CELANEX® 2414MT

CELANEX® PBT

Celanex 2414MT is an unreinforced, low viscosity and low friction Polybutylene Terephthalate, specifically designed for medical/healthcare applications requiring excellent sliding and low wear properties.

Celanex 2414MT is a special grade developed for medical industry applications and complies with:

- CFR 21 (177.1660) of the Food and Drug Administration (FDA)
- the corresponding EU and national registry regulatory requirements
- biocompatibility in tests corresponding to USP 23 Class VI/ISO 10993
- low residual monomers
- no animal products

Product information

Resin Identification	PBT		ISO 1043
Part Marking Code	>PBT<		ISO 11469

Rheological properties

Melt volume-flow rate	40	cm^3/10min	ISO 1133
Temperature	482	°F	
Load	4.76	lb	
Molding shrinkage range, parallel	1.8 - 2.2	%	ISO 294-4, 2577
Molding shrinkage, normal	2.0	%	ISO 294-4, 2577
Molding shrinkage range, normal	1.8 - 2.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	348000	psi	ISO 527-1/-2
Tensile stress at yield, 50mm/min	7300	psi	ISO 527-1/-2
Tensile strain at yield, 50mm/min	4	%	ISO 527-1/-2
Nominal strain at break	19	%	ISO 527-1/-2
Flexural modulus	348000	psi	ISO 178
Flexural strength	11600	psi	ISO 178
Flexural strain at failure	5.8	%	ISO 178
Charpy impact strength, 23°C	71.4	$ftlb/in^2$	ISO 179/1eU
Charpy notched impact strength, 23°C	1.43	$ftlb/in^2$	ISO 179/1eA

Thermal properties

Melting temperature, 10°C/min	437	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140	°F	ISO 11357-1/-3

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.45	%	Sim. to ISO 62
Density	0.0462	lb/in^3	ISO 1183

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Injection

Drying Recommended	yes	
Drying Temperature	266[1]	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	473	°F
Min. melt temperature	464	°F
Max. melt temperature	482	°F
Max. screw tangential speed	0.1 - 0.3	m/s
Mold Temperature Optimum	176	°F
Min. mold temperature	140	°F
Max. mold temperature	266	°F

[1]: Limits: from 120°C to 140°C

Characteristics

Processing	Injection Molding
Additives	Release agent
Special characteristics	Low wear / Low friction

Additional information

Injection molding

To minimize the volatile content in the final product, dry the resin to <0.02%, preferably ≤0.01% water content. In injection molding, use the lowest possible melt temperature (recommended 240 °C) and shortest feasible residence time (recommended 2-3 minutes). Store the parts in a ventilated, clean area before use. If assistance is needed please contact your Celanese account representative.

These recommendations are based on internal Celanese testing. For drying and injection molding conditions outside the above parameters, customer must test for and verify suitably low volatiles emissions on molded articles to confirm the final product is suitably pure for its intended use.

Preprocessing

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. The drying should be done in a dry-air dryer (dew point < -30°C) with a temperature of 120 to 140 °C and a drying time of 4 to min. 2 hours. In case of longer residence times in the dry-air dryer, the temperature should be reduced to below 80°C.
The time between drying and processing should be kept as short as possible.
The processing machine feed hopper should be closed during the processing operation.

Processing Notes

Pre-Drying

To avoid hydrolytic degradation during processing, CELANEX PBT resins have to

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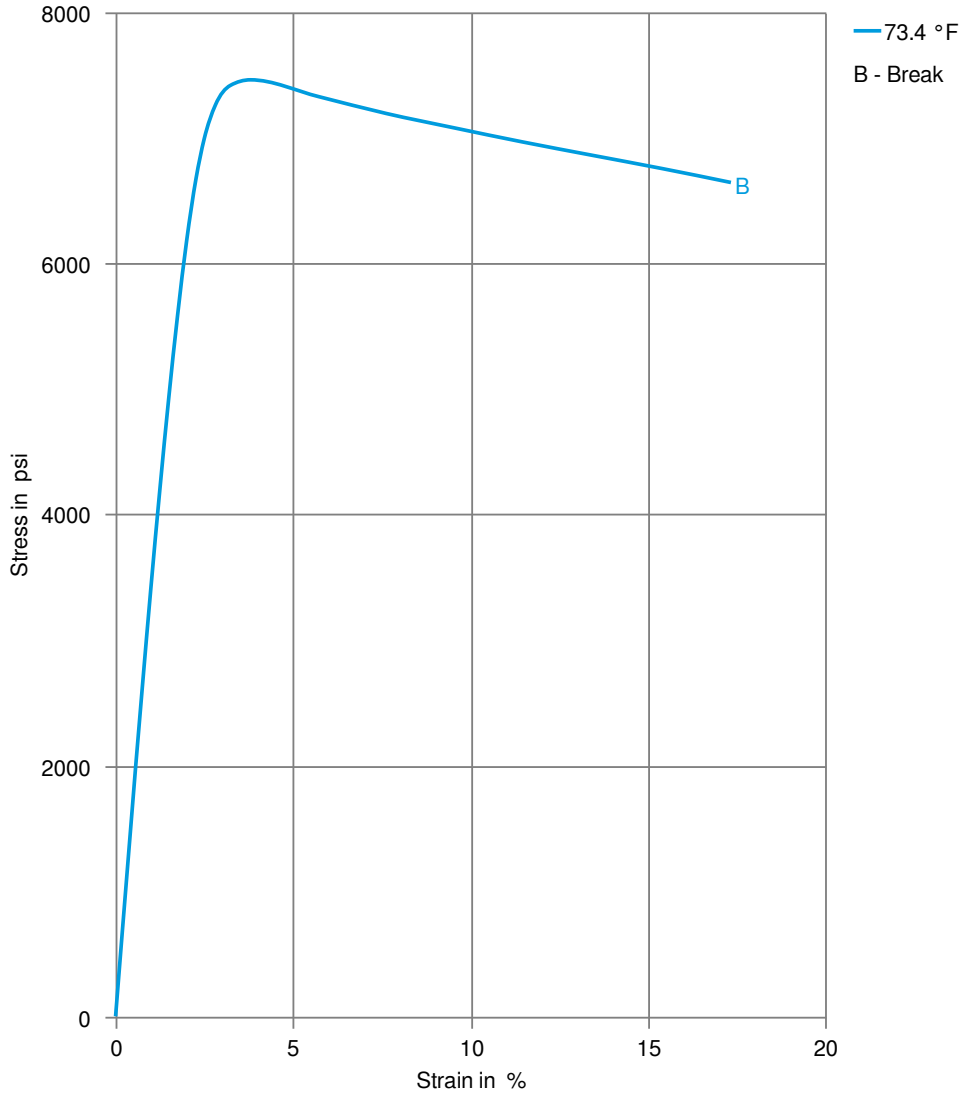
CELANEX® PBT

be dried to a moisture level to less than 0.02%, preferably equal or less than 0.01%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°C (-40°F) at 120°C - 140°C (284°F) for 4 +/- 2 hours.

Storage

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature below 80° C.

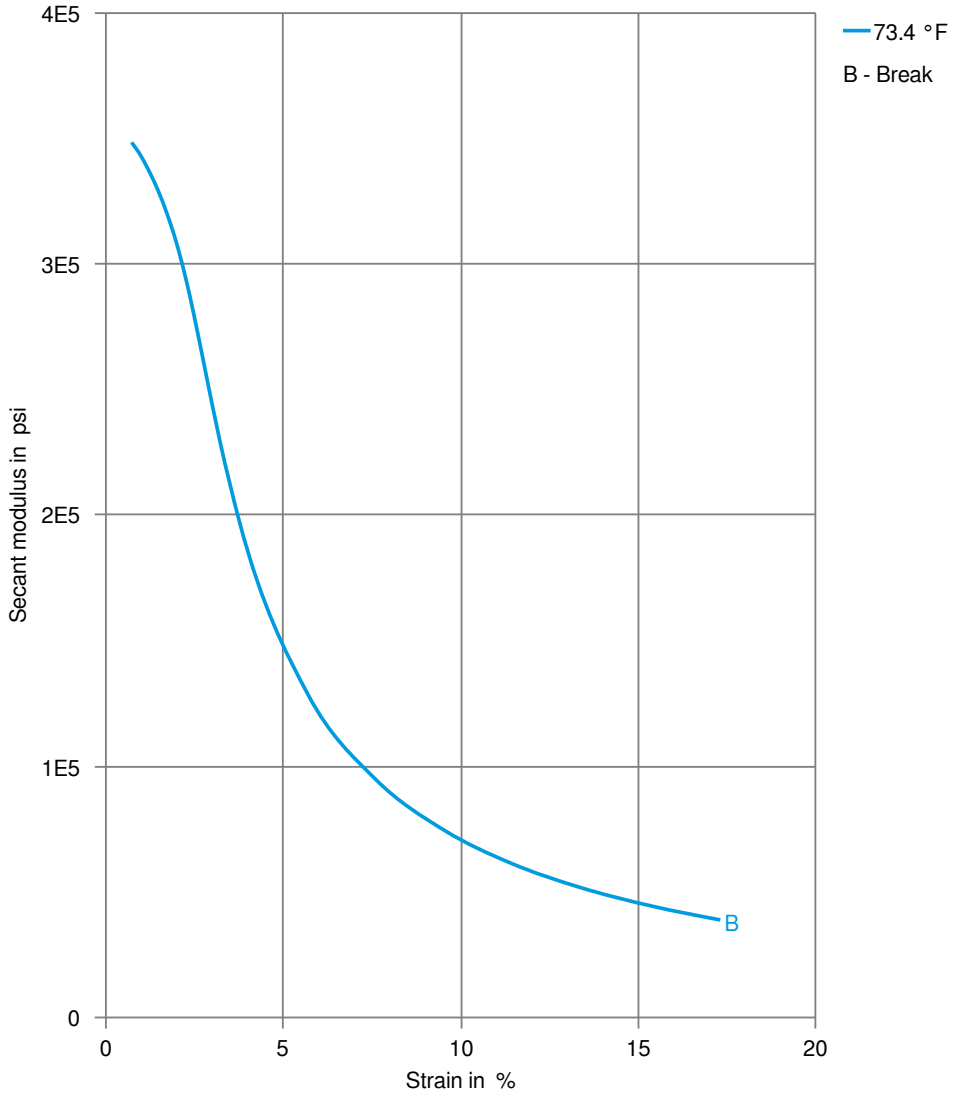
Stress-strain



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Secant modulus-strain



Revised: 2026-07-09 Source: Celanese Materials Database

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