Soleic® TPU 1270A Technical Data Sheet

Soleic® TPU 1270A is distributed by ecogenesis biopolymers, LLC. For additional information, questions or concerns, please email: contact@ecogenesis.bio, or your Sales Representative.

Soleic® TPU 1270A

Material - Bio-based, biodegradable aromatic polyester-based Thermoplastic Polyurethane (TPU)

Features - Soft, good mechanical properties, very high flexibility and elongation, 76% bio-based, USDA BioPreferred, biodegradable

Uses - Injection molding, dissolution for paint applications, liquid fabric coating

Material Property*	Value	Unit	Test Method
Hardness	70 +/- 5 (after 5 s)	Shore A	ASTM D2240
Specific Gravity	1.25	g/cm^3	Mass / Volume
Tensile Strength	>16	MPa	JIS K7311
Elongation at Break	>800	%	JIS K7311
100 % Modulus	>2	MPa	JIS K7311
300 % Modulus	>6	MPa	ASTM D638
Abrasion Loss	<90	mm^3	ISO 4649
Tm	170-180	°C	DSC, 10°C/min
Td	325	°C	TGA, 10°C/min
Melt Flow Index	5-10	g/10 min @ Load 10 kg, 180 °C	ASTM D1238
Biocontent	76	%	ASTM D6866

Soleic® TPU 1270A Technical Data Sheet

Supply Form - Soleic® TPU 1270A is supplied in pellet form.

Material Preparation - Prior to processing, Soleic® TPU 1270A pellets must be dried at 50-60 °C for at least 3 hours.

Recommended Starting Extrusion Temperature Profile -** It is recommended to use a temperature range of 205°C-225°C, starting from Zone 1 of the extruder and increasing toward the end of the extrusion head.

Recommended Injection Molding Parameters***

Feed Temperature	25-40 °C
Barrel Temperature(s)	195-205 °C
Nozzle Temperature	205-210 °C
Mold Temperature	25-40 °C

Biodegradation - Following ASTM D5338 methodology, shredded TPU 1270A has been mixed with compost and incubated at 45 °C. As of 180 days the material has achieved 63.6% absolute biodegradation via CO_2 respirometry. As we receive more data, Algenesis is open to providing additional updates.

USDA CERTIFIED BIOBASED PRODUCT PRODUCT 76%

* Preliminary data. Based on hand poured 20 cm x 20 cm sheets that were either die cut into testing shapes or shredded.
** These are estimated extruding parameters based on melt flow and filament extrusion properties. Adjustments on machine parameters may be necessary.
*** These are starting values for injection molding parameters. Adjustments on machine parameters may be necessary.