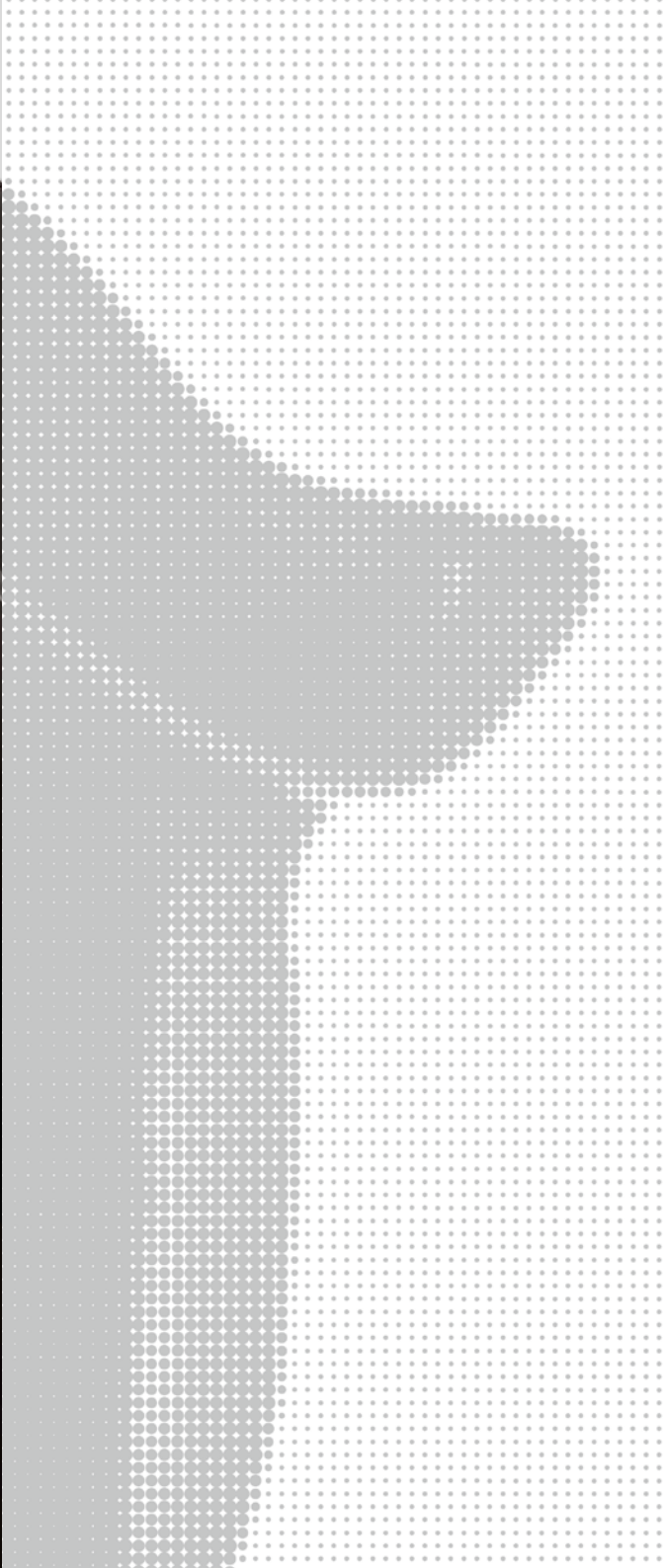




The reliable choice

IN PROSTHETIC AND ORTHOTIC
THERMOPLASTIC MATERIALS





Orfitrans is an advanced range of high temperature thermoplastic sheet materials for the production of check sockets, flexible sockets and orthoses.

The superb aesthetic qualities and outstanding handling and performance characteristics of Orfitrans will help to eliminate or minimize many of the difficulties that you routinely experience with the materials you currently use.

Issues resulting from cold flow, excessive friction, discoloration and more will be eliminated or minimized. Orfitrans materials will enable you to more easily achieve the desired patient outcomes while helping you increase productivity/patient throughput and eliminating waste that erodes your profit margins.

The excellent handling characteristics of Orfitrans flexible materials are unsurpassed.

No more stickiness, tackiness or need to use powder.

Reduced friction.

Orfitrans pulls easily and uniformly.

Side walls will not thin out and tear.

No more tearing or deforming issues.

The Orfitrans product family consists of different thermoplastic materials that have been specifically developed to provide solutions for a wide range of orthotic and prosthetic applications.

Select the Orfitrans material with the performance characteristics that will best meet your specific requirements and enable you to achieve the desired patient outcome.



ORFITRANS STIFF



ORFITRANS MEDIUM SOFT



ORFITRANS EXCEL



ORFITRANS EXCEL BLACK



ORFITRANS EXTRA SOFT



ORFITRANS EXTRA SOFT SILICONE

ORFITRANS[®] STIFF

The Gold Standard



ORFITRANS STIFF IS EVERYTHING YOU WANT AND NEED IN A CHECK SOCKET MATERIAL.

This very rigid transparent material will not break, crack or shatter when dropped. It is virtually indestructible, but you can still easily drill into Orfitrans Stiff. You will love the way it pulls (easily and uniformly) and the material feels great.

No other material comes close to Orfitrans Stiff in performance and quality. Once you start to use Orfitrans Stiff you will immediately know why it is the "GOLD STANDARD". If you are having difficulties with socket material that is too brittle and cracks or shatters when dropped, Orfitrans Stiff is what you need.

It is available in thicknesses of 5/16", 3/8", 1/2" and 19/32".

THERMOFORMING CONDITIONS

Activation temperature range	320-338°F	
	≈ CON	≈ IR
Activation time - sheet thickness 5/16"	25 min	27 min
Activation time - sheet thickness 3/8"	33 min	32 min
Activation time - sheet thickness 1/2"	36 min	34 min
Activation time - sheet thickness 19/32"	49 min	45 min
Maximum shrinkage during activation	3.5 %	
Maximum thermal shrinkage during cooling	0.8 %	

MECHANICAL PROPERTIES AT 70°F

Flexural modulus	1150 MPa
Aging: reduction of flexural modulus after UV-lighting for 210 h	0.7 %
Elastic modulus	1300 MPa
Tensile strength	26 MPa
Strain at break	250 %
Shore D hardness	68
Impact resistance	no break

GENERAL PROPERTIES

Density	1.01 g/cm ³
Degradation temperature	572°F
Color	transparent
Odor	none
Biocompatible	yes

Temperature and times are guidelines only.

FEATURES AND BENEFITS**Rigidity**

- > Most rigid product of the Orfitrans range, self supporting.
- > High impact resistance.
- > Orfitrans Stiff will not break, crack or shatter when dropped.
- > Virtually indestructible.
- > High fatigue resistance.
- > High stiffness.

Transparency

- > The socket will remain transparent.
- > Clear, slightly blue color.
- > The limb remains visible when wearing Orfitrans Stiff.

Low shrinkage

- > No risk for excessive pressure or compression.
- > The socket material will keep the shape and dimension determined by the mold.

Working properties

- > Non-sticky.
- > Bubble forming.
- > Pulls easily and uniformly.

Aspects

- > Styrene based.
- > Delivered with protective PE-foil. PE-foil has to be removed before activation.

Activation

- > 320°F.
- > Activation time according to thickness.

Product range

- > Product is available in different thicknesses and sheet sizes.

ORFITRANS® MEDIUM SOFT

For improved fitting options and improved outcomes



THE PERFECT MATERIAL TO USE FOR VACUUM TRANSTIBIAL AND TRANSFEMORAL SOCKETS.

Orfitrans Medium Soft is a flexible material that is structurally sound and will not cold flow at thinner areas of the flexible interface. The flex modulus is optimized for working with vacuum technologies.

The material will flex inward toward the limb when sitting. It will maintain its shape and the volume does not change or stretch outward. It allows for the change or flattening of the limb when sitting. This ensures that the socket will conform to the change to prevent loss of suspension while maintaining comfort.

Orfitrans Medium Soft does not stick to material.

A low coefficient of friction makes donning easy. The material combines enough rigidity to give control and enough flexibility to allow range of motion. Orfitrans Medium Soft offers a low-cost way to achieve high trim lines and low frame with excellent control.

It is available in a wide range of thicknesses 5/16", 3/8", 1/2", 19/32".

THERMOFORMING CONDITIONS

Activation temperature	302°F	
	CON	IR
Activation time - sheet thickness 5/16"	17 min	10.5 min
Activation time - sheet thickness 3/8"	18 min	13 min
Activation time - sheet thickness 1/2"	21 min	15 min
Activation time - sheet thickness 19/32"	25 min	17 min
Maximum shrinkage during activation	3.2 %	
Maximum thermal shrinkage during cooling	4.9 %	

MECHANICAL PROPERTIES AT 70°F

Flexural modulus	75 MPa
Elastic modulus	75 MPa
Tensile strength	24 MPa
Strain at break	800 %
Shore D hardness	43
Impact resistance	no break

GENERAL PROPERTIES

Density	0.94 g/cm ³
Degradation temperature	392°F
Color	opaque
Odor	acid smell
Biocompatible	yes

FEATURES AND BENEFITS**Rigidity**

- > Semi-flexible material.
- > Tougher than Orfitrans Extra Soft.

Transparency

- > The socket is semi-transparent.

Low Shrinkage

- > No risk for excessive pressure or compression.
- > The socket material will keep the shape and dimension determined by the mold.

Friction

- > Negligible stickiness or tackiness.
- > Greatly reduced friction.
- > Talcum powder can be used but is not required.

Working properties

- > Easy to mold.
- > Pulls easily and uniformly.
- > Bubble forming.
- > Non-sticky.

Cold flow

- > Does not absorb oils or moisture, which may cause cold flow issues.

Discoloration

- > Orfitrans Medium Soft will not turn yellow quickly as other competitor sockets.
- > Aesthetic benefit for the customer.

Aspect

- > EVA based.
- > Flexibility gives a very comfortable feeling for the patient.

Activation temperature

- > Activation time according to thickness.
- > Lower activation temperature (302°F) ensure that the socket will pull uniformly.

Product range

- > Product is available in several thicknesses and sizes.

Application

- > Inner sockets.

ORFITRANS® EXCEL

A PE-copolymer for orthotics
and flexible prosthetic sockets



ORFITRANS EXCEL IS LIGHTER IN WEIGHT THAN MOST OTHER MATERIALS.

This low friction, flexible material is not tacky nor sticky to mold. The material pulls very easily and uniformly. The surface finish is silky and smooth and buffs easily. Both bubble and drape forming are possible.

The material will bond to itself permanently. Orfitrans Excel will not cold flow and is not subject to discoloration.

It is resistant to wrinkling and very stable over time. The moderate bending modulus of Orfitrans Excel allows for functional mobility and muscle movement.

Orfitrans Excel is available in natural and black color and comes in a wide range of thicknesses from 1/8" up to 19/32".

THERMOFORMING CONDITIONS

Activation temperature	266°F	
	CON	IR
Activation time - sheet thickness 1/8"	5 min	2.5 min
Activation time - sheet thickness 5/32"	6 min	3.5 min
Activation time - sheet thickness 13/64"	7 min	4 min
Activation time - sheet thickness 5/16"	13 min	7 min
Activation time - sheet thickness 3/8"	16 min	9 min
Activation time - sheet thickness 1/2"	19 min	11 min
Activation time - sheet thickness 19/32"	21 min	14 min
Maximum shrinkage during activation	3.2 %	
Maximum thermal shrinkage during cooling	1.5 %	

MECHANICAL PROPERTIES AT 70°F

Flexural modulus	33 MPa
Elastic modulus	20 MPa
Tensile strength	18 MPa
Strain at break	> 400 %
Shore D hardness	31
Impact resistance	no break

GENERAL PROPERTIES

Density	0.88 g/cm ³
Degradation temperature	572°F
Color	(semi-)transparent/black
Odor	none
Biocompatible	yes

Temperature and times are guidelines only.

FEATURES AND BENEFITS**Rigidity**

- > Flexible material.

Transparency

- > Semi-transparent.
- > Allows observation of underlying anatomy while wearing.
- > Allows monitoring of potential pressure areas.
- > Allows control of proper molding for total surface contact.

Low shrinkage

- > Very low shrinkage during activation.
- > The material will keep the shape and dimension determined by the mold - no significant change of the shape of a prosthetic socket over time.

Working properties

- > Very easy to mold after activation.
- > Drapes nicely.
- > Very low cold flow.

Odorless

- > No acid smell.

Moderate bending modulus

- > Allows functional mobility and muscle movement.
- > Improves comfort.

Lightweight

- > 8% lighter than EVA-types.
- > Increased patient comfort.

Thermoplastic memory

- > Can be reheated and remolded.
- > Easy relief of pressure points.
- > Correction of the shape of an orthotic is possible in case of error or adaptation.

Excellent U.V.-stability

- > Prolongs the shelf life of the material.
- > No yellowing.
- > Not susceptible to aging under normal storage conditions.
- > Allows for more flexible inventory.

Activation

- > 266°F.
- > Activation time according to thickness.

Product range

- > Wide product range - available in different thicknesses.
- > Available in natural and black color.

Application

- > Excellent for orthotics of hand, wrist, ankle or foot.
- > Excellent for prosthetic sockets and liners.

ORFITRANS® EXTRA SOFT

Highly flexible prosthetic sockets



ORFITRANS EXTRA SOFT IS THE PERFECT FLEXIBLE MATERIAL WITH OUTSTANDING PATIENT COMFORT.

The material is extremely smooth and does not have a tacky or sticky feel. Using Orfitrans Extra Soft eliminates the need to use powder to prevent stickiness. Use it for its softness, patient friendliness and its comfort.

It is available in thicknesses of 23/64" and 1/2".

THERMOFORMING CONDITIONS

Activation temperature		302°F
	CON	IR
Activation time - sheet thickness 23/64"	11 min	7 min
Activation time - sheet thickness 1/2"	14 min	9 min
Maximum shrinkage during activation		3.2 %
Maximum thermal shrinkage during cooling		1.6 %

MECHANICAL PROPERTIES AT 70°F

Flexural modulus		30 MPa
Aging: reduction of flexural modulus after UV-lighting for 210 h		11.1 %
Elastic modulus		26 MPa
Tensile strength		10 MPa
Strain at break		800 %
Shore D hardness		33
Impact resistance		no break

GENERAL PROPERTIES

Density		0.95 g/cm ³
Degradation temperature		446°F
Color		semi-transparent
Odor		yes
Biocompatible		yes

FEATURES AND BENEFITS**Rigidity**

- > Very flexible material.

Transparency

- > The socket is semi-transparent.

Low shrinkage

- > No risk for excessive pressure or compression.
- > The socket material will keep the shape and dimension determined by the mold.

Working properties

- > Easy to mold.
- > Pulls easily and uniformly.
- > Bubble forming.
- > Non-sticky.

Aspects

- > EVA based.
- > Flexibility gives a very comfortable feeling for the patient.

Activation

- > 302°F.
- > Activation time according to thickness.

Product range

- > Product is available in different thicknesses and sheet sizes.

Application

- > Inner sockets.

ORFITRANS® EXTRA SOFT SILICONE

Highly flexible with very smooth touch
for prosthetic sockets



ORFITRANS EXTRA SOFT WITH SILICONE IS A FLEXIBLE MATERIAL THAT FEELS GREAT AND IS NOT TACKY OR STICKY.

No powder is needed on the inside. It pulls easily and uniformly. It eliminates all of the difficulties and inconveniences you experience with other materials.

Orfitrans Extra Soft Silicone is available in thicknesses of 23/64" and 1/2".

THERMOFORMING CONDITIONS

Activation temperature		302°F
	CON	IR
Activation time - sheet thickness 23/64"	11 min	7 min
Activation time - sheet thickness 1/2"	14 min	10 min
Maximum shrinkage during activation		3.2 %
Maximum thermal shrinkage during cooling		1.6 %

MECHANICAL PROPERTIES AT 70°F

Flexural modulus	30 MPa
Aging: reduction of flexural modulus after UV-lighting	NA
Elastic modulus	27 MPa
Tensile strength	5.8 MPa
Strain at break	800 %
Shore D hardness	33
Impact resistance	no break

GENERAL PROPERTIES

Density	0.95 g/cm ³
Degradation temperature	446°F
Color	white
Odor	none
Biocompatible	yes

FEATURES AND BENEFITS

Rigidity

- > Very flexible material.

Transparency

- > The socket is opaque.
- > White color.

Low shrinkage

- > No risk for excessive pressure or compression.
- > The socket material will keep the shape and dimension determined by the mold.

Working properties

- > Easy to mold.
- > Pulls easily and uniformly.
- > Bubble forming.
- > Non-sticky.

Aspects

- > EVA based.
- > Flexibility gives a very comfortable feeling for the patient.
- > Silicone based for very smooth surface.

Activation

- > 302°F.
- > Activation time according to thickness.

Product range

- > Product is available in different thicknesses and sheet sizes.

Application

- > Inner sockets.

ORFITRANS PROPERTIES

ORFITRANS PROPERTIES

		Orfitrans Stiff	Orfitrans Medium Soft	Orfitrans Excel	Orfitrans Extra Soft	Orfitrans Extra Soft Silicone
Density	g/cm ³	1.01	0.94	0.88	0.95	0.95
Tensile strength	MPa	26	24	18	10	5.8
Elongation at break	%	250	800	>400	800	800
Flexural modulus	MPa	1150	75	33	30	30
Impact resistance	kJ/m ²	no break	no break	no break	no break	no break
Hardness (shore D)		68	43	31	33	33
Molding temperature	°F	320-338	302	266	302	302

WHAT DO THE ABOVE PROPERTIES MEAN?

- > **Density** is an identification of the mass of the material compared to water. Gives an indication of how heavy a material is.
- > **Tensile strength** is the pulling force required to break a material at room temperature.
- > **Elongation at break** is the increase in length of a material when stretched at room temperature until breaking occurs.
- > **Flexural modulus** is the force needed to bend a material at room temperature. Gives an indication of how stiff a material is.
- > **Impact resistance** is the ability of a material to withstand shock loading. Gives an indication of how brittle a material is when you drop it at room temperature.
- > **Hardness** is the resistance of the material to compression at room temperature.
- > **Molding temperature** is the temperature at which the shape of the material can be changed to any other shape, either by hand or under vacuum and at which the material keeps its best working properties.

INSTRUCTIONS FOR USE

GENERAL PRODUCT INFORMATION

Orfitrans is a high melting temperature thermoplastic material for the production of external orthoses and prosthetic (check) sockets.

- > **Orfitrans Stiff**
is a very stiff clear material with high impact resistance.
- > **Orfitrans Medium Soft**
is the perfect material for transtibial and transfemoral sockets.
- > **Orfitrans Excel**
is a semi-transparent PE-Copolymer for flexible prosthetic sockets.
- > **Orfitrans Excel Black**
is a black PE-Copolymer for flexible sockets.
- > **Orfitrans Extra Soft**
is a semi-transparent and flexible material.
- > **Orfitrans Extra Soft Silicone**
is an off-white, flexible material.

Orfitrans is not suitable for internal applications. It may not be used on open wounds or in the mouth.

Orfitrans Stiff is not suitable for orthoses that are subjected to a regular cyclic load (e.g. dropfoot orthoses).

PRODUCT RANGE

Orfitrans is available in sheets of different thicknesses and sizes. For a product overview: see page 16.

PRECAUTIONS BEFORE USE

1. The workplace must be well ventilated to avoid overheating. However, there should be no draughts to avoid unequal cooling of the activated material.
2. Ensure that all necessary tools are within reach to be able to work quickly and efficiently.
3. Wear suitable clothing and avoid contact with the materials at very high temperatures. Always wear proper isolating gloves.

ACTIVATION TECHNIQUE

1. For making orthoses, Orfitrans can be activated on a heating plate, in a plate oven, a convection oven or an infrared oven. For making a prosthetic socket, it is required to use a convection oven which can contain a frame, allowing the thermoplastic material to sag.

2. Each Orfitrans material has its own optimum activation temperature. The activation time in an oven depends on the material and the thickness of the sheet. Make sure the thermometer of the oven is working properly and has been correctly adjusted (it is possible to gauge this with a glass thermometer). Orfitrans is not moldable enough at excessively low temperatures and will flow abundantly at excessively high temperatures.
3. The oven plate must be covered with a Teflon-film and it is recommended to clean both Orfitrans and the Teflon film with a little acetone before activation.
4. Remove the protective film from both sides of Orfitrans.
5. For activating a prosthetic socket, the Orfitrans sheet is locked in a frame and heated so that the plastic gradually sags and forms a droplike bubble. When the length of this bubble has reached approximately 2/3 of the length of the positive plaster mold (minimum 15 cm), Orfitrans is ready to be formed.
6. Never use an open flame for the activation of the plastic because of risk of fire.

INSTRUCTIONS FOR USE

PRODUCT RANGE + ACTIVATION TIME

Product	Optimum activation temperature	Thickness	400 mm x 400 mm 15 3/4" x 15 3/4"	1225 mm x 1225 mm 48" x 48"	Average activation time CON*	Average activation time IR**
Orfitrans Stiff	320-338°F	5/16"	37ST/4480	37ST/1225122580	25	27
		3/8"	37ST/44100	37ST/12251225100	33	32
		1/2"	37ST/44120	37ST/12251225120	36	34
		19/32"	37ST/44150	37ST/12251225150	49	45
Orfitrans Medium Soft	302°F	5/16"	37SS/4480		17	10.5
		3/8"	37SS/44100		18	13
		1/2"	37SS/44120		21	15
		19/32"	37SS/44150		25	17
Orfitrans Excel	266°F	1/8"		37SS42/1225122530	5	2.5
		5/32"		37SS42/1225122540	6	3.5
		13/64"		37SS42/1225122550	7	4
		5/16"	37SS42/4480		13	7
		3/8"	37SS42/44100	37SS42/12251225100	16	9
		1/2"	37SS42/44120	37SS42/12251225120	19	11
Orfitrans Excel Black	266°F	19/32"	37SS42/44150	37SS42/12251225150	21	14
		5/16"	37SS42/4480Z	37SS42/1225122580Z	13	7
		3/8"	37SS42/44100Z	37SS42/12251225100Z	16	9
		1/2"	37SS42/44120Z	37SS42/12251225120Z	19	11
Orfitrans Extra Soft	302°F	19/32"	37SS62/44150Z	37SS42/12251225150Z	21	14
		23/64"	37SS62/4490	37SS62/1225122590	11	7
		1/2"	37SS62/44120	37SS62/12251225120	14	9
Orfitrans Extra Soft Silicone	302°F	23/64"	37SIL/4490	37SIL/1225122590	11	7
		1/2"	37SIL/44120	37SIL/12251225120	14	10

* Average activation time in a convection oven (time in minutes) ** Average activation time in an infrared oven (time in minutes)
 These activation times are guidelines only. The activation time in a convection or infrared oven depends on the material and the thickness of the sheet.

WORKING PROPERTIES (prosthetic check socket)

Forming

1. The positive plaster mold has to be dry and must have a smooth and dust free surface. It is preferably preheated to 140°F which allows for more working time.
2. Take the activated material out of the oven with isolating gloves. Turn the “drop” upside down and pull it slowly along the length of the plaster mold until the frame covers the basic platform.
3. Turn on the vacuum pump gently to work away wrinkles in the plastic before the vacuum is completed.

Cooling

1. The cooling process must occur over a long period of time and at room temperature.
2. Leave Orfitrans on the plaster mold until it is fully cooled to avoid internal stresses that may alter the shape.
3. Cut the socket from the frame with a cutter and cut away the surplus of material. Wear protective clothing and gloves when using a cutter.

FINISHING

The edges of Orfitrans are finished by grinding and polishing using adapted wheels at a speed of maximum 3000 rpm (grinding roll). Pay attention to security measures when using grinding and polishing machines.

MAINTENANCE AND WASTE MANAGEMENT

1. Prostheses and orthoses made of Orfitrans must be cleaned daily. Use lukewarm water and soap or a biological detergent, and rinse well. Never use solvents.
2. Disinfection of prosthetic sockets and orthoses is possible with alcohol, quaternary ammonium or a solution of commercial disinfecting soaps (HAC., Sterilium., etc.).
3. After use, prosthetic sockets and orthoses can be disposed of with normal household waste without harming the environment.

ADVICE FOR THE PATIENT

Give the patient sufficient information about the exact use and maintenance of the orthosis or the prosthetic socket.

STORAGE

Plastics must be stored in their original packaging and in a dry room at a temperature of min. 50°F and max. 86°F. Avoid exposure to light.

GENERAL SAFETY ADVICE

Orfitrans may not be used for internal applications, on open wounds or in the mouth. Use gloves when manipulating the heated plastic. Always work in a well-ventilated room. Never use an open flame for the activation of the plastic because of risk of fire.

ADDITIONAL INFORMATION

For additional information such as distributor contact information, product brochures, Safety Data Sheets and regulatory information, please visit our website www.orfit.com.

These instructions were written in accordance with the European directive 93/42/EEC for medical devices.

It is prohibited to make alterations to this text without prior approval from Orfit Industries.

DEGRADATION TEMPERATURE OF ORFITRANS

Product	Degradation temperature
Orfitrans Stiff	572°F
Orfitrans Medium Soft	572°F
Orfitrans Excel	572°F
Orfitrans Excel Black	446°F
Orfitrans Extra Soft	446°F
Orfitrans Extra Soft Silicone	446°F

NOTES

A series of horizontal dotted lines for writing notes.



The
reliable
choice

www.orfit.com



ORFIT® INDUSTRIES AMERICA

350 Jericho Turnpike, Suite 302 | Jericho, New York 11753
T 516-935-8500 | F 516-935-8505
sales-us@orfit.com