

Technical Data Sheet

Amphora™ 3D Polymer SP1621 Natural

Applications

- Apparel
- Footwear
- Non-kitchen appliances
- Other-transportation
- Point-of-purchase
- Small appliances non-food contact
- Sporting equipment
- Tools
- Tpe
- Truck/bus/rv

Key Attributes

- Ease of Processing
- Flexibility
- High Recyclability
- High printing resolution
- Superior compression and rebound properties
- Toughness

Product Description

Laser-focused customization

Eastman Amphora™ SP1621 3D polymer is ideal for a variety of powder-based additive manufacturing techniques, including laser sintering (LS) processes and non-laser powder-based sintering processes, such as high-speed sintering. One of the highest resolution and production-scalable methods for additive manufacturing, LS systems use lasers to sinter fine powders to create three-dimensional parts. Compared to extrusion methods that use polymer filament, LS printers enable creation of intricate designs because the powder bed acts as a support during the printing process—buttressing the overhangs, undercuts, and thin-walled designs until the polymer sinters.

Other non-laser based technologies use infrared energy instead of lasers to sinter the powdered polymers. Heat-absorbing agents are jetted into the powder to precisely melt it in the desired areas. Amphora™ SP1621 provides significant advantages to both types of processes, including the ability to utilize a broad processing window, recycle the powder that has not been fused, and create highly detailed prints. Amphora™ SP1621 is a superior alternative to thermoplastic polyurethane powder and nylon-based elastomer powders—creating 3D products with enhanced toughness, abrasion resistance, tear and fatigue resistance, and flexibility. And, unlike some other materials, Amphora™ SP1621 requires limited post-processing, saving time and the costs associated with polishing, painting, infiltration, and dyeing.

Typical Properties

Property ^a	Test Method ^b	Typical Value, Units ^c
General Properties		
Density of Powder ^d	ASTM B527-15	0.02 lbs/in ³ (0.53 g/cm ³)
Color		White
Density, Solid Phase @ 20°C	D 792	0.036 lbs/in ³ (0.99 g/cm ³)
Mechanical Properties		
Compression set (22 hours, 70 deg C)	ASTM D395	60 %
Taber Abrasion, weight loss after 1000 cycles using CS-17 and 1 kg load	ASTM D4060	67 mg
Shore A Hardness	D 2240	94 A
Tensile Modulus ^e	D 638	19.4 ksi (134 MPa)
Tensile Strength ^e	D 638	2.0 ksi (14 MPa)
		28 %

Elongation @ Break ^e	D 638	
Tensile Modulus ^f	D 638	20.7 ksi (143 MPa)
Tensile Strength ^f	D 638	2.5 ksi (17 MPa)
Elongation @ Break ^f	D 638	129 %

^aUnless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.

^bUnless noted otherwise, the test method is ASTM.

^cUnits are in SI or US customary units.

^dTap Density

^eZ axis

^fX axis

Comments

Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.

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