

## EFFICAST<sup>®</sup> 1.6 mm (1/16")

Thickness	mm (inches)	1.6 (1/16)
Perforation	% (type)	17 (micro)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)
Activation time (in water bath)	minutes	3 – 4
Transparent when activated		yes
Working time	minutes	1 - 1 ½
Hardening time	minutes	2 ½ – 3
Time to completion	minutes	12 – 13
Resistance to stretch		low
Drape		high
Memory (after 200 % elongation)		full
Maximum elongation when activated	%	1150
Memory (after maximum elongation)		full
Sticks to itself when activated and wet		no
Sticks to itself when activated, after drying		no
Adhesion (velcro strip) using heat gun		n.a.

### Mechanical properties at 21°C

Flexural modulus	MPa	425
Elastic modulus	MPa	250
Tensile strength	MPa	15.5
Strain at break	%	75

### General properties

Density	g cm <sup>-3</sup>	1.13
Hardness (shore D)		60
Surface feeling		smooth
Color		yellow
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes

**EFFICAST<sup>®</sup> 2.0 mm (1/12")**

Thickness	mm (inches)	2.0 (1/12)	2.0 (1/12)
Perforation	% (type)	17 (micro)	24 (maxi)

**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		yes	yes
Working time	minutes	1 - 1 ½	1 - 1 ½
Hardening time	minutes	3 - 3 ½	2 ½ - 3
Time to completion	minutes	14 - 15	13 - 14
Resistance to stretch		low	low
Drape		high	high
Memory (after 200 % elongation)		full	full
Maximum elongation when activated	%	1250	1200
Memory (after maximum elongation)		full	full
Sticks to itself when activated and wet		no	no
Sticks to itself when activated, after drying		no	no
Adhesion (velcro strip) using heat gun		n.a.	n.a.

**Mechanical properties at 21°C**

Flexural modulus	MPa	425	350
Elastic modulus	MPa	250	180
Tensile strength	MPa	15.5	11.5
Strain at break	%	75	280

**General properties**

Density	g cm <sup>-3</sup>	1.13	1.13
Hardness (shore D)		60	60
Surface feeling		smooth	smooth
Color		yellow	yellow
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

## EFFICAST<sup>®</sup> 3.2 mm (1/8")

Thickness	mm (inches)	3.2 (1/8)
Perforation	% (type)	24 (maxi)

### Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)
Activation time (in water bath)	minutes	3 – 4
Transparent when activated		yes
Working time	minutes	1 ¼ - 1 ¾
Hardening time	minutes	3 ½ – 4
Time to completion	minutes	18 – 19
Resistance to stretch		low
Drape		high
Memory (after 200 % elongation)		full
Maximum elongation when activated	%	1300
Memory (after maximum elongation)		full
Sticks to itself when activated and wet		no
Sticks to itself when activated, after drying		no
Adhesion (velcro strip) using heat gun		n.a.

### Mechanical properties at 21°C

Flexural modulus	MPa	350
Elastic modulus	MPa	175
Tensile strength	MPa	11.5
Strain at break	%	230

### General properties

Density	g cm <sup>-3</sup>	1.13
Hardness (shore D)		60
Surface feeling		smooth
Color		yellow
Odor		none
Fatigue	cycles	> 10000
Biocompatible		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 precut is hardened and can be removed from 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.

