NORYL™ Resin WCP821
Asia Pacific: COMMERCIAL

Flexible Noryl* injection molding grade. Low specific gravity with very good non-halogenated flame retardant performance. Developed for evaluation in over-molding applications such as plugs, strain relief's, and connectors. UL 94-V0 performance with good processability.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	100	kgf/cm²	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	125	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	1100	kgf/cm²	ASTM D 790
Hardness, Shore A, 30S reading	82	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	10	MPa	ISO 527
Tensile Strain, break, 50 mm/min	115	%	ISO 527
Flexural Modulus, 12.5 mm/min	130	MPa	ISO 178
Tear strength	17	N/mm	ISO 6383
IMPACT			
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
Specific Gravity	1.05	-	ASTM D 792
Water Absorption, 23°C/48hrs	0.1	%	ASTM D 570
Mold Shrinkage, flow, 24 hrs (5)	0.48	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs (5)	1.09	%	ASTM D 955
Melt Flow Rate, 210°C/5 kgf	31	g/10 min	ASTM D 1238
Melt Flow Rate, 250°C/2.16 kgf	33	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	2.2E+15	Ohm-cm	ASTM D 257
Dielectric strength in oil, 2.0mm	25	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 1 MHz	0.004	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	5	mm	UL 94

(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°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[1]	TYPICAL VALUE	Unit	Standard
FLAME CHARACTERISTICS			
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	70	-	ASTM E 662
Smoke Density on 0.5mm plaque, Flame, Ds, max	90	-	ASTM E 662
Glow Wire Flammability Index 850°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Oxygen Index (LOI)	25	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
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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