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CELANEX® 1401A

unfilled PBT
Celanex 1401A is a high flow general purpose polybutylene terephthalate with a good balance of mechanical properties and processability

Rheological properties

Melt volume-flow rate	48	cm^3/10min	ISO 1133
Melt mass-flow rate	54	g/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage range, parallel	1.7 - 2.0	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.7 - 2.0	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	2550	MPa	ISO 527-1/-2
Yield stress, 50mm/min	60	MPa	ISO 527-1/-2
Yield strain, 50mm/min	10	%	ISO 527-1/-2
Nominal strain at break	25	%	ISO 527-1/-2
Charpy notched impact strength, 23°C	3.1	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	2.9	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	4	kJ/m^2	ISO 180/1A
Hardness, Rockwell, M-scale	80		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	224	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	55	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	130	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	110	E-6/K	ISO 11359-1/-2

Other properties

Density	1310	kg/m^3	ISO 1183

Injection

Drying Temperature	120 - 130	°C
Drying Time, Dehumidified Dryer	4	h
Processing Moisture Content	0.02	%
Max. mould temperature	65 - 93	°C
Back pressure		MPa
Injection speed	medium-fast	

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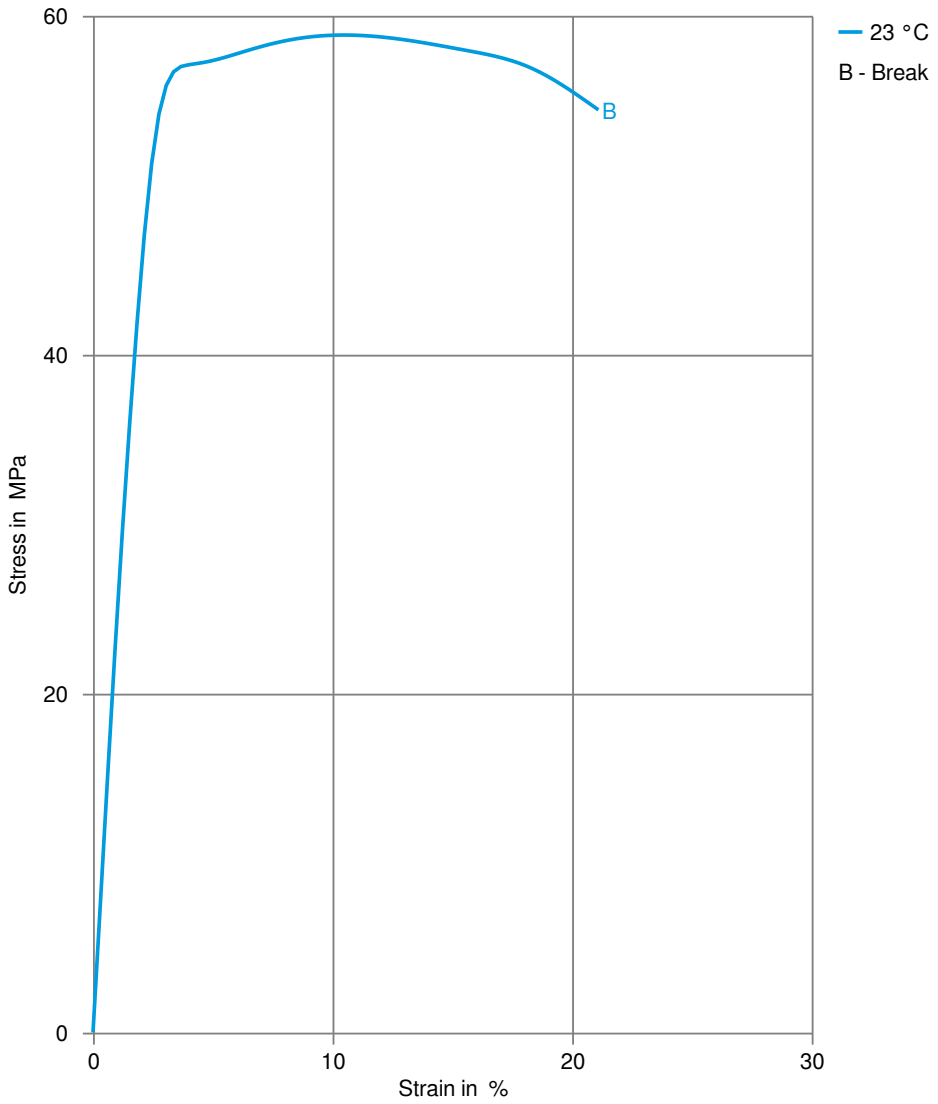
Additional information

Injection molding	Injection speed, injection pressure and holding pressure should be optimized for individual article geometry. To avoid material degradation during processing, low back pressure and minimum screw speed should be used. Overheating of material should be avoided. Up to 25% clean and dry regrind may be used.

Stress-strain



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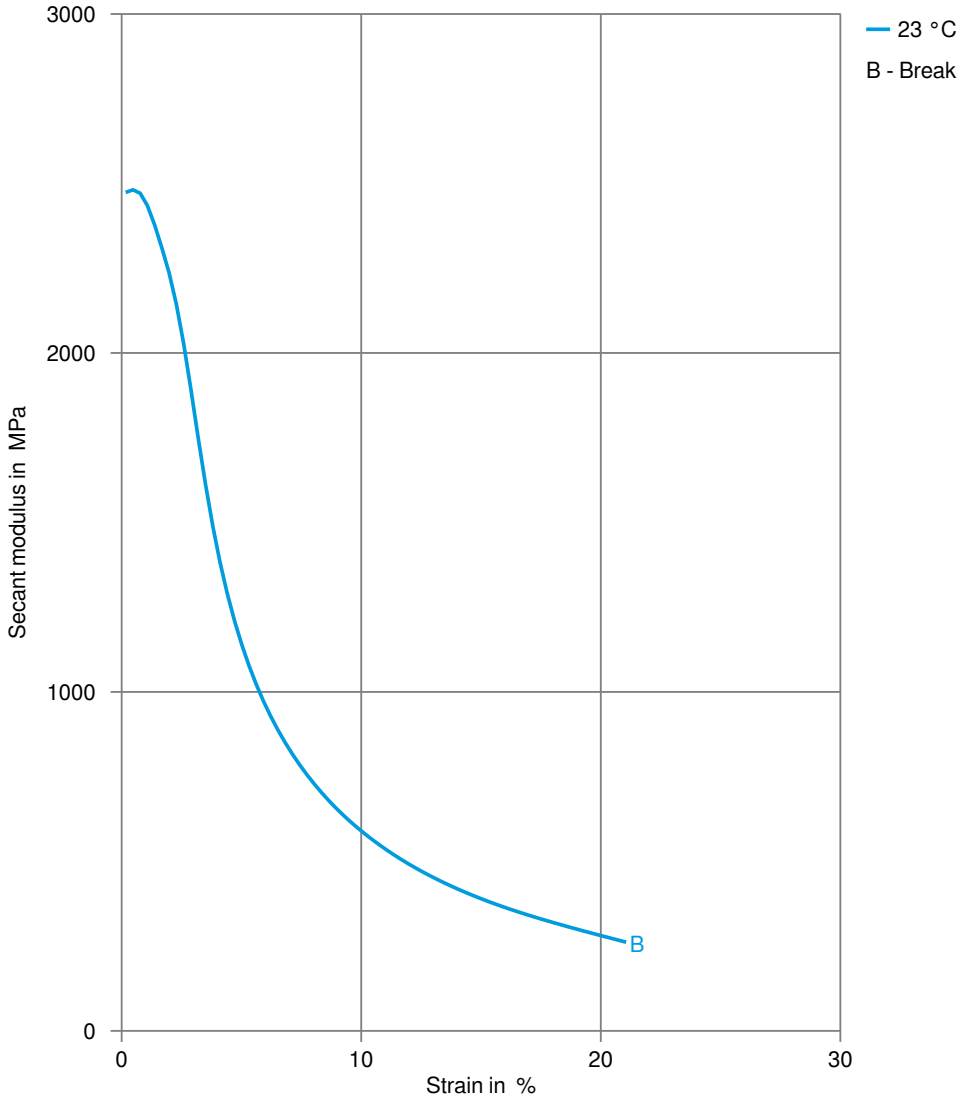
Secant modulus-strain



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Processing Texts

Pre-drying	To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02% prior to processing. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C). Typical drying conditions are 250°F (121°C) for 4 hours. For subsequent storage of material in the dryer until processed, drying temperature should be lowered to 100 deg C and material should not kept in dryer for more than 60 hrs.
Injection molding	Injection speed, injection pressure and holding pressure should be optimized for individual article geometry. To avoid material degradation during processing, low back pressure and minimum screw speed should be used. Overheating of material should be avoided. Up to 25% clean and dry regrind may be used.