



# NORYL®

(polyphenylene oxide, modified)

NORYL®, due to its inherent chemical composition, exhibits unusually low moisture absorption. Therefore, good electrical insulating properties are realized

over a wide range of humidity and temperature conditions. Chemical attack from water, most salt solutions, acids and bases is also minimal with NORYL®. The

addition of glass fiber reinforcement enhances both the mechanical and thermal properties of the basic NORYL® material.

- **Good electrical insulating properties**  
Due to its extremely low water absorption with values as low as 0.07%, NORYL® is an excellent electrical insulating material.
- **Long-term dimensional stability**
- **Superior impact strength**  
NORYL® has a notched Izod impact strength of 3.5 ft-lbs/in.
- **NORYL® exhibits a continuous use temperature in excess of 220°F**
- **Wide range of UL flammability ratings from UL94 HB to UL94 V-1**
- **FDA compliance for certain grades**
- **Light weight**  
NORYL®, with a density of 0.0383 lbs/in<sup>3</sup>, can be used in applications where weight is a significant consideration.
- **Thermoformable capability**
- **Possesses good hydrolytic stability**

*NORYL® exhibits a broad range of outstanding properties for applications in computers and business equipment, automotive, electrical insulation, telecommunications, appliances, electronics, and many other industries.*

# TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	NORYL®
PHYSICAL	Density	D792	lbs/in <sup>3</sup>	0.0383
	Specific Gravity	D792	-	1.08
	Water Absorption, @ 24 hours, 73°F	D570	%	0.07
	@ Saturation, 73°F	-	-	-
MECHANICAL	Tensile Strength @ Break, 73°F	D638	psi	9,200
	Tensile Modulus, 73°F	D638	psi	3.5 X 10 <sup>5</sup>
	Elongation @ Break, 73°F	D638	%	25
	Flexural Strength, 73°F	D790	psi	13,400
	Flexural Modulus, 73°F	D790	psi	3.7 X 10 <sup>5</sup>
	Compressive Strength	D695	psi	-
	Izod Impact Strength, Notched, 73°F	D256	ft-lbs/in	3.5
	Rockwell Hardness, 73°F	D785	"R" Scale	119
	Shore Hardness	-	-	-
	Wear Factor Against Steel, 40 psi, 50 fpm	-	-	-
	Static Coefficient of Friction	-	-	0.32
	Dynamic Coefficient of Friction, 40 psi, 50 fpm	-	-	0.39
THERMAL	Heat Deflection Temperature @ 66 psi	D648	°F	279
	@ 264 psi	D648	°F	254
	Coefficient of Linear Thermal Expansion	D696	in/in/°F	3.3 x 10 <sup>-5</sup>
	Maximum Servicing Temperature, Intermittent	-	°F	230
	Long Term	-	°F	220
	Specific Heat	-	-	-
	Thermal Conductivity	-	-	-
	Vicat Softening Point	-	°F	310
Applicable Temperature Range for Thermal Expansion	-	°F	0-140	
Flammability	UL94	-	V-1	
ELECTRICAL	Surface Resistivity	-	-	-
	Volume Resistivity, 73°F	D257	ohm-cm	1 x 10 <sup>17</sup>
	Dielectric Strength	D149	V/mil	500
	Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150	-	2.7
	Dissipation Factor, @ 60 HZ, 73°F	D150	-	0.0007

This information is only to assist and advise you on current technical knowledge and is given without obligation or liability. All trade and patent rights should be observed. All rights reserved. NORYL®-General Electric Company.

## MATERIAL AVAILABILITY

**Rods:** Diameters: 3/16" to 8"

Length: 3/16" to 4-3/4" - 10'  
5" to 8" - 5'

**Plates:** 1/4" to 4" thickness inclusive are 2' x 4'

## Primary Specification (Typical)

ASTM D-4349PPE220B50541 F13 G1106

*Profiles, tubes, and special sizes are custom-produced on request.*



**ENSINGER-HYDE**

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