

## ORFILIGHT® NS 1.6 mm (1/16")

Thickness	mm (inches)	1.6 (1/16)
Perforation	% (type)	13 (micro)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)
Activation time (in water bath)	minutes	3 - 4
Transparent when activated		no
Working time	minutes	1 - 1 ½
Hardening time	minutes	1 ¾ - 2 ¼
Time to completion	minutes	10 - 11
Resistance to stretch		moderate
Drape		high
Memory (after 200 % elongation)		high
Maximum elongation when activated	%	1800
Memory (after maximum elongation)		high
Sticks to itself when activated and wet		yes
Sticks to itself when activated, after drying		reliable under low stress
Adhesion (velcro strip) using heat gun		yes

### Mechanical properties at 21°C

Flexural modulus	MPa	260
Elastic modulus	MPa	170
Tensile strength	MPa	8.0
Strain at break	%	45

### General properties

Density	g cm <sup>-3</sup>	0.85
Hardness (shore D)		47
Surface feeling		smooth
Color		skin
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes

## ORFILIGHT® NS 2.5 mm (3/32")

Thickness	mm (inches)	2.5 (3/32)
Perforation	% (type)	13 (micro)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)
Activation time (in water bath)	minutes	3 - 4
Transparent when activated		no
Working time	minutes	1 - 1 ½
Hardening time	minutes	2 ¾ - 3 ¼
Time to completion	minutes	11 - 12
Resistance to stretch		moderate
Drape		high
Memory (after 200 % elongation)		high
Maximum elongation when activated	%	2500
Memory (after maximum elongation)		high
Sticks to itself when activated and wet		yes
Sticks to itself when activated, after drying		reliable under low stress
Adhesion (velcro strip) using heat gun		yes

### Mechanical properties at 21°C

Flexural modulus	MPa	190
Elastic modulus	MPa	165
Tensile strength	MPa	8.0
Strain at break	%	60

### General properties

Density	g cm <sup>-3</sup>	0.80
Hardness (shore D)		47
Surface feeling		smooth
Color		skin
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes

## ORFILIGHT® NS 3.2 mm (1/8")

Thickness	mm (inches)	3.2 (1/8)	3.2 (1/8)
Perforation	% (type)	0 (non perfo)	3.5 (mini)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)	65 (149)
Activation time (in water bath)	minutes	3 - 4	3 - 4
Transparent when activated		no	no
Working time	minutes	2 - 2 ½	1 ¾ - 2 ¼
Hardening time	minutes	4 ¾ - 5 ¼	3 ¾ - 4 ¼
Time to completion	minutes	20 - 21	15 - 16
Resistance to stretch		moderate	moderate
Drape		high	high
Memory (after 200 % elongation)		high	high
Maximum elongation when activated	%	2300	2200
Memory (after maximum elongation)		high	high
Sticks to itself when activated and wet		yes	yes
Sticks to itself when activated, after drying		reliable under low stress	reliable under low stress
Adhesion (velcro strip) using heat gun		yes	yes

### Mechanical properties at 21°C

Flexural modulus	MPa	285	285
Elastic modulus	MPa	145	125
Tensile strength	MPa	10.0	8.0
Strain at break	%	140	20

### General properties

Density	g cm <sup>-3</sup>	0.80	0.80
Hardness (shore D)		47	47
Surface feeling		smooth	smooth
Color		skin	skin
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

## ORFILIGHT® BLACK NS 1.6 mm (1/16")

Thickness	mm (inches)	1.6 (1/16)
Perforation	% (type)	13 (micro)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)
Activation time (in water bath)	minutes	3 - 4
Transparent when activated		no
Working time	minutes	1 - 1 ½
Hardening time	minutes	1 ¾ - 2 ¼
Time to completion	minutes	10 - 11
Resistance to stretch		moderate
Drape		high
Memory (after 200 % elongation)		high
Maximum elongation when activated	%	1800
Memory (after maximum elongation)		high
Sticks to itself when activated and wet		yes
Sticks to itself when activated, after drying		reliable under low stress
Adhesion (velcro strip) using heat gun		yes

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Flexural modulus	MPa	260
Elastic modulus	MPa	170
Tensile strength	MPa	8.0
Strain at break	%	45

### General properties

Density	g cm <sup>-3</sup>	0.85
Hardness (shore D)		47
Surface feeling		smooth
Color		black
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes

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Thickness	mm (inches)	2.5 (3/32)
Perforation	% (type)	13 (micro)

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Working time	minutes	1 - 1 ½
Hardening time	minutes	2 ¼ - 3 ¼
Time to completion	minutes	11 - 12
Resistance to stretch		moderate
Drape		high
Memory (after 200 % elongation)		high
Maximum elongation when activated	%	2500
Memory (after maximum elongation)		high
Sticks to itself when activated and wet		yes
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Fatigue	cycles	> 10000
Biocompatible		yes

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Resistance to stretch		moderate	moderate
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Tensile strength	MPa	10.0	8.0
Strain at break	%	140	20

### General properties

Density	g cm <sup>-3</sup>	0.80	0.80
Hardness (shore D)		47	47
Surface feeling		smooth	smooth
Color		black	black
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

## ORFILIGHT® ATOMIC BLUE NS 1.6 mm (1/16")

Thickness	mm (inches)	1.6 (1/16)
Perforation	% (type)	13 (micro)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)
Activation time (in water bath)	minutes	3 - 4
Transparent when activated		no
Working time	minutes	1 - 1 ½
Hardening time	minutes	1 ¾ - 2 ¼
Time to completion	minutes	10 - 11
Resistance to stretch		moderate
Drape		high
Memory (after 200 % elongation)		high
Maximum elongation when activated	%	1800
Memory (after maximum elongation)		high
Sticks to itself when activated and wet		yes
Sticks to itself when activated, after drying		reliable under low stress
Adhesion (velcro strip) using heat gun		yes

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Flexural modulus	MPa	260
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Strain at break	%	45

### General properties

Density	g cm <sup>-3</sup>	0.85
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Surface feeling		smooth
Color		black
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes

## ORFILIGHT® ATOMIC BLUE NS 2.5 mm (3/32")

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### General properties

Density	g cm <sup>-3</sup>	0.80
Hardness (shore D)		47
Surface feeling		smooth
Color		atomic blue
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes



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### General properties

Density	g cm <sup>-3</sup>	0.80	0.80
Hardness (shore D)		47	47
Surface feeling		smooth	smooth
Color		atomic blue	atomic blue
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

## INFORMATION

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The hardening time indicates the time period during which the material remains flexible, but no longer mouldable.

The time to completion indicates the length of time until the orthosis is finished and can be worn by the patient.

The memory indicates the ability of the material to regain its original shape after reheating.

The flexural modulus indicates the resistance of the material to a force causing it to bend.

The elastic modulus defines the ratio of the applied tensile stress to the change in shape of the material.

The tensile strength is the pulling force required to break the material.

The strain at break is the length increase of the material when stretched until failure.

The hardness indicates the resistance of the material to compression.

Fatigue indicates the minimum number of stress cycles the material sustains when bending over 90 degrees without failure.

The biocompatibility is studied according the guidelines of the International Organization for Standardization 10993 – Biological Evaluation of Medical Devices:

- Primary skin irritation study.
- Delayed dermal contact sensitization study.
- Cytotoxicity study.

### Note:

Although the information in this publication is believed to be accurate and reliable, the data shown are for guidance only. Orfit Industries gives no guarantees about the results and assumes no liability in connection with them. The properties reported here are intended primarily to facilitate comparison among Orfit products. Standard testing methods often allow alternative measuring methods. Therefore, data from other sheet manufacturers may not be directly comparable. For additional information, please contact Orfit Industries.