150 mm Wafer Shipping and Handling Products

The widest selection of 150 mm wafer shipping and handling products available
# TABLE OF CONTENTS

- Advanced Wafer Transport ........................................................ 1
- Multiple Wafer Shipping Boxes .................................................. 2
  - Ultrapak® Series ....................................................................... 2
- Single Wafer Shipping Boxes and Trays ........................................ 3
  - H93 Series Shipping Box ............................................................ 3
  - Solopak® Series Shipping Box .................................................... 4
  - H22 Series Shipping Box ............................................................ 5
  - H20 Series Tray ......................................................................... 5
- Transport Wafer Carriers .............................................................. 6
  - 194/196 Series .......................................................................... 6
  - 182 Series ................................................................................ 6
- Process Wafer Carriers ................................................................. 8
  - 194 Series ................................................................................ 8
  - 190 Series ................................................................................ 8
  - 182 Series ................................................................................ 9
- Storage Boxes ............................................................................... 10
  - E160 Series .............................................................................. 10
  - E124 Series .............................................................................. 10
  - E90 Series .............................................................................. 10
  - E206 Series .............................................................................. 10
  - H3150 Series ........................................................................... 11
- Options and Accessories .............................................................. 12
  - Wafer Carrier Handles .............................................................. 12
  - Storage Box Accessories ......................................................... 13
  - Identification Options ............................................................... 13
- Material Information ..................................................................... 14
- Other Products ............................................................................. 15
- Limited Warranty ......................................................................... 16
- For More Information ................................................................. 16
- Terms and Conditions of Sale ...................................................... 16
ADVANCED WAFER TRANSPORT

Trends in wafer processing technology have mandated advancements in wafer carrier technology to support today’s advanced semiconductor processing facilities. Wafer carriers designed for advanced wafer transport offer dramatic performance benefits over traditional low- and mid-range wafer carriers, including:

• Precise wafer access – the wafer is in a precise and predictable location
• Reliable equipment operation – on process tools and automated materials handling systems
• Secure wafer protection – from contamination and damage

Fab Technology Trends

- High-efficiency devices
- Compound semiconductor materials
- Tool uptime
- Copper processes
- Automation levels
- Tool throughput
- Design rules
- Additional mask layers
- Process temperatures

Wafer Carrier Material Characteristics

- Polypropylene
- Outgassing at high temperatures
- Thermal capabilities
- Electrostatic discharge
- Dimensional stability
- Particulation
- Value

Next Generation Advanced Wafer Transport with STAT-PRO 9000

Advanced Wafer Transport with STAT-PRO® 3000

PPA PBT

1960s to 1970s

1980s to 1990s

2000s to 2010s

- Wafer Carrier Material Characteristics -
MULTIPLE WAFER SHIPPING BOXES

ULTRAPAK® SERIES

- Individual horizontal cantilever springs limit wafer rotation to reduce particle contamination and also secure the wafers in the cassette to safeguard against breakage
- Ultrapure polypropylene materials provide a clean shipping environment and assure low levels of condensable inorganics
- Horizontal and vertical robotic pickup flanges on the cassette allow convenient handling
- Center notch track alignment and "H" bar ensure accurate equipment interoperability both vertically and horizontally
- Three design options to accommodate varying wafer thickness

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Wafer thickness range</th>
<th>Material</th>
</tr>
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<tbody>
<tr>
<td>H9150-0042</td>
<td>Thin wafer shipper, unclean</td>
<td>150 – 675 µ</td>
<td>High-purity polypropylene</td>
</tr>
<tr>
<td>H9150-0043</td>
<td>Thin wafer shipper, cleaned</td>
<td>150 – 675 µ</td>
<td>High-purity polypropylene</td>
</tr>
<tr>
<td>H9150-0037</td>
<td>Standard wafer shipper, uncleaned</td>
<td>400 – 800 µ</td>
<td>High-purity polypropylene</td>
</tr>
<tr>
<td>H9150-0038</td>
<td>Standard wafer shipper, cleaned</td>
<td>400 – 800 µ</td>
<td>High-purity polypropylene</td>
</tr>
<tr>
<td>H9150-0044PA</td>
<td>Thick wafer shipper, uncleaned</td>
<td>500 – 1500 µ</td>
<td>High-purity polypropylene</td>
</tr>
<tr>
<td>H9150-0045PA</td>
<td>Thick wafer shipper, cleaned</td>
<td>500 – 1500 µ</td>
<td>High-purity polypropylene</td>
</tr>
</tbody>
</table>
SINGLE WAFER SHIPPING BOXES AND TRAYS

H93 SERIES SHIPPING BOX

- For shipping and storage applications
- Holds one wafer face down contacting only the wafer’s edges
- Replaceable cushions securely retain the wafer to minimize particle generation
- Single latch provides secure closure and easy opening
- Tweezers slots conveniently located for easy wafer handling
- Large top surface provides a convenient space for labeling
- Stackable shipping boxes allow efficient use of storage space
- Pin-in-socket hinges allow the shipper to be opened horizontally, providing stability for wafer handling
- Clear polycarbonate material allows visual inspection without opening
- Optional STAT-PRO® 500 black conductive polycarbonate material provides static protection
- Overall size: 175 mm × 160 mm × 20 mm (6.9” × 6.3” × 0.8”)

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>H93-60-101-1116</td>
<td>Assembly</td>
<td>Clear polycarbonate</td>
</tr>
<tr>
<td>H93-60-101-66C02</td>
<td>Assembly, ESD</td>
<td>STAT-PRO 150</td>
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</tbody>
</table>
SOLOPAK® SERIES SHIPPING BOX

- For shipping and storage applications
- Holds one wafer face down or face up in a conical pocket contacting only the wafer’s edges
- Flat or notch locators prevent wafer rotation to minimize particle generation
- Dual latch provides secure closure and easy opening
- Tweezer slots conveniently located for easy wafer handling
- Large top surface provides a convenient space for labeling
- Stackable shipping boxes allow efficient use of storage space
- Pin-in-socket hinges allow the shipper to be opened horizontally, providing stability for wafer handling
- Clear polycarbonate material allows visual inspection without opening
- Overall size: 173 mm × 162 mm × 16 mm (6.8” × 6.4” × 0.6”)

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z150-0101</td>
<td>Shipping box for flat wafer</td>
<td>Clear polycarbonate</td>
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</table>
H22 SERIES SHIPPING BOX

- For shipping and storage applications
- Holds one wafer face down in a conical pocket contacting only the wafer’s edges
- Spring securely retains the wafer to minimize particle generation
- Screw on cover provides secure closure and easy opening
- Large top surface provides a convenient space for labeling
- Stackable shipping boxes allow efficient use of storage space

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>H22-60-0615</td>
<td>Tray</td>
<td>Natural polypropylene STAT-PRO 150</td>
</tr>
<tr>
<td>H22-60-62C02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H22-601-0615</td>
<td>Cover</td>
<td>Natural polypropylene STAT-PRO 150</td>
</tr>
<tr>
<td>H22-601-62C02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H22-602-0615</td>
<td>Spring</td>
<td>Natural polypropylene STAT-PRO 150</td>
</tr>
<tr>
<td>H22-602-62C02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

H20 SERIES TRAY

- For internal handling and storage applications
- Holds one wafer face down in a conical pocket contacting only the wafer’s edges
- Tweezer slots conveniently located for easy wafer handling
- Stackable tray on tray for efficient use of storage space
- Overall size:
  - H20-5000: 163 mm × 163 mm × 5 mm (6.4" × 6.4" × 0.2")
  - H20-5001: 163 mm × 163 mm × 10 mm (6.4" × 6.4" × 0.4")

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>H20-5000-01-1415*</td>
<td>Tray, pocket depth 1.5 mm (0.06&quot;)</td>
<td>Natural ABS</td>
</tr>
<tr>
<td>H20-5001-01-1415*</td>
<td>Tray, pocket depth 1.3 mm (0.05&quot;)</td>
<td>Natural ABS</td>
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</tbody>
</table>

*Extended lead times and minimum order quantities apply.
194/196 SERIES
SUPERIOR AUTOMATION PERFORMANCE
• High rigidity and dimensional stability
• Four-point contact on the “H” bar and track for improved wafer positioning
• Open sidewall style
• High profile design for maximum wafer protection
• Locating track notches for the center of the thirteenth pocket
• “H” bar equipment interface
• Pins and holes on the top rail
• Wafer capacity: 25
• D1 dimension: 14.5 mm (0.57”)
• Pocket spacing: 4.8 mm (0.19”)
• Pocket flat: 1.5 mm (0.06”)

182 SERIES
THE INDUSTRY STANDARD 150 MM WAFER CARRIER
• High rigidity and dimensional stability
• Four-point contact on the “H” bar and track for improved wafer positioning (unless noted)
• Open sidewall style
• High profile design for maximum wafer protection
• Locating track notches for the center of the thirteenth pocket (unless noted)
• “H” bar equipment interface
• Pins and holes on the top rail
• Wafer capacity: 25
• D1 dimension: 14.5 mm (0.57”)
• Pocket spacing: 4.8 mm (0.19”)
• Pocket flat: 1.5 mm (0.06”)

K196-60MLB-97C02

K182-60MB-97C02
Next generation advanced wafer transport carriers shown in **bold blue**. Advanced wafer transport carriers shown in **bold**.

### Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>End wall configuration</th>
<th>&quot;H&quot; bar end flanges</th>
<th>Compatible boxes</th>
<th>Material</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>K196-60MLB-97C02</td>
<td>Flanges</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 9000</td>
<td>—</td>
</tr>
<tr>
<td>K196-60ML-97C02</td>
<td>Flanges, handle</td>
<td>Yes</td>
<td>—</td>
<td>STAT-PRO 3000</td>
<td>—</td>
</tr>
<tr>
<td>A196-60MLB-47C02</td>
<td>Flanges</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 3000</td>
<td>Allows migration to K196-60MLB-97C02</td>
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<tr>
<td>A196-60ML-47C02</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 3000</td>
<td>Allows migration to K196-60ML-97C02</td>
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<tr>
<td>A196-60MLX-47C02</td>
<td>Flanges, handle</td>
<td>Yes</td>
<td>—</td>
<td>STAT-PRO 3000</td>
<td>—</td>
</tr>
<tr>
<td>FA196B-60MLB-7902</td>
<td>Flanges</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>FluoroSentry</td>
<td>Allows migration to A196-60MLB-47C02 or K196-60MLB-97C02</td>
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<tr>
<td>PA194-60MB-0603</td>
<td>Flanges</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>Blue polypropylene</td>
<td>Red, green, yellow, orange, and natural colors available</td>
</tr>
<tr>
<td>PA194-60MB-61C02</td>
<td>Flanges</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 100</td>
<td>No track notches (version with notches available – contact Entegris)</td>
</tr>
<tr>
<td>K182-60MB-97C02</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 9000</td>
<td>No track notches (version with notches available – contact Entegris) Allows migration to K182-60MB-97C02</td>
</tr>
<tr>
<td>KA182-60MB-47C02</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 3000</td>
<td>No track notches (version with notches available – contact Entegris) Allows migration to K182-60MB-97C02</td>
</tr>
<tr>
<td>FA182-60MB-7902</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>FluoroSentry</td>
<td>Allows migration to KA182-60MB-47C02 or K182-60MB-97C02</td>
</tr>
<tr>
<td>PA182-60MB-0603</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>Blue polypropylene</td>
<td>No four-point contact No track notches Allows migration to KA182-60MB-47C02 or K182-60MB-97C02 Red, green, yellow, orange, and natural colors available</td>
</tr>
<tr>
<td>PA182-60MB-61C02</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 100</td>
<td>No four-point contact No track notches Allows migration to KA182-60MB-47C02 or K182-60MB-97C02</td>
</tr>
<tr>
<td>PA182-60MC-61C02</td>
<td>Flanges, inspection window</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 100</td>
<td>No four-point contact No track notches</td>
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<tr>
<td>PA182-60MBN-61C02</td>
<td>Flanges</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>STAT-PRO 100</td>
<td>No four-point contact Allows migration to KA182-60MB-47C02 or K182-60MB-97C02</td>
</tr>
</tbody>
</table>
150 MM WAFER SHIPPING AND HANDLING PRODUCTS

**PROCESS WAFER CARRIERS**

**194 SERIES**

**SUPERIOR PROCESS CARRIER AUTOMATION PERFORMANCE**

- Improved process carrier rigidity and dimensional stability
- Four-point contact on the “H” bar and track for improved wafer positioning
- Open sidewall design to minimize liquid traps and promote even solution coverage and drainage
- High profile design for maximum wafer protection
- Locating track notches for the center of the thirteenth pocket
- “H” bar equipment interface
- Pins and holes on the top rail
- Chemical resistant natural PFA material
- Wafer capacity: 25
- D1 dimension: 14.5 mm (0.57”)
- Pocket spacing: 4.8 mm (0.19”)
- Pocket flat: 1.5 mm (0.06”)

**190 SERIES**

**LOW PROFILE FOR OPTIMUM PERFORMANCE IN CENTRIFUGAL APPLICATIONS**

- Low contour for improved spray penetration to the wafers
- Open sidewall design to minimize liquid traps and promote even solution coverage and drainage
- “H” bar equipment interface
- Pins and holes on the top rail
- Chemical resistant natural PFA material
- Wafer capacity: 25
- D1 dimension: 14.5 mm (0.57”)
- Pocket spacing: 4.8 mm (0.19”)
- Pocket flat: 1.4 mm (0.05”)

![A194-60MB-0215](image1.png)

![A190-60M-0215](image2.png)
182 SERIES
THE INDUSTRY STANDARD 150 MM PROCESS WAFER CARRIER

- Four-point contact on the “H” bar for improved wafer positioning
- Open sidewall design to minimize liquid traps and promote even solution coverage and drainage
- High profile design for maximum wafer protection
- “H” bar equipment interface
- Pins and holes on the top rail
- Chemical resistant natural PFA material
- Wafer capacity: 25
- D1 dimension: 14.5 mm (0.57”)
- Pocket spacing: 4.8 mm (0.19”)
- Pocket flat: 1.5 mm (0.06”)

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>End wall configuration</th>
<th>“H” bar end flanges</th>
<th>Compatible boxes</th>
<th>Compatible boxes</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A194-60MB-0215</td>
<td>Flanges</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>A72-60-03, A040-103, A049, A72-60-04, A055</td>
<td>Natural PFA</td>
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<tr>
<td>A190-60M-0215</td>
<td>Flanges</td>
<td>No</td>
<td>E124, E160, H3150</td>
<td>A72-60-03, A055</td>
<td>Natural PFA</td>
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<tr>
<td>A190-60MH-0215</td>
<td>Flanges, handle</td>
<td>No</td>
<td>H3150</td>
<td>A72-60-03</td>
<td>Natural PFA</td>
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<tr>
<td>A182-60M-0215</td>
<td>—</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>A72-60-03, A040-103, A049, A72-60-04, A055</td>
<td>Natural PFA</td>
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<td>Flanges</td>
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<td>A72-60-03, A040-103, A049, A72-60-04, A055</td>
<td>Natural PFA</td>
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<td>—</td>
<td>A72-60-03, A040-103, A049, A72-60-04, A055</td>
<td>Natural PFA</td>
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<tr>
<td>A182-60MC-0215</td>
<td>Flanges, inspection window</td>
<td>No</td>
<td>E90, E124, E160, E206, H3150</td>
<td>A72-60-03, A040-103, A049, A72-60-04, A055</td>
<td>Natural PFA</td>
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<tr>
<td>A182-60MU-0215</td>
<td>End wall</td>
<td>Yes</td>
<td>E90, E124, E160, E206, H3150</td>
<td>A72-60-03, A040-103, A049, A72-60-04, A055</td>
<td>Natural PFA</td>
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</table>
**STORAGE BOXES**

**E160 SERIES**

**OPTIMUM PERFORMANCE AND REDUCED PARTICLE GENERATION**

- Five degree wafer tilt from wafers vertical allows wafers to rest on their backsides, reducing movement and particle generation
- Smooth surfaces for easy cleaning and low particle generation
- Pin and socket hinges with retainers for improved durability
- Stackable
- Single carrier capacity
- Compatible carriers: All 25-capacity without handles
- Overall dimensions: 195 mm × 203 mm × 211 mm (7.7” × 8.0” × 8.3”)

**E124 SERIES**

**THE INDUSTRY STANDARD 150 MM STORAGE BOX**

- Automation compatible
- Smooth surfaces for easy cleaning and low particle generation
- Drop front allows easy access by robotic end effectors
- Robotic compatible slide latch
- Rotating pin and socket hinges prevent box from tipping when open
- Stackable
- Single carrier capacity
- Compatible carriers: All 25-capacity without handles
- Overall dimensions: 213 mm × 213 mm × 190 mm (8.4” × 8.4” × 7.5”)

**E90 SERIES**

**MAXIMUM STACKING DENSITY FOR SPACE LIMITED STOCKERS AND WIP RACKS**

- Smooth bottom
- Pin and socket hinges
- Stackable
- Single carrier capacity
- Compatible carriers: 182 series and 194/196 series 25-capacity without handles
- Overall dimensions: 208 mm × 193 mm × 188 mm (8.2” × 7.6” × 7.4”)

**E206 SERIES**

**REDUCED PARTICLE GENERATION AND ENHANCED ROBOTIC INTERFACE**

- Automation compatible
- Twenty degree wafer tilt from wafers horizontal allows wafers to rest on their backsides, reducing movement and particle generation
- Smooth surfaces for easy cleaning and low particle generation
- Keyed pin and socket hinges are free rotating and easy to assemble and disassemble
- Stackable
- Single carrier capacity
- Compatible carriers: All 25-capacity without handles except A190 series low profile process carriers
- Overall dimensions: 439 mm × 274 mm × 216 mm (17.3” × 10.8” × 8.5”)

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E160-60-103-69F02 box with K182-60MB-97C02 carrier

E124-60-101-69F02 box with K182-60MB-97C02 carrier

E90-102-61C02 box with K182-60MB-97C02 carrier

E206-60-101-69F02 box with K182-60MB-97C02 carrier
H3150 SERIES

Optimum Performance and High Storage Density

- Five degree wafer tilt from wafers vertical (unless noted) allows wafers to rest on their backsides, reducing movement and particle generation
- Smooth surfaces for easy cleaning and low particle generation
- Low profile base allows easy access to wafer carrier end wall flanges
- Rotating pin and socket hinges prevent box from tipping when open
- Stackable (unless noted)
- Two carrier capacity

Compatible carriers: All 25-capacity without handles

Overall dimensions: 211 mm × 405 mm × 189 mm (8.3” × 16.0” × 7.43”)

Ordering Information

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<thead>
<tr>
<th>Part number</th>
<th>Latch style</th>
<th>Compatible envelope</th>
<th>Optional cushion</th>
<th>Material</th>
<th>Notes</th>
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<tbody>
<tr>
<td>E160-60-103-69F02</td>
<td>Flip</td>
<td>—</td>
<td>—</td>
<td>STAT-PRO 175</td>
<td>Molded in cardholder</td>
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<tr>
<td>E160-60-103S-69F02</td>
<td>Flip</td>
<td>E96-21-1613</td>
<td>—</td>
<td>STAT-PRO 175</td>
<td>Molded in cardholder</td>
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<tr>
<td>E160-60-103-69F02</td>
<td>Flip</td>
<td>—</td>
<td>—</td>
<td>Cover: clear polycarbonate Bottom: STAT-PRO 175</td>
<td>Molded in cardholder Red, blue and green polycarbonate covers available</td>
</tr>
<tr>
<td>E124-60-101-0603</td>
<td>Slide</td>
<td>E96-3P-21A15</td>
<td>E95-6-0815</td>
<td>Blue polypropylene</td>
<td>Molded in cardholder Red, green, yellow, orange and natural colors available</td>
</tr>
<tr>
<td>E124-60-101-61C02</td>
<td>Slide</td>
<td>E96-3P-21A15</td>
<td>E95-6-0815</td>
<td>STAT-PRO 100</td>
<td>Molded in cardholder</td>
</tr>
<tr>
<td>E124-60-101-69F02</td>
<td>Slide</td>
<td>E96-3P-21A15</td>
<td>E95-6-0815</td>
<td>STAT-PRO 175</td>
<td>Molded in cardholder</td>
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<tr>
<td>E124-60-103-69F02</td>
<td>Slide</td>
<td>E96-3P-21A15</td>
<td>E95-6-0815</td>
<td>Cover: clear polycarbonate Bottom: STAT-PRO 175</td>
<td>Molded in cardholder Red, blue and green polycarbonate covers available</td>
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<tr>
<td>E90-101-0603</td>
<td>Snap</td>
<td>E96-3P-21A15</td>
<td>E95-2-0815</td>
<td>Blue polypropylene</td>
<td>Red, green, yellow, orange and natural colors available</td>
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<tr>
<td>E90-101-61C02</td>
<td>Snap</td>
<td>E96-3P-21A15</td>
<td>E95-2-0815</td>
<td>STAT-PRO 100</td>
<td>—</td>
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<tr>
<td>E90-102-0603</td>
<td>Swing pin</td>
<td>E96-3P-21A15</td>
<td>E95-2-0815</td>
<td>Blue polypropylene</td>
<td>Red, green, yellow, orange and natural colors available</td>
</tr>
<tr>
<td>E90-102-61C02</td>
<td>Swing pin</td>
<td>E96-3P-21A15</td>
<td>E95-2-0815</td>
<td>STAT-PRO 100</td>
<td>—</td>
</tr>
<tr>
<td>E206-60-101-0603</td>
<td>Quarter turn</td>
<td>E96-4P-21A15</td>
<td>—</td>
<td>Blue polypropylene</td>
<td>Red, green, yellow, orange and natural colors available</td>
</tr>
<tr>
<td>E206-60-101-61C02</td>
<td>Quarter turn</td>
<td>E96-4P-21A15</td>
<td>—</td>
<td>STAT-PRO 100</td>
<td>—</td>
</tr>
<tr>
<td>E206-60-101-69F02</td>
<td>Quarter turn</td>
<td>E96-4P-21A15</td>
<td>—</td>
<td>STAT-PRO 175</td>
<td>—</td>
</tr>
<tr>
<td>H3150-0001</td>
<td>Flip</td>
<td>—</td>
<td>—</td>
<td>STAT-PRO 100</td>
<td>Two molded in cardholders Stackable – no wafer tilt</td>
</tr>
<tr>
<td>H3150-0015</td>
<td>Flip</td>
<td>—</td>
<td>—</td>
<td>EmstatAR</td>
<td>Two molded in cardholders Stackable – no wafer tilt</td>
</tr>
</tbody>
</table>
## OPTIONS AND ACCESSORIES

### WAFER CARRIER HANDLES

Entegris offers a variety of wafer carrier handles to meet your specific application requirements.

### Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Handle style</th>
<th>Description</th>
<th>Compatible wafer carriers</th>
<th>Overall size</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A72-60-03-0215</td>
<td>Squeeze</td>
<td>Attaches to the notches on both end walls of carrier</td>
<td>All &quot;M&quot; style</td>
<td>163 mm × 140 mm × 183 mm (6.4’ × 5.5’ × 7.2”)</td>
<td>Natural PFA, Blue polypropylene</td>
</tr>
<tr>
<td>PA72-60-03-0603</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A040-103-0215</td>
<td>Squeeze with lock bar</td>
<td>Attaches to the notches on both end walls of carrier</td>
<td>All 182 series and 194 series</td>
<td>165 mm × 152 mm × 165 mm (6.5’ × 6.0’ × 6.5”)</td>
<td>Natural PFA</td>
</tr>
<tr>
<td>A049-0215</td>
<td>Squeeze with support bar</td>
<td>Attaches to the notches on both end walls of carrier</td>
<td>All 182 series and 194 series</td>
<td>165 mm × 163 mm × 203 mm (6.5’ × 6.3’ × 80”)</td>
<td>Natural PFA</td>
</tr>
<tr>
<td>A72-60-04-0215</td>
<td>Slingshot</td>
<td>Slides onto the top flanges of the carrier</td>
<td>All 182 series and 194 series</td>
<td>15 mm × 192 mm × 237 mm (0.6’ × 7.5’ × 9.3”)</td>
<td>Natural PFA, Blue polypropylene</td>
</tr>
<tr>
<td>PA72-60-04-0603</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A055-0215</td>
<td>End-load</td>
<td>Attaches to the flanges on the end wall of the carrier, allowing handling of carrier from end rather than over the top</td>
<td>All carriers with robotic flanges except those with end wall handles or &quot;U&quot; end walls</td>
<td>208 mm × 173 mm × 46 mm (8.2’ × 6.8’ × 1.8”)</td>
<td>Natural PFA</td>
</tr>
</tbody>
</table>

![Squeeze style](image1.png)

![Squeeze style with lock bar](image2.png)

![Squeeze style with lock bar](image3.png)

![Slingshot style](image4.png)

![End-load style](image5.png)
STORAGE BOX ACCESSORIES

TRAVELER ENVELOPES

- Flexible envelopes snap onto covers
- Compatible with most 150 mm storage boxes

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Compatible</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>E96-3P-21A15</td>
<td>E90 series and E124 series</td>
<td>Antistatic PVC</td>
</tr>
<tr>
<td>E96-4P-21A15</td>
<td>E206 series</td>
<td>Antistatic PVC</td>
</tr>
<tr>
<td>E96-21-1613</td>
<td>Select E160 series</td>
<td>Transparent PVC</td>
</tr>
</tbody>
</table>

CUSHIONS

- Snap inside box covers to provide added wafer security
- Compatible with E90 series and E124 series storage boxes

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Compatible storage boxes</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>E95-2-0815</td>
<td>E90 series</td>
<td>Low-density polyethylene</td>
</tr>
<tr>
<td>E95-6-0815</td>
<td>E124 series</td>
<td>Low-density polyethylene</td>
</tr>
</tbody>
</table>

IDENTIFICATION OPTIONS

Entegris offers various identification options including:

- Laser marking
- Hot stamping
- Bar code labels
- Radio frequency tags
- Cardholders
- Booklet holders
- Run card slip
- Colored ID tags

Contact Entegris to determine a suitable identification method for your application.
MATERIAL INFORMATION

General material information is provided for your reference. Contact Entegris for additional information.

<table>
<thead>
<tr>
<th>Material</th>
<th>Application</th>
<th>Description</th>
<th>Surface resistivity (ohms/sq)</th>
<th>Continuous use temperature limit</th>
<th>Wafer insertion temperature limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue polypropylene</td>
<td>Standard storage box material</td>
<td>Natural polypropylene with a blue colorant</td>
<td>—</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>EmstatAR</td>
<td>High-performance wafer transport carrier material</td>
<td>A static dissipative blend of polypropylene box material and carbon fiber</td>
<td>$10^7 - 10^9$</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>FluoroSentry</td>
<td>Intermediate-performance wafer transport carrier material</td>
<td>An advanced, static protective blend of butyl terephthalate (PBT) and carbon fiber</td>
<td>$10^6 - 10^{10}$</td>
<td>55°C</td>
<td>55°C</td>
</tr>
<tr>
<td>High-purity polypropylene</td>
<td>Multiple wafer shipping box material</td>
<td>Ultrapure natural polypropylene</td>
<td>—</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>Natural ABS</td>
<td>Tray material</td>
<td>Opaque acrylonitrile butadiene styrene (ABS)</td>
<td>—</td>
<td>70°C</td>
<td>—</td>
</tr>
<tr>
<td>Natural PFA</td>
<td>Process wafer carrier material</td>
<td>Translucent perfluoroalkoxy</td>
<td>—</td>
<td>180°C</td>
<td>290°C</td>
</tr>
<tr>
<td>Polycarbonate</td>
<td>Transparent storage box cover material</td>
<td>Colorable, transparent material</td>
<td>—</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>STAT-PRO 100</td>
<td>Wafer transport carrier and storage box material</td>
<td>A static dissipative blend polypropylene, and pure inert carbon powder</td>
<td>$10^7 - 10^8$</td>
<td>55°C</td>
<td>55°C</td>
</tr>
<tr>
<td>STAT-PRO 150</td>
<td>Single wafer shipping box material</td>
<td>A conductive blend of polypropylene, glass bead, and carbon powder</td>
<td>$10^7 - 10^8$</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>STAT-PRO 175</td>
<td>High-performance storage box material</td>
<td>A static dissipative blend of polypropylene and carbon fiber</td>
<td>$10^7 - 10^8$</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>STAT-PRO 500</td>
<td>Single wafer shipping box material</td>
<td>A conductive blend of polycarbonate and carbon fiber</td>
<td>$10^7 - 10^8$</td>
<td>55°C</td>
<td>—</td>
</tr>
<tr>
<td>STAT-PRO 3000</td>
<td>High-performance wafer transport carrier material</td>
<td>An advanced, static dissipative blend of polyetheretherketone and carbon fiber</td>
<td>$10^4 - 10^9$</td>
<td>120°C</td>
<td>340°C</td>
</tr>
<tr>
<td>STAT-PRO 9000</td>
<td>Next generation, high-performance wafer transport carrier material</td>
<td>An advanced, static dissipative blend of carbon nanotube (CNT) enhanced polyetheretherketone (PEEK™ polymer) carbon compound</td>
<td>$10^4 - 10^9$</td>
<td>120°C</td>
<td>340°C</td>
</tr>
</tbody>
</table>
**OTHER PRODUCTS**

Additional products and services to support your 150 mm wafer processing needs include:

- Mask and reticle packages
- Finished wafer shipping products
- Bare die and packaged IC shipping and handling products
LIMITED WARRANTY

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