

NOVALAC RX®613

Phenolic

Vyncolit N.V.

Message:

NOVALAC RX®613 is a phenolic (Phenolic) material, and its filler is glass fiber reinforced material. This product is available in North America, Africa and the Middle East, Latin America, Europe or Asia Pacific. The processing methods are: resin transfer molding, compression molding or injection molding.

NOVALAC RX®The main features of the 613 are:

flame retardant/rated flame

chemical resistance

high strength

Creep resistance

Good dimensional stability

Typical application areas include:

Electrical/electronic applications

engineering/industrial accessories

electrical appliances

House

Tools

General Information	
Filler / Reinforcement	Glass fiber reinforced material
Features	Ultra high toughness
	Good dimensional stability
	Low smoke
	High strength
	Antibacterial property
	Solvent resistance
	Good creep resistance
	alkali resistance
Uses	acid resistance
	Membrane key switch
	Pump parts
	Gear
	Electrical/Electronic Applications
	Electrical appliances
	Power/other tools
	Connector
Forms	Application in Automobile Field
	Shell
Processing Method	Particles
	Resin transfer molding
	Compression molding

Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.60	g/cm ³	ASTM D792, ISO 1183
Bulk Factor	2.1		ASTM D1895
Molding Shrinkage			
Flow: Molding	0.25	%	ASTM D955
Flow direction	0.25	%	ISO 294-4
Water Absorption (23°C, 24 hr)	0.080	%	ASTM D570, ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (E-Scale)	100		ASTM D785, ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress			
Fracture	85.0	MPa	ISO 527-2
--	107	MPa	ASTM D638
Flexural Modulus			
--	12400	MPa	ASTM D790
--	13000	MPa	ISO 178
Flexural Strength			
--	176	MPa	ASTM D790
--	150	MPa	ISO 178
Compressive Strength	296	MPa	ASTM D695
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
--	37	J/m	ASTM D256A
--	2.5	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, not annealed	202	°C	ASTM D648
1.8 MPa, not annealed	185	°C	ISO 75-2/A
CLTE - Flow	1.6E-5	cm/cm/°C	ASTM D696
Thermal Conductivity	0.41	W/m/K	ASTM C177
RTI Elec	150	°C	UL 746
RTI Imp	150	°C	UL 746
RTI	150	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength			
-- ¹	14	kV/mm	ASTM D149
-- ²	13	kV/mm	ASTM D149
--	14	kV/mm	IEC 60243-1
Arc Resistance	150	sec	ASTM D495
Flammability	Nominal Value	Unit	Test Method

Flame Rating		UL 94
1.59 mm	V-0	UL 94
3.18 mm	V-0	UL 94

Injection	Nominal Value	Unit
Rear Temperature	60.0	°C
Middle Temperature	73.9	°C
Nozzle Temperature	87.8	°C
Processing (Melt) Temp	98.9 - 116	°C
Mold Temperature	166 - 188	°C
Back Pressure	0.207	MPa

Injection instructions

Plastication: 50rpm Injection Pressure: Set to give 3 to 5 seconds injection time Hold Pressure: 50 to 100% of injection pressure Hold Time: 10 sec minimum Cure Time, 0.125 in: 30 to 35 sec The value listed as Thermal Conductivity, ASTM C177, was tested in accordance with ASTM C518. The value listed as Molding Shrinkage, ISO 294-4, was tested in accordance with ISO 2577 using compression molded specimens. Water Absorption, ASTM D570, 48 hrs, 50°C: 0.27% Flexural Strain, ASTM D790: 1.5% DTUL @264psi - Unannealed, ASTM D648, Post Baked: 550°F Dielectric Strength, ASTM D149, 60 Hz, Method A, wet: 360 V/mil Dielectric Strength, ASTM D149, 60 Hz, Method B, wet: 330 V/mil Compressive Strength, ISO 604: 350 MPa Dielectric Strength, IEC 243, Method A, wet: 14 V/mil Compression and Transfer Molding Conditions:
Preforming Pressure: 8000 to 12000 psi
Preheat Temperature: 210 to 235 °F
Preheat Time: 45 sec
Mold Temperature: 330 to 360 °F
Compression Mold Pressure: 2500 to 5000 psi
Transfer Mold Pressure: 4000 to 6000 psi
Cure Time, 0.125 in: 40 to 50 sec

NOTE

1. Method A (short time)
2. Method B (step by step)

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