

*Osso Bock*<sup>®</sup>

QUALITY FOR LIFE



# Thermoplastics

with antibacterial effectiveness

Information for Practitioners





# Thermoplastics with antibacterial effectiveness

## Skin-friendly – Antibacterial – Neutral Odour

Thermoplastics with antibacterial effectiveness protect the skin and the socket of your prosthesis against a wide range of microorganisms. The benefits for the user are a significant decrease in the build-up of odour and discolouration from microbes, and a longer service life for the socket. These supplements thus make it more enjoyable to wear the prosthesis and improve skin comfort.



# Thermoplastics with antibacterial effectiveness

## How it Works:

Antibacterial substances such as silver are integrated into the material during production. The silver ions immediately interact with bacteria as soon as they come into contact with moisture, which substantially interferes with the reproduction of various microorganisms. This prevents the bacteria population from increasing in the material.

Thermoplastics with this antibacterial effectiveness offer a particularly good skin tolerance without changing the physical as well as the forming properties.

### Benefits at a Glance

- Strong and long-lasting effect of antibacterial plastics through continuous release of silver ions
- Efficacy against a broad spectrum of pathogenic bacteria such as *Staphylococcus aureus* (gram positive) and *Escherichia coli* (gram negative) according to the specification of the JIS Z 2801 Standard
- Efficiently helps reduce production of odor
- Skin friendly
- Dermatologically tested (by SGS Institut Fresenius GmbH Deutschland)
- Antibacterial silver substance exhibits no adverse effect on physical properties or thermoplastic formability

## Pedilin®<sup>4</sup> SilverShield®

- Antibacterial efficacy through the SilverShield® Technology
- Tan or white colors
- Non-perforated
- Density 140 kg/m<sup>3</sup>
- Thermoplastically formable at 130 °C (266 °F)
- Suitable for fabrication of soft inner sockets



Article no.	Sheet size	Color	Thickness
<b>617S203=3</b>	1050 x 1050 mm (41.34 x 41.34 in.)	tan	3 mm (.118 in.)
<b>617S203=4</b>	1050 x 1050 mm (41.34 x 41.34 in.)	tan	4 mm (.157 in.)
<b>617S203=5</b>	1050 x 1050 mm (41.34 x 41.34 in.)	tan	5 mm (.197 in.)
<b>617S203=6</b>	1050 x 1050 mm (41.34 x 41.34 in.)	tan	6 mm (.236 in.)
<b>617S206=3</b>	1050 x 1050 mm (41.34 x 41.34 in.)	white	3 mm (.118 in.)
<b>617S206=4</b>	1050 x 1050 mm (41.34 x 41.34 in.)	white	4 mm (.157 in.)
<b>617S206=5</b>	1050 x 1050 mm (41.34 x 41.34 in.)	white	5 mm (.197 in.)
<b>617S206=6</b>	1050 x 1050 mm (41.34 x 41.34 in.)	white	6 mm (.236 in.)

## ThermoLyn®<sup>4</sup> EVA/LDPE SilverShield®

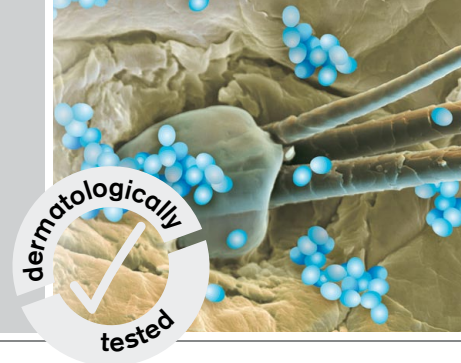
- Antibacterial efficacy through the SilverShield® Technology
- Natural color
- Flexible material
- Low shrinkage
- Thermoplastically formable at 150°C (302°F)
- Suitable for fabrication of flexible inner sockets



Article no.	Sheet size	Color	Thickness
<b>616T200=9</b>	400 x 400 mm (15.75 x 15.75 in.)	natural color	9 mm (.354 in.)
<b>616T200=12</b>	400 x 400 mm (15.75 x 15.75 in.)	natural color	12 mm (.472 in.)
<b>616T200=16</b>	400 x 400 mm (15.75 x 15.75 in.)	natural color	16 mm (.630 in.)

► Other sheet thicknesses available upon request.

# Silver Ions – for more Comfort



The antibacterial and odour-reducing properties of our thermoplastics result from the application of SilverShield® technology. This new kind of technology is being introduced into orthopaedic technology in cooperation with North Sea Plastics.

## What Is the SilverShield® Technology?

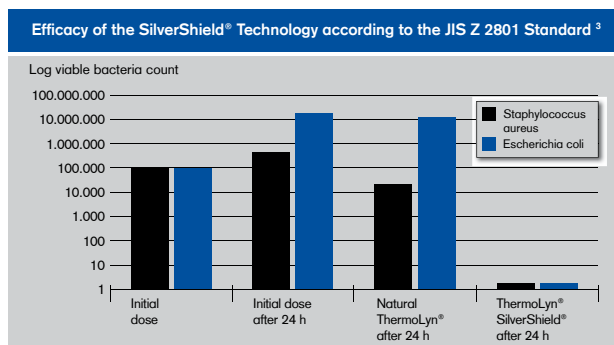
The SilverShield® technology<sup>1</sup> is the first antibacterial product range of thermoplastics available for orthopaedic application. SilverShield® plastics contain an antibacterial substance: Silver (Argentum). Thanks to its natural antibacterial activity, silver has been used for about 3000 years for various applications. In ancient Greece and Rome as well as during the Middle Ages it was used to disinfect water and store food. By the end of the 19th century silver had proven itself as an antibacterial substance. Since then the efficacy and safety of the metal has been well established.<sup>2</sup>

## Effective in Reducing Odor Production!

The SilverShield® technology achieves its antibacterial effect by manufacturing silver right into the plastics. The silver ions bonded to the plastics efficiently fight a wide spectrum of pathogenic bacteria and guarantee excellent skin tolerance. Additionally, the antibacterial effect makes SilverShield® plastics particularly suitable for reducing odor production. However, it should be emphasized that SilverShield® Technology is not aimed at infection prevention.

## How Does SilverShield® Technology Work?

When in contact with water molecules, SilverShield® plastics slowly release silver ions, exerting various antibacterial actions that prevent bacteria growth. Thanks to the continuous release of silver ions, a strong and long-lasting effect of antibacterial plastics is achieved. Independent lab tests according to the JIS Z 2801 Standard have proven that SilverShield® Technology caused a 99.9% reduction of Staphylococcus aureus (gram positive) and Escherichia coli (gram negative) bacteria strains.<sup>3</sup>



The physical properties as well as forming properties of the thermoplastics are not affected by the antibacterial silver substance. SilverShield® Technology is non-irritating to the skin and environmentally friendly.

<sup>1</sup> SilverShield® is registered trademark of North Sea Plastics.

<sup>2</sup> Russel A.D., Hugo W.B., Antimicrobial Activity and Action of Silver, Progress in Medicinal Chemistry, 31, 351-370, Elsevier Science 1994.

<sup>3</sup> Laboratory in Japan, A.C. Barclay, August 2005.

<sup>4</sup> Pedilin® and ThermoLyn® are registered trademarks of Otto Bock.

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Customer no.:	<input type="text"/>	Order no.:	<input type="text"/>	Date:	<input type="text"/>
<b>Shipping address</b>			<b>Invoice address</b> (if different from shipping address)		
Company	<input type="text"/>		Company	<input type="text"/>	
Street	<input type="text"/>		Street	<input type="text"/>	
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Phone:	<input type="text"/>		Phone:	<input type="text"/>	
Fax:	<input type="text"/>		Fax:	<input type="text"/>	

Quantity	Article no.	Colors	Number of sheets
Pedilin® SilverShield®	617S203=3	tan	<input type="text"/>
	617S203=4		<input type="text"/>
	617S203=5		<input type="text"/>
	617S203=6		<input type="text"/>
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	617S206=4		<input type="text"/>
	617S206=5		<input type="text"/>
	617S206=6		<input type="text"/>
ThermoLyn® EVA/LDPE SilverShield®	616T200=9	natural color	<input type="text"/>
	616T200=12		<input type="text"/>
	616T200=16		<input type="text"/>

<b>Notes</b>	<input type="text"/>	<b>Company stamp + Signature</b>
		<input type="text"/>



Please contact us if you have any further questions  
or would like to have more information.

Technical modifications reserved.

*Otto Bock*<sup>®</sup>

**QUALITY FOR LIFE**

**Otto Bock HealthCare GmbH**

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