

INVISTA

U4591 PA66 Resin

Product Description

INVISTA U4591 is a PA66 feedstock resin produced with a very high level of amine ends groups. Primary use is compounding.

	Properties (dry)	Value	Units	Method
Viscosity	RV in formic acid, nominal	45	–	ASTM D789
	VN at 0.5% in sulfuric acid, nominal	145	mL/g	ISO 307
	RV at 1% in sulfuric acid, nominal	2.65	–	–
Physical	Density	1.14	g/cm ³	ISO 1183
	Mold shrinkage, 2.0 mm, parallel	1.2	%	ISO 294-4
	Mold shrinkage, 2.0 mm, transverse	1.4	%	ISO 294-4
	Water absorption - 24 hours	1.8	%	ISO 62
	Water absorption - equilibrium @ 50% RH		%	ISO 62
Mechanical	Tensile strength at yield	81	MPa	ISO 527
	Elongation at yield	4.3	%	ISO 527
	Elongation at break	35	%	ISO 527
	Tensile modulus	2900	MPa	ISO 527
	Flexural modulus	3000	MPa	ISO 178
	Flexural strength	97	MPa	ISO 178
	Notched Charpy at 23°C	5.5	kJ/m ²	ISO 179
	Notched Charpy at -30°C	4.9	kJ/m ²	ISO 179
	Unnotched Charpy at 23°C	NB	kJ/m ²	ISO 179
	Unnotched Charpy at -30°C	NB	kJ/m ²	ISO 179
Thermal	Notched Izod at 23°C	4.4	kJ/m ²	ISO 180
	Melting temperature, 10°C/min	262	°C	ISO 11357
	HDT at 0.45 MPa	197	°C	ISO 75
	HDT at 1.80 MPa	67	°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 U4591 are among those in European directive 2011/65/EC (RoHS), as amended.

Process Guidelines for Molding

Drying temperature	80°C
Drying time*	6 - 12 hrs
Barrel temperatures	
Rear	250 – 270°C
Middle	270 – 290°C
Front	270 – 290°C
Nozzle	270 – 290°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 0.5 wt%. Use dehumidified air.

** Melt pressure

Product Data Sheet Disclaimer This Product Data Sheet relates only to the identified product and any identified uses. It is based on information available as of August 2022. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. THIS PRODUCT DATA SHEET DOES NOT CONTAIN A COMPLETE STATEMENT OF, AND DOES NOT CONSTITUTE A REPRESENTATION, WARRANTY OR GUARANTY WITH REGARD TO, A PRODUCT'S CHARACTERISTICS, USES, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THE SUITABILITY, SAFETY, EFFICACY, HAZARDS OR HEALTH EFFECTS OF THE PRODUCT, WHETHER USED SINGULARLY OR IN COMBINATION WITH ANY OTHER PRODUCT, EXCEPT TO THE EXTENT REQUIRED BY THE RELEVANT LAW AND REGULATIONS. Nothing contained in this Product Data Sheet shall be construed to modify any of the terms under which the product was sold by INVISTA. INVISTA and design are trademarks of INVISTA.