



# PA-11(A) MATERIALS

## SPECIFICATIONS

### STEP™ PA-11(A) Material Properties Data Sheet

PA-11(A) is a bio-based PA-11 amorphous co-polyamide. It is a perfect material for producing strong, ductile functional parts with a low carbon footprint. PA-11(A) has excellent chemical resistance, fatigue resistance, flexibility and stress crack resistance.

Mechanical Properties	Test Sample Type	Test Method	Units	Typical Values
Tensile Modulus	Type V, 5mm/min	ASTM D638	MPa	>1400
Tensile Modulus	ISO-1BA	ISO 527-1BA	MPa	>1400
Ultimate Tensile Strength	Type V, 5 mm/min	ASTM D638	MPa	≥50
Ultimate Tensile Strength	ISO-1BA	ISO 527-1BA	MPa	≥52
% Elongation to Break	Type V, 5 mm/min	ASTM D638	%	≥40
% Elongation to Break	ISO-1BA	ISO 527-1BA	%	≥15
Charpy Notched, 23C	80x10x4mm, notch type A	ISO 179-1:2010	kJ/m2	>7.5

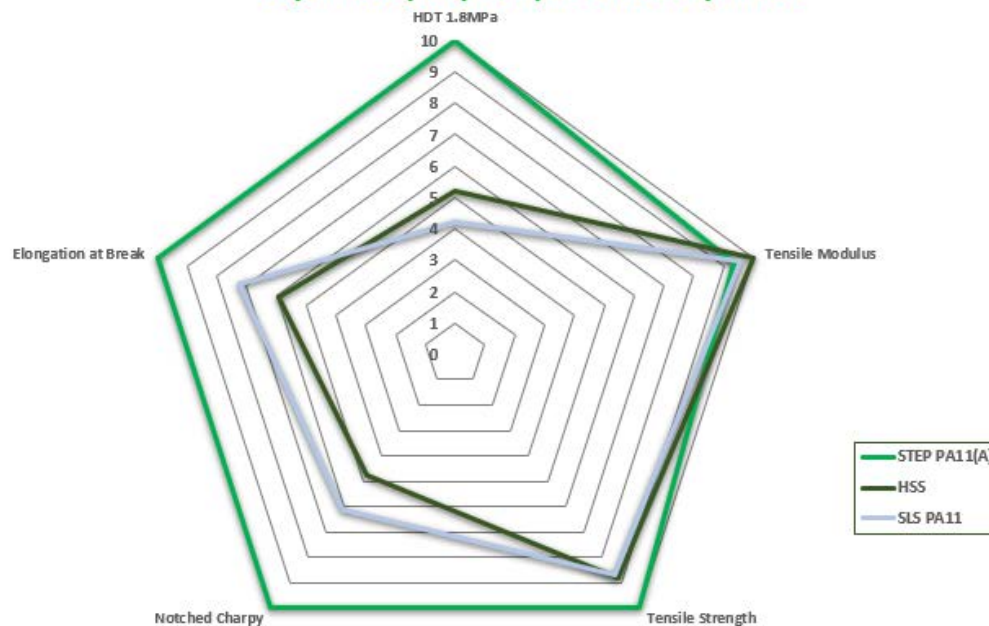
# PA11-(A) MATERIALS SPECIFICATIONS

Thermal Properties	Test Sample Type	Test Method	Units	Typical Values
Glass Transition Temperature (Tg)	N/A	DSC (internal method)	°C	105
Heat Deflection Temperature	1.82 MPa	ASTM D648	°C	120
Heat Deflection Temperature	0.45 MPa	ASTM D648	°C	135

Additional Properties	Test Method	Units	Typical Values
Specific Gravity	ASTM D792	Unitless	1.01
Density	ISO 1183	gm/cm <sup>3</sup>	1.01
Flame Classification	IEC 60695-11-10	N/A	V-2

Flame Characteristics	Value	Test Method	Units
UL Recognized, 94HB Flame Class Rating (3)	1.6	EC 60695-11-10	mm

## Physical Property Comparison to Polyamides



## LEARN MORE

### HEADQUARTERS

5600 Rowland Rd, Suite 180  
Minnetonka, MN 55343  
info@evolveadditive.com

### MATERIAL TECHNOLOGY CENTER

285 Metro Park, Unit 100  
Rochester, NY 14623