

# ESD Packaging Solutions

Enhanced Safety and Convenience  
for Your ESD Protection Zones



# ESD-Safe Packaging with EPA<sup>®</sup>pack<sup>®</sup>



In our high-tech world, where precise electronic components are at the core of many innovations, we understand the critical importance of electrostatic protection. With our own brand EPA<sup>®</sup>pack<sup>®</sup>, we offer comprehensive packaging solutions that integrate dissipative, conductive and shielding elements to ensure that your components can be processed, stored and transported in a controlled and protected environment.

On the following pages you will find an excerpt from the comprehensive range of ESD packaging from DPV Elektronik-Service GmbH – your reliable partner for first-class ESD protection.

## Types of ESD Packaging

Dissipative, conductive, and shielding packages differ mainly in their ability to handle electrostatic charges. In addition, the DryShield class also offers reliable protection against moisture.



### Dissipative Packaging

**Property:**

These packages dissipate electrostatic charges in a controlled manner and therefore offer ideal protection for electronic components.

**Field of Application:**

This packaging is only used in EPAs. (**E**lectrostatic **P**rotected **A**rea). The containers are used for the transport and storage of electronic components and assemblies.



### Conductive Packaging

**Property:**

The material is low-impedance. In order to avoid possible damage to electronic components, it is important to ensure that there is an air gap to the components. In addition, the containers outside the EPAs must be closed.

**Field of Application:**

This packaging is only used in EPAs. (**E**lectrostatic **P**rotected **A**rea). The containers are used for the transport and storage of electronic components and assemblies.



### Shielding Packaging

**Property:**

Packaging with electromagnetic shielding (EMI shielding) protects against electrostatic charges and also offers protection against electromagnetic radiation.

**Field of Application:**

This is the standard packaging for all electronic components for transport and storage.

## ESD Packaging in Use















There are three different types of ESD film packaging. The designs are optimally tailored to the respective requirements of the different production, storage and transport environments.

### Use within the EPA

In the EPA, all objects are conductive (dissipative) and grounded. Charges and discharges are thus reliably prevented or dissipated. For this reason, dissipative or conductive packaging is completely sufficient here. They prevent direct discharge and dissipate electrostatic charges on the surface.

### Use outside the EPA

During shipping and storage, components that are sensitive to electrostatic discharge require additional protection. For this purpose, shielding packaging is required, which shields the interior from discharge. For improved protection, even in difficult conditions, the use of so-called Dry Shield or EMI Shielding bags is recommended. These are vacuum-packable and offer improved protection against moisture penetration.

	In the EPA	Storage and Transport outside the EPA			
	Within the Company	Outside the Company under Difficult Conditions			
<b>Dissipative</b>  	✓	✗	✗	✗	✗
<b>Conductive</b>  	✓	✗	✗	✗	✗
<b>Shielding</b>  	✓	✓			✗
<b>Dry-Shield</b>  	✓	✓			



### Our Tip

Even "non-ESD-compliant" parts that could be charged should be transported with ESD packaging in the EPA. This prevents existing cargo from being transported into the protected area, which can jump onto the ESDS components and damage them.



# EPA<sup>®</sup>pack<sup>®</sup> DPV-1000: Wide Range of Options for Individual Requirements

The metallized shielding bags in this series have a multi-layer structure and are available in numerous different sizes as standard bags for sealing or re-sealable with zip closure. In addition, other closure variants and special solutions are available:

## Multi-Layer Film Structure

- Antistatic coating outside
- Polyester
- Shielding aluminum layer
- Amine-free polyethylene
- Antistatic coating inside



Surface resistance inside and outside:  
 $R_s = 10^{10} - 10^{11} \Omega$

## Closure Variants for EPA<sup>®</sup>pack<sup>®</sup> DPV 1000



**Adhesive closure**  
Specification D-1001 SK  
[dpvlink 26750](#)



**Tear-off notches**  
Specification D-1001-EK  
[dpvlink 26782](#)



**Security seal tape**  
Specification D-1001 SB  
[dpvlink 26784](#)

For more information, sizes and versions, see [www.compumet.ch](http://www.compumet.ch). Simply enter the number of the green [dpvlink](#) in the search box.

## EPA<sup>®</sup>pack<sup>®</sup> DPV-1000 / DPV 1000 Zip

### Shielding



### Properties:

- Electrostatic shielding of <10nJ (Energy Test)  
High shielding against field induction, lowest triboelectric charge
- Controlled discharge of existing charges without spontaneous discharge
- Suitable for assemblies with batteries and rechargeable batteries
- Semi-transparent optics – the inside is visible
- Standard imprint: ESD warning symbol, type designation, recycling symbol, RoHS conformity, LOT no.

### Fields of Applications:

- ESD-safe transport packaging inside and outside the EPA (dry)
- For long-term storage of ESD-sensitive components

### Versions:

- Available in a wide range of sizes and designs
- Film thickness 0.078 mm

### Closure Variants:

- DPV-1000: heat-sealable
- DPV-1000 Zip: resealable zip closure
- Further closure variants (see on the left) on request



**RoHS**  
2011/65/EU

DPV-1000 [dpvlink 20892](#)  
DPV-1000 Zip [dpvlink 20910](#)

**EPA<sup>®</sup>pack DPV-3000 / DPV-3006 Zip**

**Dissipative**



**Properties:**

- Dissipative packaging bags
- Dissipative / antistatic (DIN EN 61340-5-1)
- Standard imprint: type designation, ESD warning symbol and LOT no.
- Cost-effective
- Pink, transparent
- amine-free, recyclable

**Fields of Applications:**

- Suitable for ESD-insensitive components within EPA (Electrostatic Protected Area)
- Assemblies with batteries / rechargeable batteries do not discharge

**Versions:**

- Extensive standard sizes from 80 mm x 120 mm to 400 mm x 600 mm
- Film thickness 0.06 mm or 0,1 mm

**Closure Variants:**

- DPV-3000: heat-sealable
- DPV-3006 Zip: resealable zip closure
- Adhesive closure available on request



**Adhesive closure**  
Specification SK  
[dpvlink 26740](#)

**DPV-3000** [dpvlink 468](#)  
**DPV-3006 Zip** [dpvlink 476](#)

**Packaging bags**

**Conductive**



**Properties:**

- Conductive packaging bags
- Conductive/volume-conductive
- In compliance with DIN EN 61340-5-1
- Black with imprint
- Surface and volume resistance  $R_S = 10^4 \Omega$
- Copolymer
- Recyclable
- Heat-sealable

**Fields of Applications:**

- Safe storage and transport
- Unlimited shelf life when stored properly

**Versions:**

- Different standard sizes from 250 x 300 mm to 500 x 600 mm
- Other versions available on request

**Carbostat**  
[dpvlink 512](#)

# Reliable Protection against ESD and Moisture with EPA-pack<sup>®</sup> Dry-Shield Bags

The moisture-impermeable, metallized barrier bags with a special multilayer made of dissipative polyethylene and polyester as well as aluminized polyester film offer excellent protection against moisture and electrostatic charge. This packaging is indispensable for ESD safety during transport and storage.

In combination with EPA-pack<sup>®</sup> desiccants and humidity indicators, ESD-sensitive electronic components are reliably protected even under the harshest outdoor conditions.

## Multi-Layer Film Structure

- Antistatic polyester outside
- Shielding aluminum layer
- Polyester
- Shielding aluminum layer
- Antistatic polyethylene inside



Surface resistance inside and outside:  
 $R_s = 10^{10} - 10^{11} \Omega$



### Our Tip



**KOMET** ESD Vacuum sealers [dpvlink 22148](#)

For more information, sizes and versions, see [www.compumet.ch](http://www.compumet.ch). Simply enter the number of the green **dpvlink** in the search box.

## EPA-pack<sup>®</sup> DPV-2000

**DRY-Shield Shielding Bag, Metallized**



### Properties:

- Shielding bag with moisture protection according to DIN EN 61340-5-1
- Electrostatic shielding of <15nJ (Energy Test)
- In compliance with MIL-PRF-81705 and ANSI / ESD STM11.31
- Moisture protection thanks to multilayer made of dissipative polyethylene
- Aluminized polyester film
- Amine-free, lead-free
- Standard imprint: ESD warning symbol, humidity symbol, type designation, recycling symbol, LOT number, RoHS symbol

### Fields of Applications:

- Packaging inside and outside the EPA
- ESD-safe transport packaging even exposed to moisture
- Packaging for long-term storage of ESD-sensitive components

### Closure Solutions:

- Heat-sealable
- Vacuumable

### Dimensions:

- Film thickness 0.09 mm
- 14 different standard sizes available from 76 mm x 127 mm to 457 mm x 609 mm

**EPA-pack<sup>®</sup> DPV-2000** [dpvlink 24317](#)

## EPA<sup>®</sup>pack<sup>®</sup> Moisture Protection

### Moisture Indicators



#### Properties:

- Wide bandwidth of measuring ranges in different gradations
- Choice of cobalt-free or cobalt-containing
- Longer shelf life and storage life
- In compliance with IPC/JEDEC J-STD-33

#### Measuring Ranges:

- Wide bandwidth of measuring ranges in different gradations from 5 % to 60 %

#### Packaging:

- Different container sizes
- Hermetically sealed metal can
- Packed in 25 units each in vacuum-sealed ESD bags

Cobalt-free [dpvlink 25069](#)  
 Cobalt-containing [dpvlink 24706](#)

## Dessicant

### Dessicant in Non-Woven Bag



#### Type Tyvek<sup>®</sup>

- Non-woven bag Tyvek<sup>®</sup>
- Not conductive
- Dessicant: natural clay
- High absorption capacity at a relative humidity of 40 %
- Shelf life: 3 years, when stored properly
- Complies with DIN 55473: dustproof for highly sensitive products

#### Type VA-ESD

- Bag made of ESD-compliant non-woven
- Antistatic, conductive
- Dessicant: clay
- Absorption capacity at a relative humidity above 50%
- Shelf life: 3 years, when stored properly
- Complies with DIN 55473: dustproof for highly sensitive products
- In compliance with the ESD standard DIN EN 61340-5-1

Type – Tyvek<sup>®</sup> [dpvlink 15353](#)  
 Type – VA-ESD [dpvlink 22932](#)

# EPAPack<sup>®</sup> Air Bubble Films Offer Perfect Protection during Transport and Storage

ESD air bubble film offers a number of advantages that help protect sensitive electronic components from electrostatic discharge. Thanks to their anti-static properties, they prevent ESD damage to electronic components.

In addition, the films offer excellent protection against impacts, scratches and moisture due to their three-layer structure.

## Three-Layer Film Structure

- Smooth inside and outside
- Knob diameter 10 mm
- Knob height 4 mm
- Heat-sealable
- Recyclable



For more information, sizes and versions, see [www.compumet.ch](http://www.compumet.ch). Simply enter the number of the green **dpvlink** in the search box.

## Air Bubble Bags EPAPack<sup>®</sup>

### Shielding



#### Properties:

- Metallized shielding HIGH-SHIELD air bubble film, without imprint
- Shielding film outside
- PERMASTAT<sup>®</sup> film inside
- Electrostatic shielding < 15 nJ (Energy Test)
- Surface and volume resistance  $R_s = 10^9 - 10^{10} \Omega$
- Recyclable
- Not heat-sealable
- In compliance with DIN EN 61340-5-1 + IEC

#### Fields of Applications:

- Environments exposed to electromagnetic radiation

#### Versions:

- 200 x 250 mm
- 150 x 225 mm
- 100 x 150 mm
- 250 x 300 mm
- 130 x 200 mm

#### Closure Versions:

- 50 mm flap
- Not reclosable

**Highshield dpvlink 608**



ESD Air Bubble Films, Three-Layer Rolls

<p>Dissipative </p>	<p>Conductive </p>	<p>Shielding </p>
		
<p><b>Properties:</b></p> <ul style="list-style-type: none"> <li>• Dissipative air bubble film</li> <li>• Color pink, without imprint</li> <li>• Made from approx. 35 % PIR recyclate</li> <li>• Recyclable polyethylene</li> <li>• Amine-free</li> <li>• Heat-sealable</li> <li>• In compliance with the ESD standard DIN EN 61340-5-1</li> </ul> <p><b>Fields of Applications:</b></p> <ul style="list-style-type: none"> <li>• ESD-safe transport packaging</li> <li>• Suitable for long-term storage of ESDS products</li> </ul> <p><b>Versions:</b></p> <ul style="list-style-type: none"> <li>• Roll length 100 m</li> <li>• Available in different widths from 300 mm to 1200 mm</li> </ul>	<p><b>Properties:</b></p> <ul style="list-style-type: none"> <li>• Permanently volume-conduc-tive copolymer film</li> <li>• Surface and volume resistance <math>R_s = 10^4 \Omega</math></li> <li>• Color black, without imprint</li> <li>• Unlimited shelf life when stored properly</li> <li>• Recyclable</li> <li>• Heat-sealable</li> <li>• Two film thicknesses available: 100 my und 160 my</li> <li>• In compliance with the ESD standard DIN EN 61340-5-1</li> </ul> <p><b>Fields of Applications:</b></p> <ul style="list-style-type: none"> <li>• Umgebungen mit höheren elektrostatischen Risiken</li> </ul> <p><b>Versions:</b></p> <ul style="list-style-type: none"> <li>• Roll length 100 m</li> <li>• Available in different widths from 300 mm to 1200 mm</li> </ul>	<p><b>Properties:</b></p> <ul style="list-style-type: none"> <li>• Metallized shielding HIGH-SHIELD air bubble film, without imprint</li> <li>• Shielding film outside</li> <li>• PERMASTAT<sup>®</sup> film inside</li> <li>• Electrostatic shielding &lt; 15 nJ (Energy Test)</li> <li>• Surface and volume resistance <math>R_s = 10^9 - 10^{10} \Omega</math></li> <li>• Heat-sealable, recyclable</li> <li>• In compliance with DIN EN 61340-5-1 + IEC</li> </ul> <p><b>Fields of Applications:</b></p> <ul style="list-style-type: none"> <li>• Environments exposed to electromagnetic radiation</li> </ul> <p><b>Versions:</b></p> <ul style="list-style-type: none"> <li>• Roll length 100 m</li> <li>• Available in different widths from 300 mm to 1200 mm</li> </ul>
<p><b>Further Products:</b></p> <ul style="list-style-type: none"> <li>• Also available as intermediate layers in various standard sizes for Euro containers.</li> </ul>	<p><b>Further Products:</b></p> <ul style="list-style-type: none"> <li>• Also available as intermediate layers in various standard sizes for Euro containers.</li> </ul>	<p><b>Further Products:</b></p> <ul style="list-style-type: none"> <li>• Also available as ready-to-use air bubble bags in various versions.</li> </ul>
<p>Film <a href="#">dpvlink 502</a> Interlayers <a href="#">dpvlink 17472</a></p>	<p>Film <a href="#">dpvlink 532</a> Interlayers <a href="#">dpvlink 17475</a></p>	<p>Film <a href="#">dpvlink 603</a> Bags <a href="#">dpvlink 608</a></p>

## ESD Gusseted Bags / Covers

Dissipative



### Properties:

- Dissipative transport packaging
- Dissipative / antistatic
- In compliance with the ESD standard DIN EN 61340-5-1
- without imprint
- Cost-effective
- Pink, transparent
- amine-free, recyclable

### Fields of Applications:

- for disposal or short-term storage of small parts, granules, etc.
- Shelf life: 3 years when stored properly

### Versions:

- Extensive standard sizes for all common transport containers
- Film thickness 0.05 mm or 0.1 mm
- Other versions available on request

**ESD Gusseted bags / covers**

**dpvlink 13869**

## EPA<sup>®</sup>pack PE Foam Film

Dissipative



The EPA<sup>®</sup>pack PE foam film is antistatic and easy to process. It is suitable as a cover, wrapping, divider and interlayer. With an optimum cushioning effect, the film adapts exactly to the product and protects against scratches and contamination by dust.

### Properties:

- Material: closed PE foam, amine-free
- In compliance with the ESD standard DIN EN 61340-5-1
- Color pink, without imprint
- Antistatic, surface resistance  $R_S 10^{11} \Omega$
- Heat-sealable
- recyclable

### Fields of Applications:

- ESD-safe transport packaging
- Packaging for long-term storage of ESDS products
- Shelf life: 2 years when stored properly

### Versions:

- Thickness 1,5 mm
- Roll length 150 m
- Available in different widths from 300 mm to 1200 mm

### Special Versions:

- Other thicknesses, perforations, cuttings, bags and covers are available on request

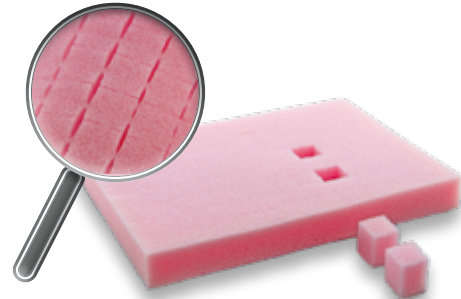
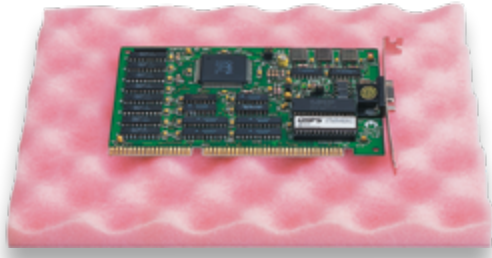
**PE foam film**

**dpvlink 9504**

For more information, sizes and versions, see [www.compumet.ch](http://www.compumet.ch). Simply enter the number of the green **dpvlink** in the search box.

## EPA<sup>®</sup>pack PU Foams

### ESD Foam Inserts for Shipping Boxes, Dissipative



#### Properties:

- ESD polyurethane foam
- Open-cell and soft
- Suitable as an insert for shipping boxes
- Dissipative, typical resistance  $R_S 10^{10} \Omega$
- In compliance with the ESD standard DIN EN 61340-5-1
- Shelf life: 2 years when stored properly
- More than 20 different standard sizes



#### Version Napped Foam Profile:

- Noppenschaum Profil 1:1
- Available in four different thicknesses: 10 mm, 15 mm, 20 mm or 30 mm
- Also available as self-adhesive foam

#### Version Smooth Foam:

- Available in two thicknesses: 15 mm und 20 mm

#### Special Versions:

- Special thicknesses / cuttings, stamped parts, plates and rolls available on request

#### Version Gridded Foam:

- Pre-cut grid 15 x 15 mm
- Thickness 20 mm
- Standard sizes for shipping boxes
- Special thicknesses/cuttings, plates available on request

#### ESD Shipping Boxes:

You can find a large selection of cardboard boxes on our website. From there, simply Type the word **shipping boxes** into the search box.

ESD PU foam inserts  
[dpvlink 641](#)

Gridded foam for shipping boxes  
[dpvlink 15724](#)

# Your System Supplier for Electronics Manufacturing



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