



Toraypearl™ PA6 GF reinforced

Toray Industries, Inc. - Polyamide 6

General Information

Product Description

Features of PA6(Polyamide 6) resin and particle

- Classified as Engineering Plastics
- High Strength; High heat resistance
- Spherical shape
- Obtaining high-quality parts with smooth surface and high density
- Possible to reduce post-process, polishing and coating, leading to save cost

Toraypearl™ PA6 developed especially for Powder Bed Fusion 3D printing is a spherical PA6 particle with an average particle diameter of about 50 μm.

Adoption Result

Automotive under-the-hood applications(Intake manifold, head cover, oil separator, oil strainer,) Industrial Power tool parts, Office chairs etc.

General

Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight		
Features	<ul style="list-style-type: none"> • Balanced Stiffness/Toughness • Chemical Resistant • Good Flow • Good Thermal Stability • Heat Aging Resistant 	<ul style="list-style-type: none"> • High Density • High Heat Resistance • High Rigidity • High Strength • High Temperature Strength 	<ul style="list-style-type: none"> • Machinable • Outstanding Surface Finish • Pleasing Surface Appearance
Uses	<ul style="list-style-type: none"> • Additive Manufacturing (3D Printing) • Aerospace Applications 	<ul style="list-style-type: none"> • Aircraft Applications • Appliances 	<ul style="list-style-type: none"> • Automotive Applications • Automotive Under the Hood
Processing Method	• 3D Printing, Powder Bed Fusion (PBF)		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.33	g/cm ³	Internal Method
Apparent (Bulk) Density	0.86	g/cm ³	Internal Method
Material Source	MIX		Internal Method
Particle Size Distribution			Internal Method
D10	0.6	mil	
D50	1.9	mil	
D90	2.9	mil	
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress - XY Orientation	9280	psi	ISO 527-1
Tensile Strain - XY Orientation (Break)	3.7	%	ISO 527-1
Flexural Modulus - XY Orientation	754000	psi	ISO 178
Flexural Stress - XY Orientation	15700	psi	ISO 178
Films	Nominal Value	Unit	Test Method
Surface Roughness Ra	10.0	μm	Internal Method
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	423	°F	ISO 75-2/Bf
Deflection Temperature Under Load 264 psi, Unannealed	361	°F	ISO 75-2/Af
Thermal	Nominal Value	Unit	Test Method
Melting Temperature	423	°F	ISO 11357-3