CE. See Desco [Limited Warranty at Desco.com](#)

Roll Length: 36 yards (1" core); 72 yards (3" core)

Total Thickness: 2.4 mil 0.0024". (0.06mm)

Elongation: 22.5%

Tensile Strength: 22 lbs/in

Adhesion Strength: 59 oz/in²

Static Generation from conductive plate:

(73°F, 45% RH): 80 volts average

Static Generation from roll:

(73°F, 45% RH): 50 volts average

Available on paper cores and plastic cores

No Sulfur, surfactants, amines, or silicone based material (adhesive, film backing, release material) is used in the manufacture of Wescorp cellulose tape.

Applications for ESD Clear Cellulose Tape with and without Symbols

- Sealing ESD bags and other ESD packaging\ containers
- Use with ESD symbols for ESD awareness
- General purpose ESD tape applications
- Secure (bundle) IC DIP tubes
- Prevents damage to sensitive electronic components in manufacturing
- Ideal for holding notes, work orders or instructions in offices, ESD workstations, or for general purpose
- Ideal for conformal coating or holding and sealing supplies in manufacturing
- Ideal in packaging for container sealing, static shielding bag closure and holding DIP tubes

Applications for ESD Clear Cellulose Tape with Symbols

- Identification or making product / paperwork / processes
- High visibility with ESD susceptibility symbol for increased awareness
- Attach paperwork to bags or to ESD susceptible product
- Ideal in packaging for container sealing, static shielding bag closure and holding IC DIP tubes

Note: Tape widths are metric (it applies to all 4 tape types).

Tape widths are nominal metric ± 0.8 mm ($\pm 1/32$ ")

- 1/4" is 6 mm nominal or 0.236"
- 1/2" is 12 mm nominal or 0.472"
- 3/4" is 18 mm nominal or 0.709"
- 1" is 24 mm nominal or 0.945"
- 2" is 48 mm nominal or 1.890"

Wescorp ESD Conductive Shielding Grid Tape



Technical Information for Conductive Shielding Grid Tape

Both surfaces non-tribocharging at 50% RH

Thickness: 1.9 mil 0.0019", (0.048mm)

Adhesive: acrylic based

Conductive grid layer (50% RH): $1 \times 10^4 < 1 \times 10^6$ ohms per ANSI/ESD STM11.11

Adhesive copolymer resistivity: 10^9 ohms typical

Copolymer layer resistivity: 10^{12} ohms typical

Max Temperature: 140°F (60°C)

Absence of shed, crack, chip, or rub off

Non-corrosive

No silicone based material (adhesive, film backing, releas material) is used in the manufacture of Wescorp conductive shielding grid tape.

Applications for Conductive Shielding Grid Tape

- For applications requiring EMI shielding
- Use in areas where the generation of static electricity is of concern
- Using grounded Tape Dispenser, voltage generated by unrolling will effectively be reduced to approaching zero
- Secure (bundle) IC tubes
- Cover external plugs, holes or connector pins on electronic chassis (black boxes, etc.) during transportation or storage

Excerpt from the Naval Aviation Schools Command: "... Weapon Replaceable Assemblies (WRA)s shall have ESD conductive plug caps or grid tape over all external cannon plugs and connector pins."

Wescorp ESD High-Temp Masking Tape



Technical Information for High-Temp Masking Tape

Backing: Saturated, high strength crepe paper

Adhesive: Natural rubber based, non-staining, solvent spread, cured

Thickness: 7 mils (0.007") (0.18 mm)

Adhesion Strength: 38 N/100 mm / 35 oz/in²

Tensile Strength: 385 N/100 mm / 22 lbs/in²

Temperature Resistance: 302°F (150°C) - 60 minutes

Color: Natural

Meets CDN Spec.: 53.79-94 Type 1

Meets US Spec.: A-A 883-B-Type 1

Roll Length: 55 meters (60 yards)

Thickness: 7.0 mils 0.007", (0.18 mm)

Adhesion to Steel: 1.51 newtons/cm² / 35 oz/inch²

Elongation: 8%

Moisture Resistance: fair

Solvent Resistance: good

Storage Stability: excellent

Temperature Range: -32°F to + 275°F (-36°C to + 135°C)

Max Temp: 275°F (135°C) 45 minutes maximum

Government Specs: PPP-T-42C

Type 1, CID-AA-883A Type 1

Waterproof

Tribocharges, but no charge retention (recommend slow unrolling utilizing an ionizer to neutralize charges);
recomend slow unwinding utilizing an ionizer to neutralize charges

Adhesive surface resistance: 10^{11} ohms typical per ANSI/ESD STM11.11

Non-toxic, and pH neutral

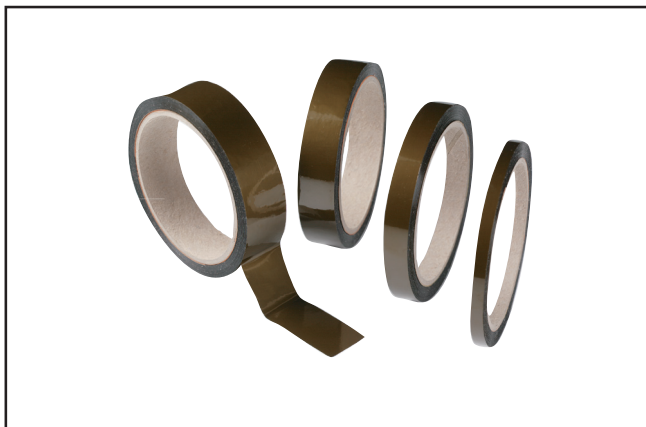
Non-corrosive

Normal use of our High Temperature Masking Tape is for masking or protective applications on printed circuit boards not exceeding temperatures of 150°C (302°F) at a duration under 45 minutes. If the tape is used for masking operations or temporary protection, it should not be left on the product for more than 24 hours. For best results, the tape should not be exposed to ultraviolet rays or high temperature for prolonged periods of time (beyond manufacturer's specs). This tape is non-staining under normal use as described above.

Applications for High-Temp Masking Tape

- Silk screening applications
- Masking application in spray and brush painting, non-staining
- Protective purposes in manufacturing processes, strips clean
- For securing polyethylene sheeting to walls during painting
- For OEM repair shops
- Use in applications masking PCBs gold features for wave soldering or soldering under 302°F (150°C)
- For best results, apply to board using a rubber roller.
- Thick conductive adhesive excellent for conformability to protect critical PCB features
- Easily handles high temperatures of wave soldering without leaving significant residue
- Handles temperatures found in test and burn-in ovens

Wescorp ESD High Temp Polyimide Tape



Technical Information for ESD High Temp Polyimide Tape

Removal leaves little or no residue
 Adhesive surface resistance: 1×10^2 to $< 1 \times 10^5$ ohms per ANI/ESD STM11.11
 Max Temperature: 572°F (300°C) 10 seconds
 Adhesive Strength: 1 N/cm (DIN), 5 oz/inch² (ASTM)
 Polyimide Film (DuPont's Kapton® or equivalent)
 Film Thickness: 1.0 mil (0.001") (0.0254 mm)
 Conductive Silicone Adhesive

Overall Thickness: 1.4 mil (0.0014") (0.0356 mm)

Total Thickness: 2.4 mil (0.0024") (0.060 mm)

Color: Brown Opaque

Tensile Strength: 50 N/cm (DIN), 28 lbs/in² (ASTM)

Elongation: 70% (DIN & ASTM)

Static Charge Generation (300 mm/min):

Removal from Core (23°C, 50% RH):

5 volts, Internal Test Method

Removal from stainless steel (50% RH):

5 volts, Internal Test Method

Passed flammability per NASA STD 6001, Test 1 and

Hypergol ignition and penetration testing for casual contact per MTB-175-88

For best results, apply to board using a rubber roller.

Applications for High-Temp Polyimide Tape

- Ideal for masking gold leads and other components on boards populated with sensitive integrated circuits
- Thick conductive adhesive excellent for conformability to protect critical PCB features
- Near zero voltage generation when tape unrolled from roll [at 50% relative humidity]
- Near zero voltage generation when tape removed from PCB [at 50% relative humidity]
- Masking off PCBs for IR reflow ovens or wave soldering under 572°F (300°C) ~ 10 seconds

Note: ESD High Temp Polyimide Tape with conductive acrylic, adhesive (silicone free) is available as a special order.

Applications for Aisle Marking Tape

- Use to mark off floors designating ESD Protective Areas
- Can be used as area signs
- Note: Aisle marking Tape has no ESD control properties





Limited Warranty, Warranty Exclusions, Limit of Liability

See Desco's Terms and Conditions -

<http://desco.descoindustries.com/TermsAndConditions.aspx>

Tape Dispenser

2 inch wide ESD Tape Dispenser

- Use with Wescorp ESD tapes
- For tape with 3" (7.62 cm) Cores
- For tapes rolls up to 2" (48 mm) wide (or combination of rolls)
- Groundable chassis with included ground cord

Wescorp Tape Storage and Limited Warranty:

For best results, tape inventory should be continually replenished. It is recommended that rolls of tape be stored flat and rotated (flipped over to the other side) periodically. Tapes should be stored in a dry, well ventilated room with a reasonably consistent temperature of 68°F (20°C) and be protected from exposure to direct sunlight. Tape should not be stored in ultraviolet sunlight, moisture, or heat. Tape over one year old should be evaluated by the user to determine acceptability for the user's application. Desco Industries, Inc. recommends those tracking useful life of product to use shipping/invoice date as Desco Industries, Inc. expressly warrants that for a period of one (1) year from the date of purchase, our Wescorp Brand Antistatic Tape will be free of defects in material (parts) and workmanship (labor). See details of Limited Warranty online at Desco.com/Warranty.aspx