



ALIGNER & RETAINER SHEETS | 3D PRINTING RESINS

**PRODUCT CATALOGUE**



**TAGLUS PU FLEX**  
The Smartest Polyurethane Material.

# WHAT IS TAGLUS PU FLEX ?

Taglus® PU Flex is a homogeneous polyurethane sheet that consists of linear polymeric chains made of alternating flexible and rigid segments. It is a high-performance aligner and retainer material that provides excellent flexibility, strength, and durability, while also providing comfort for the wearer.

## ABOUT TAGLUS PU FLEX

Taglus® PU flex comprises of flexible segments that have a low glass transition temperature while the rigid segments exhibit a high melting point. This eliminates the multilayer formation yet achieves all its properties in a single layer. The unique modification of these phases makes it possible to have properties such as cold-flexibility, soft-touch, wear and abrasion resistance, chemical resistance, scratch and tear resistance.

### DIMENSIONS

		THICKNESS	
		(mm)	(Inch)
∅	125mm		
∅	120mm	0.45	0.018"
■	120mm x 120mm	0.76	0.030"
■	125mm x 125mm	1.02	0.040"

Available in Round, Square, Arch & Roll Form

\*\*Some variations are inherent to plastic testing, and preceeding data is considered to be approximate representative of mean values. Vedia Solutions makes no representation that the material in any representation, in any particular shipment, exactly confirms the values determined. Conversions from customary metric/US values may have been rounded and therefore may not be exact conversions. Neither Vedia Solutions nor its marketing affiliates will be responsible for the use of this information or any product method or device mentioned, and you must make your own determination of its suitability and completeness for your own use and purchasers of your products.

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# PHYSICAL PROPERTIES

## TENSILE STRESS

In applications where plastic films are designed to withstand orthodontic forces in an aligner, the mechanical properties of polymers namely Strength, Stiffness & Toughness play a vital role. Such properties of Taglus® PU Flex sheets when investigated using standardized test methods, e.g. tensile stress as per ASTM D 638: 2014 by briefly applying load in one direction the approximate results and values observed during such test, demonstrate that Taglus® PU Flex has the highest tensile stress at the break in its class approximately equal to 61 MPa. So, it is an optimal balance of rigidity with elasticity. The test was performed by a NABL accredited Laboratory complying with ISO/IEC 17025 Laboratory Management System.

## IMPACT STRENGTH

Owing to the presence of alternating flexible and rigid segments, the polymer toughness is highly increased. When measured Un-notched Izod Impact Strength as per ASTM D256 @73°F (23°C) in 0.125" thickness, the value was approximately 85 J/m (No Break) indicating it is a virtually unbreakable aligner thermoforming foil.

## ELONGATION AT BREAK

Taglus® PU Flex sheets have a very high value of elongation at break. With an approximate value of 100%, the material can stretch up to 100 percent of its original dimensions before it breaks, this eliminates the worries of aligner cracking.

## WATER ABSORPTION

The water absorption data is important to understand the performance of the Taglus® PU Flex sheets during processing e.g. Thermoforming as well as in water or humid environments especially in saliva in the mouth, to avoid premature moisture-related failures. Taglus® PU Flex sheets when tested for 24 hours water absorption test exhibited only 0.15% weight changes against the industry-accepted chemical resistance standard of <3%.



## CLARITY:

The photographs of Taglus® PU Flex sheets when compared with other PU-based aligner sheets show a noticeable difference in the clarity of the object placed at a distance from the sheet. Taglus® PU Flex sheets have the highest clarity in their class of other PU-based aligner thermoforming foils.

## BIOCOMPATIBILITY TESTING

TAGLUS thermoforming files have passed biocompatibility testing namely skin sensitization , in vitro cytotoxicity and skin irritation test as a regulatory requirement for demonstrating the preclinical safety of medical devices, this is evaluated in accordance with the standard guideline.



## WORKING INSTRUCTIONS: HEATING TIME

	<b>0.018"</b> <b>(0.45mm)</b>	<b>0.030"</b> <b>(0.762mm)</b>	<b>0.040"</b> <b>(1.020mm)</b>
BioSTAR MiniSTAR / MiniSTAR S	Code 102 / Code 112 / Code 122	Code 122 / Code 132 / Code 142	Code 142 / Code 152 / Code 162
Dreve Druformat Scan	Heating - 0:55 Cooling - 1:20	Heating - 1:10 Cooling - 1:20	Heating - 1:25 Cooling - 1:20

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Pressure should be set ABOVE 4 Bars. Temperature is at MACHINE default.

Taglus Sheets are protected by masking sheets, remove the protective sheets AFTER thermoforming and finishing.

Above times are general guidelines only, as each individual machine acts slightly different.

If the plastic does not adapt well to the model, add or reduce 5 seconds to heating time until the result is ideal.

If plastic forms folds, results in NOT clear tray OR shows bubble formation, recalibrate your heating element or reduce heating time until the result is ideal.

For any clinical and Lab related questions, please do not hesitate to contact us at [info@taglus.com](mailto:info@taglus.com) and in case of any serious incident that has occurred in relation to this medical device contact us at [info@taglus.com](mailto:info@taglus.com) and the competent authority of the Member State in which the user and/or patient is established.



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