

## Noryl\* Resin WCP921A

### Americas: COMMERCIAL

Flexible Noryl\* injection molding grade. Low specific gravity with good non-halogenated flame retardant performance. Developed for overmolding applications such as plugs, strain reliefs, and connectors. UL 94 V-0 performance with good processability. GreenScreen Approved.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, brk, Type I, 50 mm/min	90	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	120	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	1100	kgf/cm <sup>2</sup>	ASTM D 790
Hardness, Shore A, 30S reading	92	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	9	MPa	ISO 527
Tensile Strain, break, 50 mm/min	120	%	ISO 527
Flexural Modulus, 12.5 mm/min	110	MPa	ISO 178
<b>IMPACT</b>			
Brittleness Temperature	<-40	°C	ASTM D 746
<b>PHYSICAL</b>			
Specific Gravity	1.04	-	ASTM D 792
Water Absorption, 23°C/48hrs	0.1	%	ASTM D 570
Mold Shrinkage, flow, 24 hrs (5)	0.4	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs (5)	0.4	%	ASTM D 955
Melt Flow Rate, 210°C/5 kgf	12	g/10 min	ASTM D 1238
Melt Flow Rate, 250°C/2.16 kgf	10	g/10 min	ASTM D 1238
<b>ELECTRICAL</b>			
Volume Resistivity	4.E+15	Ohm-cm	ASTM D 257
Dielectric strength in oil, 2.0mm	23	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.8	-	IEC 60250
Dissipation Factor, 1 MHz	0.006	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating (3)	6	mm	UL 94
Glow Wire Flammability Index 850°C, passes at	3	mm	IEC 60695-2-12

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23±176.C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

Source GMD, last updated:

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>FLAME CHARACTERISTICS</b>			
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13
Oxygen Index (LOI)	24	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	60 - 80	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.01	%
Melt Temperature	220 - 250	°C
Nozzle Temperature	220 - 250	°C
Front - Zone 3 Temperature	220 - 250	°C
Middle - Zone 2 Temperature	210 - 240	°C
Rear - Zone 1 Temperature	180 - 220	°C
Mold Temperature	40 - 60	°C
Back Pressure	3 - 10	MPa
Screw Speed	30 - 80	rpm
Shot to Cylinder Size	30 - 70	%
Vent Depth	0.03 - 0.05	mm

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