

# INVISTA

## U5101 PA66 Resin

### Product Description

INVISTA U5101 is a general purpose, natural PA66 resin suitable for compounding, injection molding, and extrusion applications where ease of processing, good color, and physical property retention are desired.

	Properties (dry)	Value	Units	Method
Viscosity	RV in formic acid, nominal	51	–	ASTM D789
	VN at 0.5% in sulfuric acid, nominal	155	mL/g	ISO 307
	RV at 1% in sulfuric acid, nominal	2.8	–	–
Physical	Density	1.14	g/cm <sup>3</sup>	ISO 1183
	Mold shrinkage, 2.0 mm, parallel	1.6	%	ISO 294-4
	Mold shrinkage, 2.0 mm, transverse	1.9	%	ISO 294-4
	Water absorption - 24 hours	1.6	%	ISO 62
	Water absorption - equilibrium @ 50% RH	2.6	%	ISO 62
Mechanical	Tensile strength at yield	80	MPa	ISO 527
	Elongation at yield	3.8	%	ISO 527
	Elongation at break	30	%	ISO 527
	Tensile modulus	2850	MPa	ISO 527
	Flexural modulus	2900	MPa	ISO 178
	Flexural strength	92	MPa	ISO 178
	Notched Charpy at 23°C	4.7	kJ/m <sup>2</sup>	ISO 179
	Notched Charpy at -30°C	4.1	kJ/m <sup>2</sup>	ISO 179
	Unnotched Charpy at 23°C	NB	kJ/m <sup>2</sup>	ISO 179
	Unnotched Charpy at -30°C	NB	kJ/m <sup>2</sup>	ISO 179
	Notched Izod at 23°C	4.8	kJ/m <sup>2</sup>	ISO 180
Thermal	Melting temperature, 10°C/min	262	°C	ISO 11357
	HDT at 0.45 MPa	207	°C	ISO 75
	HDT at 1.80 MPa	65	°C	ISO 75

## General Information

### Material Status

Commercial: Active

### Availability

- North America
- South America
- Europe
- Asia

### Features

- Exceptionally high flow
- Excellent mechanical properties in glass-fiber-reinforced resins

### RoHS

No intentional additives or ingredients used in U5101 are among those in European directive 2011/65/EC (RoHS), as amended.

## Process Guidelines for Molding

Drying temperature	80°C
Drying time*	6 - 10 hrs
Barrel temperatures	
Rear	250 – 270°C
Middle	270 – 290°C
Front	270 – 290°C
Nozzle	270 – 295°C
Processing temperature (melt)	280 – 295°C
Mold temperature	50 – 90°C
Back pressure**	2 - 10 bar
Vent depth	0.007 - 0.04 mm
Cushion (range)	4 – 6 mm
Suggested moisture (max)	0.20 wt%
Suggested moisture (min)	0.10 wt%
Screw Speed	75 - 180 rpm

\* Initial moisture below 0.4 wt%. Use dehumidified air.

\*\* Melt pressure

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