Skinguard
Thermoplastics and Lamination Resins
for Prosthetics and Orthotics

Quality for life

Information for Practitioners
As you know from practical experience, every fitting is unique. You have to meet the needs of the user with solutions that are as customised as possible. The right measures at the right time can often prevent subsequent complications and limitations. This makes the timely care of residual limbs extremely significant for rehabilitation success. In addition to consistent medical monitoring of the wound healing process after the operation, care of the residual limb is especially important. The use of antibacterial thermoplastics for prosthetic and check sockets is intended to protect the skin and prosthetic socket against a wide range of different microorganisms right from the outset.

For the user, the benefit of Skinguard Technology is that discolouration and odour caused by microbes are considerably reduced and that the lifespan of the product is extended. The additives assure more pleasant wearing characteristics and enhanced skin comfort.

Skinguard Technology is an umbrella brand representing technologies with various antibacterial substances based on different active principles. For example, technologies such as Sanitized® and SilverShield® are included under this umbrella brand.

In the area of lamination resins, Ottobock offers the innovative C-Orthocryl Skinguard. The Sanitized® additive has been integrated into this lamination resin. Sanitized® protects the product against a broad spectrum of different microorganisms by use of an antibacterial additive. Thanks to the ability to attack the membrane of microorganisms, the antibacterial additive reduces their uptake of nutrients which impairs growth. Membrane damage caused by the antibacterial additive also results in the leakage of cellular fluid, causing the bacteria to die.

SilverShield® Technology is the first product line of antibacterial thermoplastics available for orthopaedics technology. SilverShield® thermoplastics contain an antibacterial substance: silver (argentum). Upon contact with water molecules, the thermoplastics release silver ions at extremely low speed; these silver ions exert various antibacterial and growth-retarding effects on bacteria. In addition to SilverShield® Technology, Ottobock is now also offering antibacterial ThermoLyn rigid and the antibacterial ThermoLyn clear for test sockets in lower limb prosthetics, ThermoLyn soft (clear) for inner prosthetic sockets and ThermoLyn soft (skin colour) for upper limb prosthetics. Antibacterial ThermoLyn PETG is used for the Harmony fitting. For fabricating orthoses, the company offers ThermoLyn PP-H as well as ThermoLyn PE 200.

The biological compatibility of the antibacterial thermoplastics for prosthetic and check sockets has been proven by biological compatibility tests according to EN ISO 10993. These thermoplastics from Ottobock have successfully passed the following tests in an independent laboratory in accordance with the above standard:

- Cytotoxicity test (EN ISO 10993 Part 5)
- Irritation and sensitisation (EN ISO 10993 Part 10)

In accordance with the specifications of the JIS Z 2801 standard and the AATCC 147:2004 standard, an independent laboratory proved that the antibacterial additives caused a reduction in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative). Mould resistance for the additive in C-Orthocryl Skinguard was confirmed under EN ISO 846 Method A.

Antibacterial thermoplastics are especially skin-friendly without any change in physical characteristics and forming properties. It must be explicitly noted that the antibacterial thermoplastics for prosthetic and check sockets are not intended for infection prevention.

Sanitized® is a registered trademark of Sanitized AG.
SilverShield® is a registered trademark of North Sea Plastics.
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<td>Antibacterial ThermoLyn PP-H</td>
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<td>Test KAFO:</td>
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<td>Antibacterial ThermoLyn clear</td>
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<tr>
<td>Antibacterial ThermoLyn PP-H</td>
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<td>Antibacterial ThermoLyn PE 200</td>
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<td>Wrist orthosis:</td>
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<td>TLSO:</td>
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<tr>
<td>Antibacterial ThermoLyn PE 200</td>
<td>30</td>
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</tbody>
</table>
### Notes* on the areas of application and temperature recommendations** for thermoplastics

This table shows the ideal heating temperature for each type of plastic.

* This information applies only to thermoplastic from Otto Bock HealthCare GmbH in Duderstadt, Germany.

** The temperatures specified here are only recommendations of Otto Bock HealthCare GmbH and must be adjusted for your individual heating devices.

*** Thermolyn Pedilon must be heated in a water bath at 60-°C/140°F.

For more information, please consult the Ottobock Materials Catalogue (646K1=GB) and the Ottobock Technical Product Information – Skinguard Thermoplastics and Lamination Resins for Prosthetics and Orthotics (646D11=GB).

<table>
<thead>
<tr>
<th>Application examples / Product names</th>
<th>Chemical composition</th>
<th>FO</th>
<th>Dynamic AFO</th>
<th>AFO</th>
<th>Nighttime splint</th>
<th>Test KAFO</th>
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<th>Orthosis strap</th>
<th>Wrist orthosis</th>
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<tbody>
<tr>
<td>Thermolyn Pedilon 618T73</td>
<td>LTT polyester</td>
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<td>Thermolyn PE 200 618T25, 618T56, 618T95</td>
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<td>Thermolyn soft, black 618T90</td>
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<td>Thermolyn Evoplex 618T70</td>
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<td>Thermolyn PETG clear 618T83</td>
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</table>
Notes on the areas of application and temperature recommendations

The temperatures specified here are only recommendations of Otto Bock HealthCare GmbH.

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617S229
Antibacterial Nora® Lunairmed
616T200
Antibacterial ThermoLyn rigid
616T112, 616T113
ThermoLyn supra flexible
616T16
Antibacterial ThermoLyn PP-H
616T59
ThermoLyn soft, clear
616T120
ThermoLyn clear
616T283
ThermoLyn EVA/LDPE SilverShield®
616T495
ThermoLyn Europlex
616T3
ThermoLyn PP-H
616T52
ThermoLyn EVA/LDPE SilverShield®
/MT50/MT48/MT49/MT48
/MT97/MT119/MT97/MT114/MT100
/MT50/MT48/MT49/MT48
/MT97/MT119/MT97/MT114/MT100
EVA with PE-HD 1000
composition

Chemical

FO Dynamic

Definitive inner socket for lower limb prostheses

- Ideal for clinical deployment!
- Easily malleable at low temperatures, ready for use on the body.
- Eliminates the time-consuming steps of fabricating casts and models,
- High resolving capacity when reheated.
- Good transparency.
- Good formability and flexibility.
- Low molecular weight, especially suitable for orthosis components
- That require tire stiffness,
- But high flexibility.
- Suitable for overlaminating of stacks for sockets.
- Good stiffness, low weight.
- Increased impact strength at low temperatures,
- Low tendency to white crack.
- Good shaping to orthotic joints.
- Good welding characteristics.
- Minor shrinkage.
- Easy to dye with Ottobock thermopapers.

- High strength and stiffness.
- High thermoplastic dimensional stability,
- Reduced impact strength.
- Easy to dye with Ottobock thermopapers.
- Can be combined with, e.g., Plastazote.

- Homogeneous thermoplastic material.
- High stiffness.
- Sufficient welding characteristics.
- Good heating characteristics.
- Good adhesives properties.
- Color shrinkage.
- Can be over-laminated to secure adapters, e.g., ANSAR Joint Screws and DELI Joint Bolts.
- As an overlapped joint with orthosis bushings.

- High-strength material.
- High abrasion resistance.
- Requires high force for deformation in a thermoplastic state.
- Can also be reheated when cold.
- Shaping is facilitated through use of vacuum-forming devices with
- Frequently used as stiffening linings for inner shoes.

- High stiffness.
- Low density for especially low weight.
- High tensile strength.
- Surface.
- High surface quality, can be subsequently thermofomed
- Comfortable to wear, washable.

- High transparency.
- Smooth surfaces.
- Low hardness at increased toughness.
- Can be over-laminated to secure adapters, e.g.,
- Inserts and pads for torso orthoses.

- Very high impact strength.
- Excellent vacuum-forming characteristics.
- Outstanding socket adhesion.
- Protects the liner.
- Used as the first layer in a definitive socket.
- Easy to put on with liner/soft socket, for example
- As part of the Harmony fitting.

- Good transparency.
- High impact strength.
- Excellent vacuum-forming characteristics.
- Shaping possible upon heating, e.g., using a hot air gun,
- Can be over-laminated to secure adaptations
- Color shrinkage.
- For fabrication of self-supporting test sockets and trial orthoses.

- High stiffness.
- High impact strength.
- Excellent vacuum-forming characteristics.
- Shaping possible upon heating, e.g., using a hot air gun,
- Can be over-laminated to secure adaptations
- Color shrinkage.
- For fabrication of self-supporting test sockets and trial orthoses.

- High surface quality.
- Can be subsequently thermofomed
- Comfortable to wear.
- Readily washable.
- High shrinkage if cooling rate is too high.
- For fabrication of flexible inner sockets for lower limb prosthetics.

- translucent.
- High surface quality.
- Can be subsequently thermofomed.
- Comfortable to wear.
- Readily washable.
- High shrinkage if cooling rate is too high.
- For fabrication of flexible inner sockets for upper limb prosthetics.
This table shows the ideal heating temperature for each type of plastic.

* This information applies only to thermoplastic from Otto Bock HealthCare GmbH in Duderstadt, Germany.

** The temperatures specified here are only recommendations of Otto Bock HealthCare GmbH and must be adjusted for your individual heating devices.

*** ThermoLyn Pedilon must be heated in a water bath at 60°C/140°F.

For more information, please consult the Ottobock Materials Catalogue (84461r=GB) and the Ottobock Technical Product Information – Skinguard Thermoplastics and Lamination Resins for Prosthetics and Orthotics (8446213r=GB).

<table>
<thead>
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<tr>
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<td>EVA with Silicone</td>
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<td>Ionomer</td>
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<td>ThermoLyn supra flexible 616T112, 616T113</td>
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</tbody>
</table>

Thermoplastics with antibacterial effectiveness | Skinguard technology

- **Antibacterial ThermoLyn PP-H 616T420**
  - Chemical composition: PP-H
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial ThermoLyn PE 200 616T485**
  - Chemical composition: PE-HD 200
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial ThermoLyn PETG clear 616T483**
  - Chemical composition: Copolyester
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial ThermoLyn clear 616T283**
  - Chemical composition: Copolyester
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial ThermoLyn rigid 616T252**
  - Chemical composition: Styrene-butadiene
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial ThermoLyn soft, clear 616T253**
  - Chemical composition: EVA
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial ThermoLyn soft, skin colour 616T269**
  - Chemical composition: EVA
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **ThermoLyn SilverShield® 616T200**
  - Chemical composition: EVA/LDPE
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Pedilon SilverShield® 6175203**
  - Chemical composition: PE foam, closed-cell
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

- **Antibacterial Nora® Lunamed 6175229**
  - Chemical composition: EVA copolymer, closed-cell
  - **FO**: ✓
  - **Dynamic AFO**: ✓
  - **AFO**: ✓
  - **Nighttime splint**: ✓
  - **Test KAFO**: ✓
  - **KAFO**: ✓
  - **Orthosis strap**: ✓
  - **Wrist orthosis**: ✓

Please note that the actual colours of the individual thermoplastics may differ from the colours shown in the table.
<table>
<thead>
<tr>
<th>Area of application</th>
<th>Heating plate</th>
<th>Connection area</th>
<th>Infrared oven</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes on the areas of application and temperature recommendations</td>
<td>–</td>
<td>–</td>
<td>100–120 °C / 212–266 °F</td>
</tr>
</tbody>
</table>

**ThermoLyn Pedilon**
- Must be heated in a water bath at 60 °C/140 °F
- For more information, please consult the Ottobock Materials Catalogue (646K1=GB)

### ThermoLyn PE 200
- **Notes:**
  - High strength and stiffness
  - High thermoplastic dimensional stability
  - Reduced impact strength
  - Easy to dye with Ottobock thermoplastics
  - Ideal for highly stressed orthotic components, e.g., polyethylene orthoses

### Antibacterial Nora® Lunairmed
- **Notes:**
  - Good transparency
  - Shaping is facilitated through use of vacuum-forming devices

### ThermoLyn supra soft plus Silicone
- **Notes:**
  - Good vacuum-forming capability
  - Especially suitable for highly stressed orthotic components

### Antibacterial ThermoLyn soft,
- **Notes:**
  - Good sanding characteristics
  - Good transparency
  - Ideal for clinical deployment!

### ThermoLyn clear
- **Notes:**
  - Good heating characteristics
  - Low tendency to white crack
  - Good transparency

### ThermoLyn PETG clear
- **Notes:**
  - Good formability and flexibility
  - High adhesive strength
  - Thermofomed at low temperatures

SilverShield® is a registered trademark of North Sea Plastics, Nora® is a registered trademark of Freudenberg.
Lower Limb Prosthetics
Check Socket

Antibacterial ThermoLyn rigid (Styrene-butadiene)
The antibacterial interim material ThermoLyn rigid is used as a temporary measure in the fabrication of self-supporting check sockets in order to provide an expedient interim solution for the time between the preliminary and definitive fitting. Implementing the right measures at the right time can frequently prevent subsequent complications and limitations. In addition to consistent medical monitoring of the wound healing process after the operation, care of the residual limb is especially important. The use of the antibacterial interim material ThermoLyn rigid is intended to protect the skin and prosthetic socket against a wide range of different microorganisms right from the outset.

Advantages at a glance
• Effective long-term antibacterial characteristics of the thermoplastics
• Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
• Efficient reduction of odour formation
• Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
• No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of the antibacterial substance

Order example:
<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
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<tr>
<td>616T252</td>
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</table>

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Sheet size x thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T252</td>
<td>600 x 600 x 12</td>
</tr>
</tbody>
</table>

Advantages at a glance
• Suitable for the fabrication of self-supporting TT, TF and HD test sockets (for temporary use)
• The proven, classic material for fabricating test sockets!
• Antibacterial effect
• Transparency of the check socket facilitates precise verification of the fit and skin discoloration on the residual limb
• High stiffness
• Good fracture resistance
• High thermoplastic dimensional stability
• High resistance to the formation of stress cracks
• Extremely high impact strength
• Low shrinkage: approx. 1 %
• Can be over-laminated to secure adapters
• Minor shrinkage
• Temperature recommendation: 170 °C / 338 °F (convection oven), 170 °C/338 °F (infrared oven)

Order example:
<table>
<thead>
<tr>
<th>Reference number</th>
<th>Sheet size (length x width) x thickness</th>
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</thead>
<tbody>
<tr>
<td>616T252</td>
<td>600 x 600 mm 12 mm, 15 mm clear</td>
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</table>

Order example:
<table>
<thead>
<tr>
<th>Reference number</th>
<th>Sheet size (length x width) x thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T252</td>
<td>600 x 600 mm 12 mm, 15 mm clear</td>
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Order example:
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<tr>
<th>Reference number</th>
<th>Sheet size (length x width) x thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T252</td>
<td>600 x 600 mm 12 mm, 15 mm clear</td>
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In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn rigid caused a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).

**Effectiveness of antibacterial ThermoLyn rigid according to the JIS Z 2801 standard**

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
<th>Initial dose</th>
<th>ThermoLyn rigid after 24 hours</th>
<th>Antibacterial ThermoLyn rigid after 24 hours</th>
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</thead>
<tbody>
<tr>
<td>Escherichia coli</td>
<td><img src="#" alt="Graph" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td><img src="#" alt="Graph" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 JIS (Japanese Industrial Standard), Z 2801, March 2008.
Antibacterial ThermoLyn clear (Copolyester)
Antibacterial ThermoLyn clear is used in the fabrication of self-supporting check sockets (for temporary use). In addition, the material is used for the fabrication of scar compression masks and trial orthoses. The transparency of the material facilitates precise verification of the fit and skin discolouration. Good fracture resistance, extremely high impact strength and high dimensional stability are further advantages of this thermoplastic. The antibacterial additive protects the end product from a wide spectrum of different microorganisms and ensures pleasant wearing characteristics and skin comfort.

Order example:

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T283</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference number</th>
<th>616T283</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the fabrication of</td>
<td>Trial orthoses</td>
</tr>
<tr>
<td>Sheet size (length x width)</td>
<td>400 x 400 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>8 mm</td>
</tr>
<tr>
<td>Colour</td>
<td>clear</td>
</tr>
</tbody>
</table>

Advantages at a glance
- For fabricating scar compression masks, trial orthoses and self-supporting check sockets (for temporary use)
- Antibacterial effect
- Transparent
- Good fracture resistance
- Very high impact strength
- High dimensional stability
- Low shrinkage: approx. 1%
- Can be over-laminated to secure adapters
- Minor shrinkage
- Temperature recommendation: 165 °C/329 °F (hotplate), 165 °C/329 °F (convection oven), 165 °C/329 °F (infrared oven)
- Practical recommendation: For working edges we recommend hot air or 634A80 SuperSkin Cleaning Agent

Antibacterial ThermoLyn clear is used in the fabrication of self-supporting check sockets (for temporary use). In addition, the material is used for the fabrication of scar compression masks and trial orthoses. The transparency of the material facilitates precise verification of the fit and skin discolouration. Good fracture resistance, extremely high impact strength and high dimensional stability are further advantages of this thermoplastic. The antibacterial additive protects the end product from a wide spectrum of different microorganisms and ensures pleasant wearing characteristics and skin comfort.

Order example:

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T283</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference number</th>
<th>616T283</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the fabrication of</td>
<td>Trial orthoses</td>
</tr>
<tr>
<td>Sheet size (length x width)</td>
<td>400 x 400 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>8 mm</td>
</tr>
<tr>
<td>Colour</td>
<td>clear</td>
</tr>
</tbody>
</table>

Advantages at a glance
- Effective long-term antibacterial characteristics of the thermoplastics
- Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
- Efficient reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of the antibacterial substance
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn clear caused a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).

**Effectiveness of the antibacterial ThermoLyn clear according to the JIS Z 2801 standard**

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000,000</td>
</tr>
<tr>
<td>10,000,000</td>
</tr>
<tr>
<td>1,000,000</td>
</tr>
<tr>
<td>100,000</td>
</tr>
<tr>
<td>10,000</td>
</tr>
<tr>
<td>1,000</td>
</tr>
<tr>
<td>100</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

**Initial dose**

**ThermoLyn clear after 24 hours**

**Antibacterial ThermoLyn clear after 24 hours**

- **Escherichia coli**
- **Staphylococcus aureus**

---

2 JIS (Japanese Industrial Standard), Z 2801, May 2011.
Lower Limb Prosthetics
Inner Prosthetic Socket

**Antibacterial ThermoLyn soft (Ethyl vinyl acetate)**
Antibacterial ThermoLyn soft is used for the fabrication of flexible prosthetic sockets in lower limb prosthetics. It protects the prosthetic socket against a wide range of different microorganisms. This material is characterised by high flexibility and good rupture resistance. Other features of this thermoplastic include good vacuum-forming characteristics and transparency.

**Order example:**

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T253</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Sheet size (length x width)</th>
<th>Thickness</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T253</td>
<td>400 x 400 mm</td>
<td>8 mm, 10 mm, 12 mm, 15 mm</td>
<td>clear</td>
</tr>
</tbody>
</table>

**Advantages at a glance**
- Suitable for fabricating flexible inner prosthetic sockets in lower limb prosthetics
- Antibacterial effect
- Clear
- High flexibility
- High surface quality
- Low shrinkage: approx. 3 %
- Can be subsequently thermoformed
- Comfortable to wear
- Readily washable
- Temperature recommendation: 160 °C / 320 °F (convection oven), 160 °C / 320 °F (infrared oven)

- 646F265=GB
- 646D695=EN
- 646D300=GB

**Advantages at a glance**

- Effective long-term antibacterial characteristics of the thermoplastics
- Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
- Efficient reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of the antibacterial substance
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn soft (Ethyl vinyl acetate) causes a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).¹

**Effectiveness of antibacterial ThermoLyn soft (Ethyl vinyl acetate) according to the JIS Z 2801 standard**⁴

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
<th>Initial dose</th>
<th>ThermoLyn soft after 24 hours</th>
<th>Antibacterial ThermoLyn soft after 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

³ Laboratory in Japan, A.C. Barclay, August 2005.
⁴ JIS (Japanese Industrial Standard), Z 2801, March 2008.
Lower Limb Prosthetics
Inner Prosthetic Socket

ThermoLyn SilverShield® (Ethyl vinyl acetate)
ThermoLyn SilverShield® (Ethyl vinyl acetate) protects the prosthetic socket against a wide range of different microorganisms. The benefit for the user is that discolouration and odour caused by microbes are considerably reduced and that the lifespan of the socket is extended. These additives thus provide for more pleasant wearing characteristics and improved skin comfort.

Advantages at a glance
• Suitable for fabricating flexible inner prosthetic sockets in lower limb prosthetics
• Antibacterial effect
• Very high flexibility
• Very low shrinkage (approx. 1 %), due to pressed thermoplastic material
• Pleasant wearing characteristics and skin comfort
• Temperature recommendation: 150 °C/302 °F (convection oven), 150 °C/302 °F (infrared oven)
• Practical recommendation: Place wet plaster cast in the oven. Prior to vacuum forming, coat the model with 633F50 Silicone Grease.

Order example:

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T200</td>
<td>≈ 9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference number</th>
<th>616T200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet size (length x width)</td>
<td>400 x 400 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>9 mm, 12 mm, 16 mm</td>
</tr>
<tr>
<td>Colour</td>
<td>natural colour</td>
</tr>
</tbody>
</table>

Advantages at a glance
- Effective long-term antibacterial characteristics thanks to the continuous release of silver ions
- Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
- Efficient reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of antibacterial silver
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn SilverShield (Ethyl vinyl acetate) causes a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).5

**Effectiveness of ThermoLyn SilverShield® (Ethyl vinyl acetate) according to the JIS Z 2801 standard**6

Number of viable bacteria

<table>
<thead>
<tr>
<th></th>
<th>Initial dose</th>
<th>Neutral ThermoLyn after 24 hours</th>
<th>ThermoLyn SilverShield® after 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staphylococcus aureus</td>
<td>10,000</td>
<td>1,000</td>
<td>10</td>
</tr>
<tr>
<td>Escherichia coli</td>
<td>100,000,000</td>
<td>100,000</td>
<td>1</td>
</tr>
</tbody>
</table>

SilverShield® is a registered trademark of North Sea Plastics.

5 Laboratory in Japan, A.C. Barclay, August 2005.

Lower/Upper Limb Prosthetics
Inner Prosthetic Socket

C-Orthocryl Skinguard
The Sanitized® additive is integrated into the innovative C-Orthocryl Skinguard. Sanitized® protects the product against a broad spectrum of different microorganisms by use of an antibacterial additive. Thanks to the ability to attack the membrane of microorganisms, the antibacterial additive reduces their uptake of nutrients which impairs growth. Membrane damage caused by the antibacterial additive also results in the leakage of cellular fluid, causing the bacteria to die.

Advantages at a glance
• Lamination resin for all types of casting resin work
• Especially suited to carbon fibre technology
• Antibacterial effect
• Ready for use
• Casting carbon on carbon, no filter layers are required
• Facilitates fabricating components with a low proportion of resin
• Optimum ratio of matrix to reinforcing materials
• Practical recommendation: Only use 616F4 PVA sheeting and/or the 99B81 PVA bag for foil casting

646D300=GB
646F351=EN
646D695=EN

C-Orthocryl Skinguard
The Sanitized® additive is integrated into the innovative C-Orthocryl Skinguard. Sanitized® protects the product against a broad spectrum of different microorganisms by use of an antibacterial additive. Thanks to the ability to attack the membrane of microorganisms, the antibacterial additive reduces their uptake of nutrients which impairs growth. Membrane damage caused by the antibacterial additive also results in the leakage of cellular fluid, causing the bacteria to die.

Advantages at a glance
• High and long-lasting effectiveness of the antibacterial substances
• Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the AATCC 147:2004 standard
• Resistance to moulds in accordance with EN ISO 846 Method A
• Efficient reduction of odour formation
• Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
• No impairment of physical characteristics and forming properties by the addition of antibacterial substances

Sanitized® is a registered trademark of Sanitized AG.

<table>
<thead>
<tr>
<th>Article number</th>
<th>617H255=0.900</th>
<th>617H255=4.600</th>
<th>617H255=25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net contents</td>
<td>0.90 kg</td>
<td>4.60 kg</td>
<td>25 kg</td>
</tr>
<tr>
<td>Resin 100</td>
<td>: Hardener 2-3</td>
<td>: Resin Colour Paste 3</td>
<td>Danger</td>
</tr>
</tbody>
</table>

Sanitized® is a registered trademark of Sanitized AG.
**Lower Limb Prosthetics**

**Soft inner socket**

**Pedilin SilverShield®**
Pedilin SilverShield® protects the skin and the prosthetic socket against a wide range of different microorganisms. The benefit for the user is that discolouration and odour caused by microbes are considerably reduced and that the lifespan of the socket is extended. These additives thus provide for more pleasant wearing characteristics and improved skin comfort.

---

**Advantages at a glance**

- Highly recommended for fabricating soft inner sockets and as a padding material for prosthetic sockets
- The proven classic material for soft sockets!
- 617S203 is suitable for fabricating redression helmets
- Antibacterial effect
- PE foam, closed-cell
- Hardness approx. Shore A 35 (proven Shore hardness for fabricating soft sockets)
- Density approx. 140 kg/m³
- High resilience
- Good thermoforming properties
- Good adhesive characteristics
- Good sanding characteristics
- Washable
- Temperature recommendation: 130 °C / 266 °F (hotplate), 130 °C / 266 °F (convection oven)

**Order example:**

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>617S203</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference number</th>
<th>617S203</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet size (length x width)</td>
<td>1050 x 1050 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>3 mm, 4 mm, 5 mm, 6 mm, 10 mm</td>
</tr>
<tr>
<td>Colour</td>
<td>skin colour</td>
</tr>
</tbody>
</table>

---

**Pedilin SilverShield**
Pedilin SilverShield® protects the skin and the prosthetic socket against a wide range of different microorganisms. The benefit for the user is that discolouration and odour caused by microbes are considerably reduced and that the lifespan of the socket is extended. These additives thus provide for more pleasant wearing characteristics and improved skin comfort.

---

**Advantages at a glance**

- Effective long-term antibacterial characteristics thanks to the continuous release of silver ions
- Effective against a wide range of pathogenic bacteria such as *Staphylococcus aureus* (gram-positive) and *Escherichia coli* (gram-negative) as specified by the JIS Z 2801 standard
- Efficient reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties by the addition of antibacterial silver

---

20 Ottobock | Skinguard Thermoplastics and Lamination Resins
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that Pedilin SilverShield® causes a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).\(^7\)

### Effectiveness of Pedilin SilverShield® according to the JIS Z 2801 standard\(^6\)

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
<th>Staphylococcus aureus</th>
<th>Escherichia coli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial dose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral Pedilin after 24 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedilin SilverShield® after 24 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SilverShield® is a registered trademark of North Sea Plastics.

\(^7\) Laboratory in Japan, A.C. Barclay, August 2005.

\(^6\) JIS (Japanese Industrial Standard), Z 2801, March 2008.
Antibacterial ThermoLyn PETG clear (Copolyester)
Antibacterial ThermoLyn PETG clear can be used for all liner fittings with/without distal connection. It is used as the first layer in definitive sockets, e.g., for Harmony fittings, but is also suitable for all transfemoral fittings with/without liner. Antibacterial ThermoLyn PETG clear is a shatter-proof copolyester. The extremely high impact resistance and excellent thermoforming properties make this an ideal material for numerous orthopaedic technology applications. The benefit of the antibacterial additive for the user is that odour and discoloration caused by microbes are considerably reduced and that the lifespan of the product is extended. The additives assure pleasant wearing characteristics and enhanced skin comfort.

Advantages at a glance
• For all liner fittings with/without distal connection
• Used as the first layer in definitive sockets, e.g., for Harmony fittings
• For transfemoral fittings with/without liners
• Antibacterial effect
• Highly transparent
• Shatter proof
• High impact strength
• Low shrinkage: approx. 1%
• After the check socket has been transferred, the plaster requires no drying
• Moist plaster requires no isolation for laminating
• PETG replaces the inside sheeting
• Very smooth inner surface
• Makes donning easier and increases the service life of the liner/soft socket/sealing sleeve
• Temperature recommendation: 170 °C /338 °F (convection oven), 160 °C /320 °F (infrared oven)
• Practical recommendation: Coat the model with 633F50 Silicone Grease
• Practical recommendation: For working edges we recommend hot air or 634A80 SuperSkin Cleaning Agent

<table>
<thead>
<tr>
<th>Article number</th>
<th>616T483=3</th>
<th>616T483=5</th>
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<tbody>
<tr>
<td>Sheet size (length x width)</td>
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<td>400 x 400 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>3 mm</td>
<td>5 mm</td>
</tr>
<tr>
<td>Colour</td>
<td>clear</td>
<td>clear</td>
</tr>
</tbody>
</table>

Advantages at a glance
- Effective long-term antibacterial characteristics of the thermoplastics
- Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
- Effective reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties of thermoplastic materials
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn PETG clear caused a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).

**Effectiveness of antibacterial ThermoLyn PETG clear according to the JIS Z 2801 standard**

![Graph showing the effectiveness of antibacterial properties over time](image)

- **Number of viable bacteria**
- **Types of bacteria:** Escherichia coli, Staphylococcus aureus
- **Initial dose:**
  - Escherichia coli: 1,000,000
  - Staphylococcus aureus: 100,000
- **ThermoLyn clear after 24 hours:**
  - Escherichia coli: 10,000
  - Staphylococcus aureus: 100
- **Antibacterial ThermoLyn clear after 24 hours:**
  - Escherichia coli: 1
  - Staphylococcus aureus: 1

*JIS (Japanese Industrial Standard), Z 2801, May 2011.*
Upper Limb Prosthetics
Inner Prosthetic Socket

**Antibacterial ThermoLyn soft (Ethyl vinyl acetate)**
Skin colour antibacterial ThermoLyn soft is used for the fabrication of flexible prosthetic sockets in upper limb prosthetics. It protects the prosthetic socket against a wide range of different microorganisms. The antibacterial effect, high flexibility and suppleness of skin colour ThermoLyn soft enhance wearer comfort and therefore the useful life of the prosthesis. This translucent, skin-coloured material features optimum matching with the natural skin colour of the prosthesis wearer. The material characteristics offer ease of processing and a high level of comfort for the wearer.

**Advantages at a glance**
- Suitable for fabricating flexible prosthetic sockets in upper limb prosthetics
- Antibacterial effect
- Translucent
- High flexibility in the area of the socket edges
- High surface quality
- Low shrinkage: approx. 3%
- Can be subsequently thermoformed
- Comfortable to wear
- Readily washable
- Temperature recommendation: 150 °C / 302 °F (convection oven), 150 °C / 302 °F (infrared oven)
- Practical recommendation: We recommend using the 503F3 Socket Screw with Allen Head in combination with the 29C3 or 29C5 Setting Nut.

**Order example:**

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T269</td>
<td>6</td>
</tr>
</tbody>
</table>

**Reference number**

**616T269**

Sheet size (length x width): 400 x 400 mm
Thickness: 6 mm, 8 mm, 10 mm, 12 mm
Colour: skin colour

**Advantages at a glance**
- Effective long-term antibacterial characteristics of the thermoplastics
- Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
- Efficient reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of the antibacterial substance
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn soft (Ethyl vinyl acetate) causes a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).¹⁰

**Effectiveness of antibacterial ThermoLyn soft (Ethyl vinyl acetate) according to the JIS Z 2801 standard¹¹**

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
<th>Initial dose</th>
<th>ThermoLyn soft after 24 hours</th>
<th>Antibacterial ThermoLyn soft after 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹⁰ Laboratory in Japan, A.C. Barclay, August 2005.
Orthotics
FO, Dynamic AFO, AFO, KAFO

Antibacterial ThermoLyn PP-H
(Polypropylene homopolymer)
Antibacterial ThermoLyn PP-H protects the orthosis against a wide range of different microorganisms and is used for the fabrication of shape-retaining orthosis components, e.g. in paralysis orthoses, Dynamic AFO and Ankle seven. This synthetic material features high deformation stability and a reduced impact value. The low impact value means great care must be taken during machining in order to avoid brittle fractures (stress concentration).

Advantages at a glance
• For shape-retaining orthosis components, e.g. paralysis orthoses, Dynamic AFO and Ankle seven
• Antibacterial effect
• High stiffness
• High strength
• High thermoplastic dimensional stability
• Reduced shrinkage: approx. 7%
• Can be reinforced with 617R11=PP Thermoprepreg PP
• Easy to dye with Ottobock thermopapers
• Temperature recommendation: 215 °C/419 °F (hotplate), 185 °C/365 °F (convection oven), 185 °C/365 °F (infrared oven)
• Practical recommendation: The low impact value means great care must be taken during machining in order to avoid brittle fractures (stress concentration).

Order example:
<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T420</td>
<td>2</td>
</tr>
</tbody>
</table>

Reference number 616T420
Sheet size (length x width) 2,000 x 1,000 mm
Thickness 2 mm, 3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 15 mm
Colour natural colour

Advantages at a glance
○ Effective long-term antibacterial characteristics of the thermoplastics
○ Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
○ Efficient reduction of odour formation
○ Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
○ No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of the antibacterial substance
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn PP-H caused a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).

Effectiveness of antibacterial ThermoLyn PP-H according to the JIS Z 2801 standard\textsuperscript{12}

Number of viable bacteria

\begin{figure}
\centering
\includegraphics[width=\textwidth]{effectiveness_graph.png}
\caption{Effectiveness of antibacterial ThermoLyn PP-H according to the JIS Z 2801 standard.}
\end{figure}

\begin{itemize}
\item Initial dose
\item ThermoLyn PP-H after 24 hours
\item Antibacterial ThermoLyn PP-H after 24 hours
\end{itemize}

\begin{itemize}
\item Escherichia coli
\item Staphylococcus aureus
\end{itemize}

\textsuperscript{12} JIS (Japanese Industrial Standard), Z 2801:2000, July 2009.
Orthotics

FO

Advantages at a glance
- Particularly recommendable for padding FOs
- Individual padding when indicated for heel spur
- For fitting diabetics
- Antibacterial effect
- EVA copolymer, closed-cell
- Hardness approx. shore A 18
- Density approx. 80 kg/m³
- Good padding characteristics
- Highly elastic
- Good adhesive characteristics - ideal for combining with other padding materials!
- Good sanding characteristics
- Washable
- Temperature recommendation: 120 ºC – 130 ºC / 248 ºF – 266 ºF (hotplate), 120 ºC – 130 ºC / 248 ºF – 266 ºF (convection oven)

Antibacterial Nora® Lunairmed
Compared to our proven Nora® Lunairmed, additives with an ionising effect have been integrated into the innovative antibacterial Nora® Lunairmed. These additives with antibacterial effect are anchored to the substrate through their size and composition, and therefore cannot escape from the material. They are effective for many different microorganisms such as bacteria and fungi. Because the additive remains in the material, its effect continues for years. The closed cell structure of the antibacterial Nora® Lunairmed stops bacteria and fungi from entering the material; in addition, the antibacterial effect of the padding material stops bacteria and fungi from settling on the material surface.

Advantages at a glance
- High and long-lasting effectiveness of the antibacterial substances
- Efficiency against a broad spectrum of pathogenic bacteria and fungi
- Effective reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- Antibacterial substance exhibits no adverse effect on physical properties as well as forming properties

<table>
<thead>
<tr>
<th>Article number</th>
<th>617S229=3</th>
<th>617S229=6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet size (length x width)</td>
<td>980 x 640 mm</td>
<td>980 x 640 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>3 mm</td>
<td>6 mm</td>
</tr>
<tr>
<td>Colour</td>
<td>skin colour</td>
<td>skin colour</td>
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</tbody>
</table>
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial Nora® Lunairmed caused a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive), Escherichia coli (gram-negative) and Pseudomonas aeruginosa (gram-negative).

**Effectiveness of the antibacterial Nora® Lunairmed according to the JIS Z 2801 standard**

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
<th>Initial dose</th>
<th>Nora® Lunairmed after 24 hours</th>
<th>Antibacterial Nora® Lunairmed after 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudomonas aeruginosa</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nora® is a registered trademark of Freudenberg.

Orthotics

Positioning Orthosis, KAFO, Wrist Hand Orthosis, TLSO

Antibacterial ThermoLyn PE 200 (Polyethylene 200)
Antibacterial ThermoLyn PE 200 protects the orthosis against a wide range of different microorganisms and is suitable for the fabrication of orthoses, e.g. positioning orthoses and KAFOs. The hard polyethylene features good welding and grinding characteristics as well as low shrinkage.

Advantages at a glance
• For the fabrication of orthoses
• Antibacterial effect
• Hard polyethylene
• Low molecular weight
• Good welding characteristics
• Good sanding characteristics
• Minor shrinkage
• Can be combined with, for example, 617S7/617S8 Plastazote®
• Low shrinkage approx. 8 %
• Can be reinforced using 617R11=PE Thermoprepreg PE
• Easy to dye with Ottobock thermopapers
• Temperature recommendation: 180 °C/356 °F (hotplate), 165 °C/329 °F (convection oven), 165 °C/329 °F (infrared oven)

Order example:

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>616T495</td>
<td>= 2</td>
</tr>
</tbody>
</table>

Reference number 616T495
Sheet size (length x width) 2,000 x 1,000 mm
Thickness 2 mm, 3 mm, 4 mm, 6 mm, 8 mm, 10 mm, 12 mm
Colour natural colour

Advantages at a glance
- Effective long-term antibacterial characteristics of the thermoplastics
- Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard
- Efficient reduction of odour formation
- Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)
- No impairment of physical characteristics and forming properties of thermoplastic materials by the addition of the antibacterial substance

646F265=GB
646D300=GB
646D695=EN
In accordance with the specifications of the JIS Z 2801 standard, an independent laboratory proved that antibacterial ThermoLyn PE 200 caused a reduction of 99.9% in bacteria colonies of Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative).

**Effectiveness of antibacterial ThermoLyn PE 200 according to the JIS Z 2801 standard**

<table>
<thead>
<tr>
<th>Number of viable bacteria</th>
<th>Initial dose</th>
<th>ThermoLyn PE 200 after 24 hours</th>
<th>Antibacterial ThermoLyn PE 200 after 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,000,000</td>
<td>100,000,000</td>
<td>1000</td>
</tr>
<tr>
<td>Escherichia coli</td>
<td>10,000</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td>100,000,000</td>
<td>10,000,000</td>
<td>10</td>
</tr>
</tbody>
</table>

Plastazote® is a registered trademark of Zotefoams.

Features & Benefits

• High and long-lasting effectiveness of the antibacterial substances

• Effective against a wide range of pathogenic bacteria such as Staphylococcus aureus (gram-positive) and Escherichia coli (gram-negative) as specified by the JIS Z 2801 standard and the AATCC 147:2004 standard

• Resistance to moulds according to EN ISO 846 Method A (applies to C-Orthocryl Skinguard)

• Efficient reduction of odour production

• Extremely skin-friendly (dermatologically tested, SGS Institut Fresenius GmbH Deutschland)

• No impairment of physical characteristics and forming properties by the addition of antibacterial substances
## Skinguard Thermoplastics and Lamination Resins

Please send fax orders to the number of the relevant Ottobock company listed at the end of this product information.

### Customer Information

<table>
<thead>
<tr>
<th>Customer no.</th>
<th>Company</th>
<th>Street</th>
<th>Postal code/city</th>
<th>Prosthetist/orthotist</th>
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### Shipping Address (if different from customer address)

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<th>Company</th>
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### Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Article Number</th>
<th>Colour</th>
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### Comments

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Skinguard Thermoplastics and Lamination Resins

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<table>
<thead>
<tr>
<th>Description</th>
<th>Article Number</th>
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<tbody>
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## Skinguard Thermoplastics and Lamination Resins

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### Customer Shipping address (if different from customer address)

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</tr>
<tr>
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### Description Article Number Colour Order quantity

<table>
<thead>
<tr>
<th>Description</th>
<th>Article Number</th>
<th>Colour</th>
<th>Order quantity</th>
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<td>ThermoLyn SilverShield®</td>
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### Description Article Number Net contents Order quantity

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<th>Net contents</th>
<th>Order quantity</th>
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<tbody>
<tr>
<td>C-Orthocryl Skinguard</td>
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<td>617H255=4.600</td>
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<tr>
<td></td>
<td>617H255=25</td>
<td>25 kg</td>
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### Comments Company stamp/signature

<table>
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