

aortha[®] PE500 aortha[®] PE1000

High Density Polyethylene

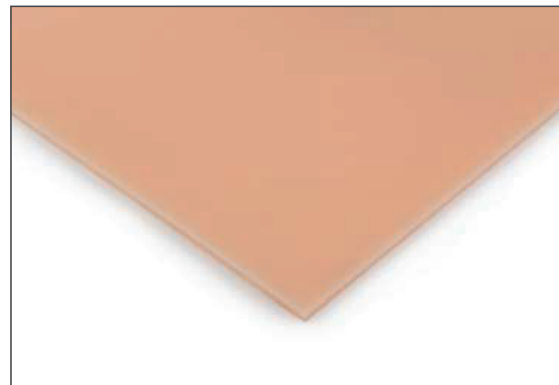
Aortha PE500 & PE1000 are lightweight **high density polyethylenes** with little to no memory. It is usually coupled with reinforcement to keep it's moulded contour.

The thickness required is selected by patient's weight or prescription instructions.

The Aortha PE500 provides tough rigid results with the Aortha PE1000 being very rigid when applied providing a much firmer finish making the material ideal for larger/heavier patients.

Our high molecular weight material is press moulded and provides very good impact and flexural strength.

Typical thermoforming temperatures: 160-185°C.



General features:

- ☒ Press moulded
- ☒ Very good impact strength
- ☒ Good flexural strength
- ☒ Produces strong, rigid orthoses

Applications:

AFOs, KAFOs, FFOs, Body Jackets

Availability: (PE1000)

Code	Sheet Size	Thickness	Colour
TA0152	1930 x 930mm	2mm	Beige ●
TA0153	1930 x 930mm	3mm	Beige ●
TA0154	1930 x 930mm	4mm	Beige ●
TA0155	1930 x 930mm	5mm	Beige ●
TA0656	1930 x 930mm	6mm	Beige ●

Availability: (PE500)

Code	Sheet Size	Thickness	Colour
TA0152	1930 x 930mm	2mm	Beige ●
TA0153	1930 x 930mm	3mm	Beige ●
TA0154	1930 x 930mm	4mm	Beige ●
TA0155	1930 x 930mm	5mm	Beige ●
TA0656	1930 x 930mm	6mm	Beige ●
TA0658	1930 x 930mm	8mm	Beige ●
TA0132	1930 x 930mm	2mm	Red ●
TA0133	1930 x 930mm	3mm	Red ●
TA0134	1930 x 930mm	4mm	Red ●
TA0635	1930 x 930mm	5mm	Red ●
TA0636	1930 x 930mm	6mm	Red ●

Availability: (PE500)

Code	Sheet Size	Thickness	Colour
TA0142	1930 x 930mm	2mm	Blue ●
TA0143	1930 x 930mm	3mm	Blue ●
TA0144	1930 x 930mm	4mm	Blue ●
TA0645	1930 x 930mm	5mm	Blue ●
TA0646	1930 x 930mm	6mm	Blue ●
TA0661	1930 x 930mm	1mm	Natural ○
TA0662	1930 x 930mm	2mm	Natural ○
TA0663	1930 x 930mm	3mm	Natural ○
TA0664	1930 x 930mm	4mm	Natural ○
TA0665	1930 x 930mm	5mm	Natural ○
TA0666	1930 x 930mm	6mm	Natural ○
TA0668	1930 x 930mm	8mm	Natural ○
TA0670	1930 x 930mm	10mm	Natural ○

Material Properties: (PE500)

Properties	Standard	Unit	
Average molecular weight (average Molecular mass)		(g/mol)	approx. $0.5 * 10^6$
Density	ISO 1183	(Kg/m ³)	950-957
Water Absorption at 23°C until saturation	ISO 62		<0.01
Tensile strength at yield (tensile strength)	ISO 527	(MPa)	> 20
Elongation at break	ISO 527	(%)	> 600
Tensile modulus	ISO 527	(MPa)	> 800
Impact strength (Charpy) at 23°C	ISO 179	(kJ/m ²)	no break
Notched impact strength (Charpy) at 23°C	ISO 11542-2	(kJ/m ²)	> 15
Ball indentation hardness	ISO 2039-1	(N/mm ²)	30-35
Shore Hardness D, 15 s value	ISO 868	(-)	63-68
Coefficient of friction	-	(-)	approx. 0.25
Abrasion (Sand-Slurry)	-	(%)	400
Melting Point DSC, 10 K/min	ISO 3146	(°C)	135-138
VICAT Softening Point	ISO 306	(°C)	80
Coefficient of linear thermal expansion between 23 and 180°C	ISO 11359	(K ⁻¹)	Approx. $2 * 10^{-4}$
Thermal Conductivity	ISO 52612	(w/[M * k])	Approx. 0.4
Use temperature (max)	-	(°C)	80
Use temperature (briefly)	-	(°C)	90
Use temperature (min)	-	(°C)	-30
Relative permittivity at 100 Hz	IEC 60250	(-)	2.9
Dissipation factor at 100 Hz	IEC 60250	(-)	$2.1 * 10^{-4}$
Volume Resistivity	IEC 60093	(Ohm * m)	> 10^{12}
Surface Resistivity	IEC 60093	(Ohm)	> 10^{12}
Dielectric Strength	IEC 60243	(kV/mm)	40
Food conformances according to			
EU Directive 2002/72/EC			Yes
FDA Regulation 21CFR177.1520			Yes
FDA Regulation 21CFR178.2010			N/A
FDA Regulation 21CFR178.3297			Yes

Notice to users:

The technical data shown in this data sheet refers to a 40mm thick sheet. Due to the production process the data may vary depending on the material thickness.

The information contained in this technical data sheet cannot be construed as a promise or guarantee of specific properties of our products. Any determination of the suitability of a particular material and part design for any use contemplated by the user is the sole responsibility of the user. The information contained in this technical data sheet is based on present knowledge and may be subject to change without further notice.

Material Properties: (PE1000)

Properties	Standard	Unit	
Average molecular weight (average Molecular mass)		(g/mol)	approx. $0.5 * 10^6$
Density	ISO 1183	(Kg/m ³)	925
Water Absorption at 23°C until saturation	ISO 62		<0.01
Tensile strength at yield (tensile strength)	ISO 527	(MPa)	> 17
Elongation at break	ISO 527	(%)	> 350
Tensile modulus	ISO 527	(MPa)	> 790
Impact strength (Charpy) at 23°C	ISO 179	(kJ/m ²)	no break
Notched impact strength (Charpy) at 23°C	ISO 11542-2	(kJ/m ²)	> 170
Ball indentation hardness	ISO 2039-1	(N/mm ²)	30-35
Shore Hardness D, 15 s value	ISO 868	(-)	60-65
Coefficient of friction	-	(-)	approx. 0.2
Abrasion (Sand-Slurry)	-	(%)	100
Melting Point DSC, 10 K/min	ISO 3146	(°C)	135-138
VICAT Softening Point	ISO 306	(°C)	80
Coefficient of linear thermal expansion between 23 and 180°C	ISO 11359	(K ⁻¹)	Approx. $2 * 10^{-4}$
Thermal Conductivity	ISO 52612	(w/[M * k])	Approx. 0.4
Use temperature (max)	-	(°C)	80
Use temperature (briefly)	-	(°C)	90
Use temperature (min)	-	(°C)	-200
Relative permittivity at 100 Hz	IEC 60250	(-)	2.1
Dissipation factor at 100 Hz	IEC 60250	(-)	$3.9 * 10^{-4}$
Volume Resistivity	IEC 60093	(Ohm * m)	> 10^{12}
Surface Resistivity	IEC 60093	(Ohm)	> 10^{12}
Dielectric Strength	IEC 60243	(kV/mm)	45
Food conformances according to			
EU Directive 2002/72/EC			Yes
FDA Regulation 21CFR177.1520			Yes
FDA Regulation 21CFR178.2010			N/A
FDA Regulation 21CFR178.3297			Yes

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