

Developmental Product Information

Nylon NST6065L.SPN, NST6065HL.SPN and NST6065HSL.SPN

NST6065L SPN is a extrusion grade of nylon 6 that has been formulated to provide a combination of flexibility, practical toughness and chemical resistance. The product has high melt strength that enables tubing of a wide range of diameters to be extruded easily. For applications that require exposure to elevated temperatures **NST6065HSL.SPN** containing an effective heat stabilizer system is recommended. For tubing that is required to be manufactured in different colors, **NST6065HL.SPN** has been formulated with a special non-tinting heat stabilizer system.

Typical Properties DRY AS MOLDED

<u>PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>ENGLISH</u>		<u>S.I.</u>	
		<u>UNITS</u>	<u>VALUE</u>	<u>UNITS</u>	<u>VALUE</u>
Melting Range	D789	°F	420-428	°C	215-220
Specific Gravity	D792	-	1.08	-	1.08
Water Absorption (24 hours immersion)	D570	%	1.1	%	1.1
Heat Deflection Temperature at 264 lbs/in ² (1.82 MPa)	D648	°F	115	°C	46
Tensile Strength at Yield	D638	lbs/in ²	7,000	MPa	50
Elongation at Break	D638	%	100 min	%	100
Flexural Strength	D790	lbs/in ²	9,000	MPa	62
Flexural Modulus	D790	lbs/in ²	250,000	MPa	1,724
Izod Impact Strength @ 25 °C (Notched, 1/8" specimen)	D256	ft. lbs/in of notch	6 min	J/m	320 min



Nylon NST6065L.SPN and NST6065HSL.SPN EXTRUSION GUIDELINES

Material Handling

NST6065HSL.SPN Blend is supplied in sealed containers, and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 180°F is recommended. Drying time is dependent upon moisture level, and resin should be dried to less than 0.20% moisture. Further information concerning safe handling procedures can be obtained from the Product Material Safety Data Sheet.

Melt Temperature

NST6065HSL.SPN Blend exhibits a crystalline melting point of 420°F, and a melt temperature range of 480-500°F is recommended for most applications. A typical barrel profile is as follows (°F) with all zones set at 440°F:

Rear:	430-470	Flange:	440-470
Middle:	430-470	Head:	440-470
Front:	440-490	Die:	440-470

Screw Recommendations

Length to Diameter Ratio:	20:1 to 24:1
Compression Ratio:	3.5:1 to 4.0:1
Metering Section:	40% of Screw Flights
Transition Section:	6-7 Flights
Feed Section	Balance of Screw Flights

Tooling

Pin and die sizes will vary dependent upon tube specification and are selected based on draw ratio of 8:1 to 10:1. Suggested tooling based on finished tubing of 3/8" outside diameter or smaller for open tank sizing and quenching is:

Bushing (Die) I.D.	=	2.5 x (Finished O.D.)
Pin (Mandrel) I.D.	=	Bushing I.D.-(2 x annular die opening)
Annular Die Opening	=	(Finished Wall x 2.5) + 0.010 inches

Sizing

Proper sizing of tubing can be accomplished through use of either an open quench tank in conjunction with a low pressure air control system, and sizing plates, or in a differential pressure (vacuum) tank. Above 3/8" O.D. vacuum is preferred.

Quenching

For diameters of 3/8" O.D. and smaller, open tank quenching with normal tap water is suggested. Depending upon line speed, quenching distance can vary from 25 to 40 feet. A short air gap (die to quench water) is recommended for both tubing and cable jacketing for best flexibility.

