



## Antistatic Tape Applications



Wescorp Antistatic Tapes

*In ESD protected areas, replace regular high charging tape with Wescorp Antistatic Tape. ANSI/ESD S20.20 paragraph 6.23.1. state "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 Antistatic Cellulose Tape Line Technical Information for Antistatic Cellulose Tape



Thickness: 2.4 mil (0.06 mm)  
Film construction: Cellulose  
Adhesive: Rubber based - non-staining, absorbs moisture  
Adhesive surface resistance: 10E10 - 10E11 Ohms  
Temperature Range: -10°C - 71°C (14°F - 160°F)  
100°C for 10 min max - MIL-B-81705  
Color: Transparent  
Roll Length: 36 yards (1" core); 72 yards (3" core)  
Film Thickness: 2.0 mils  
Elongation: 25%  
Tensile Strength: 25 lbs/in<sup>2</sup>  
Adhesion Strength: 40 oz/in<sup>2</sup>

Surface Resistance (73°F, 45% RH):  
10E10 - 10E11 Ohms - ASTM-D-257  
Static Generation from conductive plate:  
(73°F, 45% RH): 80 volts average  
Static Generation from roll:  
(73°F, 45% RH): 50 volts average  
Meets government specs: CID-A-A-113C, Type 1 Class A

### Applications for Antistatic 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 obstructions in offices, antistatic workstations, or for general purpose third hand use
- 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 Antistatic Clear Cellulose Tape with Symbols

- Identification or marking product / paperwork / processes
- High visibility with ESD susceptibility symbol for increased awareness
- Attach ESD paperwork to bags or product
- Ideal in packaging for container sealing, static shielding bag closure and holding IC DIP tubes
- Prevents damage to sensitive electronic components in manufacturing

## Wescorp Antistatic Conductive Shielding Grid Tape



### Technical Information for Conductive Shielding Grid Tape

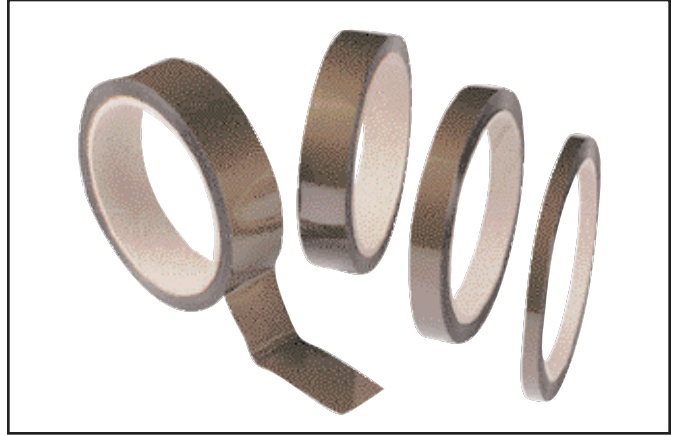
Both surfaces non-tribocharging at 50% RH  
Thickness: 1.9 mil (0.049 mm)  
Adhesive: acrylic based  
Conductive grid layer (50% RH): 10E4 to 10E5 ohms  
Adhesive copolymer resistivity: 10E9 Ohms  
Copolymer layer resistivity: 10E12 Ohms  
Max Temperature: 140°F (60°C)  
Absence of shed, crack, chip, or rub off  
Non-corrosive

### 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 zero
- Secure (bundle) IC tubes
- Covers 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 Antistatic High-Temp Polyimide Tape



### Technical Information for High-Temp Polyimide Tape

Removal leaves little or no residue  
Adhesive surface resistance: 10E2 to 10E4 Ohms  
Max Temperature: 572°F (300°C) 10 seconds  
Adhesive Strength: 1 N/cm (DIN), 5 oz/inch<sup>2</sup> (ASTM)  
Surface Resistance (Adhesive): 10E3 to 10E4 Ohms  
DuPont's Kapton<sup>®</sup> Polyimide Film or equivalent  
Thickness: 0.0254 mm (DIN), 1.0 mil (ASTM)  
Conductive Silicone Adhesive  
Thickness: 0.0356 mm (DIN), 1.4 mil thick (ASTM)  
Total Thickness: 0.060 mm (DIN), 2.4 mil (ASTM)  
Color: Brown Opaque  
Tensile Strength: 50 N/cm (DIN), 28 lbs/in<sup>2</sup> (ASTM)  
Elongation: 70% (DIN & ASTM)  
Static Charge Generation (300 mm/min):  
Removal from Core (23°C +/- 2°C, 50% +/- 2% RH):  
5 volts, Internal Test Method  
Removal from stainless steel (50% RH):  
5 volts, Internal Test Method  
Flamability: NASA STD 6001, Test 1  
Hypergol ignition and Penetration testing: MTB-175-88 (for casual contact)

### 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

### Proper Storage of Tape Rolls

SPI's Wescorp Brand ESD Tape line, if stored under proper conditions (see Note above) should retain its ESD technical properties as described by each corresponding Technical Drawing:

### Wescorp Antistatic Cellulose Tape

<http://www.spiwestek.com/pdf/96900.pdf>

### Wescorp Antistatic Conductive Shielding Grid Tape

<http://www.spiwestek.com/pdf/96947.pdf>

### Wescorp Antistatic High Temp Polyimide Tape

<http://www.spiwestek.com/pdf/96955.pdf>

### Usability

The user must determine the suitability for use of an antistatic tape for his particular application.

### Tape widths are nominal metric $\pm 0.8$ 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"

### Limited Warranty

SPI expressly warrants that for a period of one (1) year from the date of purchase, SPI Antistatic Tape will be free of defects in material (parts) and workmanship (labor). Within the warranty period, the product will be tested, repaired, or replaced at our option, free of charge. Call our Customer Service Department at 909-664-9986 for a Return Material Authorization (RMA) and proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of purchase date. Any unit under warranty should be shipped prepaid to the SPI factory. Warranty repairs will take approximately two weeks.

### Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

### Limit of Liability

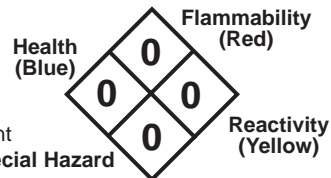
In no event will SPI or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

**Material Safety Data Sheet**

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200, Standard must be consulted for specific requirements.

**NFPA Designation 704**

Degree of Hazard:  
4 = Extreme  
3 = High  
2 = Moderate  
1 = Slight  
0 = Insignificant



**IDENTITY** (As Used on Label and List)

Wescorp Antistatic Cellulose Tape

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

**Section I**

Manufacturer's Name <u>Desco Industries Inc.</u>	Emergency Telephone Number <u>(909) 627-8178</u>
Address (Number, Street, City, State, and Zip Code) <u>3651 Walnut Avenue, Chino, CA 91710</u>	Telephone Number for Information <u>(909) 627-8178</u>
	Date Prepared <u>2-1-2006</u>
	Signature of Preparer (Optional)

**Section II - Physical/Chemical Characteristics**

Solubility in Water  
Negligible

Volatility at 100°C  
Less than 0.1%

**Section III - Hazardous Ingredients**

Hazardous Ingredients  
None

**Section IV - Fire and Explosion Hazard Data**

Flash Point (Method Used) <u>N/A</u>	Flammable Limits <u>N/A</u>	LEL	UEL
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Extinguishing Media  
Water, dry chemicals, foam, and CO2

Unusual Fire and Explosion Hazards  
Produces dense black smoke if burned

**Section V - Reactivity Data**

Reactivity <u>Not Reactive</u>	Conditions to Avoid <u>Exposure to temperatures in excess of 200°C/392°F cause decomposition.</u>
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**Section VI - Health Hazard Data**

Route(s) of Entry:	Inhalation? <u>None Known</u>	Skin? <u>Minor Irritation</u>	Ingestion? <u>None Known</u>
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Health Hazards (Acute and Chronic):  
None known

Signs and Symptoms of Exposure  
Skin: May cause skin irritation after prolonged exposure with adhesive side to skin.

**Section VII - Precautions for Safe Handling and Use**

Steps to Be Taken In Case Material is Released or Spilled  
N/A

**Section VII - Spill or Leak Procedures**

N/A

**Section VIII - Special Protection Information**

N/A

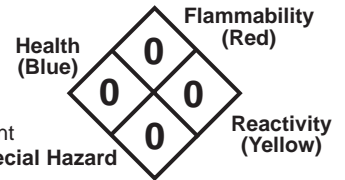
N/A = Not Applicable; NE = None Established

## Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200, Standard must be consulted for specific requirements.

## NFPA Designation 704

Degree of Hazard:  
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0 = Insignificant



### IDENTITY (As Used on Label and List)

Wescorp Antistatic Hi Temp Polyimide Tape

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

### Section I

Manufacturer's Name Desco Industries Inc.	Emergency Telephone Number (909) 627-8178
Address (Number, Street, City, State, and Zip Code) 3651 Walnut Avenue, Chino, CA 91710	Telephone Number for Information (909) 627-8178
Date Prepared 2-1-2006	Signature of Preparer (Optional)

### Section II - Physical/Chemical Characteristics

Polyimide Film  
Electrically conductive particles embedded in a layer of polysiloxane adhesive

### Section III - Hazardous Ingredients

No hazardous materials present  
(1) According to Commission Directive 88/379/EEC (Article 3 6aa).

### Section IV - First Aid Measures

- 4.1. Skin: No irritation is expected from handling the tape, however ensure good industrial hygiene and wash exposed areas with soap and Water.
- 4.2. Eyes: Rinse opened eye for several minutes under running water.
- 4.3. Inhalation: Not a probable route of exposure for adhesive tape. Exposure to the encapsulated electrically conductive articles in the adhesive layer is not likely.
- 4.4. Ingestion: Not a probable route of exposure for adhesive for adhesive tape. Treat symptomatically.
- 4.5. Other first aid information: Not known

### Section V - Fire Extinguishing Measures

- 5.1. Extinguishing media: Carbon dioxide, foam, dry powder, or fine water spray.
- 5.2. Unsuitable extinguishing media: None known
- 5.3. Unusual firefighting hazards: None known
- 5.4. Special firefighting procedures: Self-contained respirator should be worn.
- 5.5. Other recommendations: None known
- 5.6. Combustion products: Polyimide film chars but does not burn in air, however it will burn in an atmosphere of 100% oxygen. The major off-gases are carbon dioxide and carbon monoxide. The silicone adhesive layer also tends to char leaving residues of silica and off-gases containing carbon dioxide, traces of incompletely burned carbon products and formaldehyde.

### Section VI - Accidental Release Measure

- 6.1. Personal protection: Avoid contact with eyes.
- 6.2. Precautions to protect the environment: None established
- 6.3. Clean up procedure: Pick up to prevent floor

### Section VII - Handling and Storage

- 7.1. Handling precautions: Avoid contact with eyes. Ensure good industrial hygiene and wash skin with soap and water after contact.
- 7.2. Storage: No special measures are required.
- 7.3. Unsuitable packaging materials : None known.
- 7.4. Incompatibilities: None known.
- 7.5. Other information: None known.

### Section VIII - Exposure Controls and Personal Protection

- 8.1 Exposure controls: Safe handling/usage of PPI RD-042 at high temperatures (above 200°C/392°F) requires adequate ventilation. Using small quantities normal air circulation may be adequate otherwise further ventilation measures are recommended.
- 8.2. Exposure controls for hazardous components: No hazardous materials present
- 8.3. Personal protective equipment:
  - Respiratory: Not required for normal handling.
  - Protective gloves: Not required for normal handling, if tape is hot gloves are recommended as good industrial practice.
  - Eye/Face: Safety glasses are recommended as good industrial practice.
  - Industrial Hygiene: Wash after handling, especially before eating, drinking or smoking. Exercise good industrial hygiene practice.

**Section IX - Physical and Chemical Properties**

## 9.1 Appearance:

Form: Self-adhesive tape Color: Opaque black Odor: None

## 9.2. Safety Related Information

pH:	Not determined	Other data:	
Boiling point/Boiling range:	Not determined	Vapor density (air=1):	Not determined
Melting point/Melting range:	Not determined	Evaporation rate (ethyl ether = 1):	Not determined
Flash point:	Not determined	Viscosity:	Not determined
Flammability (solid):	Non-flammable	% Volatiles:	< 0.05% @ 200°C (392°F)
Auto flammability:	Non-flammable	Molecular weight:	Not determined
Explosive properties:	Not determined		
Oxidizing properties:	Not determined		
Vapor pressure:	Not determined		
Specific gravity:	Not determined		
Solubility in water:	Not soluble		
Solubility in organic solvent:	Soluble in Toluene		
Oil/water partition co-efficient	Not determined		

**Section X - Stability and Reactivity**

10.1 Stability: Stable at normal temperatures and storage conditions (ideal 23°C ± 2°C (73°F ± 4°F) 50% ± 2% relative humidity)

## 10.2 Reactivity:

Conditions to avoid: none known.

Materials to avoid: Can react with strong oxidizing agents

Hazardous decomposition products: At temperatures above 400°C/752°F, the major off-gases from polyimide film are carbon monoxide and carbon dioxide. With prolonged exposure to temperatures above 150°C/302°F silicone adhesives in the presence of oxygen may emit trace quantities of formaldehyde.

**Section XI - Toxicological Information**

## Possible Health Effects

Skin: (1) Prolonged or repeated contact may lead to slight irritation

Eyes: (1) May cause temporary discomfort

Inhalation: (1) No adverse effects are normally expected.

Ingestion: (1) Not known

Other health hazard information: None known.

LC 50 : Not determined

LD 50 : Not determined

(1) This information is based either on test data, extrapolation from tests on similar materials, review of component details, or a combination of all of these.

**Section XII - Ecological Impact**

12.1 Elimination Persistence: Not known Degradability: The adhesive is partly biodegradable

12.2 Behavior in an aquatic environment Mobility: Insoluble in water Bioaccumulation: Not known

12.3 Aquatic: Ecotoxic effects not known Terrestrial: Not known

**Section XIII - Waste Disposal**

13.1. Product disposal: Can be incinerated or land filled in accordance with federal, state and local regulations.

13.2. Packaging disposal: Packaging should be disposed of in accordance with regional and/or national regulations.

**Section XIV - Transport Information**

UNNO: Not applicable Label: Not applicable

ROAD &amp; RAIL TRANSPORT (ADR/RID) No special packaging or labeling required.

SEA TRANSPORT (IMO) No special packaging or labeling required.

IMO MARINE POLLUTANT: Not applicable

AIR TRANSPORT (ICAO) No special packaging or labeling required.

**Section XV - Regulatory Information**

15.1. EEC Supply classification &amp; labeling: (1) Contains: Not applicable - No special packaging on labeling requirements

15.2 National legislation. For product information in other EC languages, including appropriate national legislation, please contact the sales office at the above address.

15.3 Other regulations

German water class: 1 - slight risk of causing water pollution

German Vbf: Not applicable

Ozone depleting chemicals: No ozone depleting chemicals are present or used in manufacture.

N/A = Not Applicable; NE = None Established