Product Information: DAM & Conditioned Properties

INVISTA
U4820L PA66 Resin

Product Description

INVISTA U4820L is a general purpose, natural PA66 resin suitable for injection molding and extrusion applications where fast cycles are required. It is lubricated internally and externally for excellent machine feed and mold release.

	Properties (dry)	DAM	50% RH*	Units	Method
Viscosity	RV in formic acid, nominal	48	–	–	ASTM D789
	VN at 0.5% in sulfuric acid, nominal	150	–	mL/g	ISO 307
	VN at 0.5% in formic acid, nominal	137	–	mL/g	ISO 307
	RV at 1% in sulfuric acid, nominal	2.7	–	–	Modified ISO 307
Physical	Density	1.14	–	g/cm^3	ISO 1183
	Mold shrinkage, 2.0 mm, parallel	1.5	–	%	ISO 294-4
	Mold shrinkage, 2.0 mm, transverse	1.8	–	%	ISO 294-4
	Water absorption - 24 hours	1.8	–	%	ISO 62
	Water absorption - equilibrium @ 50% RH	2.6	2.6	%	ISO 62
Mechanical	Tensile strength at yield	82	49	MPa	ISO 527
	Elongation at yield	4.2	25	%	ISO 527
	Elongation at break	35	>50	%	ISO 527
	Tensile modulus	3200	1180	MPa	ISO 527
	Flexural modulus	2900	1100	MPa	ISO 178
	Flexural strength	95	33	MPa	ISO 178
	Notched Charpy at 23°C	5.5	15	kJ/m^2	ISO 179
	Notched Charpy at -30°C	4.3	5.2	kJ/m^2	ISO 179
	Unnotched Charpy at 23°C	NB	NB	kJ/m^2	ISO 179
	Unnotched Charpy at -30°C	NB	BN	kJ/m^2	ISO 179
	Notched Izod at 23°C	5.4	12	kJ/m^2	ISO 180
Thermal	Melting temperature, 10°C/min	261	–	°C	ISO 11357
	HDT at 0.45 MPa	204	–	°C	ISO 75
	HDT at 1.80 MPa	66	–	°C	ISO 75
	Ball Pressure, 3.0 mm	240	–	–	IEC 60695
	CLTE, 2.0 mm, Parallel, 23 - 55°C	0.9	–	10^{-4}/ °C	ISO 11359
	CLTE, 2.0 mm, Transverse, 23 - 55°C	1.1	–	10^{-4}/ °C	ISO 11359

	Properties (dry)	Value	50% RH*	Units	Method
Electrical	Volume Resistivity, 2.0 mm	2E+14	–	ohm-cm	IEC 60093
	High Voltage Arc Tracking Rate	PLC 0	–	–	UL 746A
	Dielectric Strength, 1.0 mm	18	–	kV/mm	UL 746A
	Comparative Tracking Index, 3.0 mm	600	–	Volts	IEC 60112
Flammability	Flame Rating at 0.40 mm	V-2	V-2	–	UL 94
	Flame Rating at 0.71 mm	V-2	V-2	–	UL 94
	Flame Rating at 1.5 mm	V-2	V-2	–	UL 94
	Flame Rating at 3.0 mm	V-2	V-2	–	UL 94
	Glow-Wire Flammability at 0.71 mm	960		°C	IEC 60695
	Glow-Wire Flammability at 1.5 mm	960		°C	IEC 60695
	Glow-Wire Flammability at 3.0 mm	960		°C	IEC 60695

* 50% RH conditioned properties on specimens conditioned per ISO 1110.

General Information

Material Status
Commercial: Active

Availability
- North America
- South America
- Europe
- Asia

Features
Excellent whiteness and processability

Classification
ASTM D4066 classification PA0111

RoHS
No intentional additives or ingredients used in U4820L are among those in European directive 2011/65/EC (RoHS), as amended.

Process Guidelines for Molding	
Drying temperature	80°C
Drying time*	3 - 4 hrs
Barrel temperatures	
Rear	250 - 280°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**	5 - 30 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	50 - 150 rpm

* Initial moisture below 0.25 wt%. Use dehumidified air.
** Melt pressure