Aegis® H100NP Nylon 6 Extrusion Grade Homopolymer

NYLON SOLUTIONS

DESCRIPTION

Aegis® H100NP is a medium viscosity, nylon 6 extrusion grade homopolymer for cast or blown film. It conforms to FDA requirements of 21 CFR 177.1500 as well as EU Directive 2011/10/EC. Aegis® H100NP homopolymer possesses the combination of strength, toughness and thermoforming properties associated with nylon 6 as well as excellent heat, chemical and abrasion resistance.

PHYSICAL AND CHEMICAL PROPERTIES

GENERAL PROPERTIES	ASTM TEST METHOD	DRY	CONDITIONED
Parameter Viscosity, FAV	D-789	100	-
96% SAV		3.37	-
Melt Flow Rate 235°C/1.0 kg (455°F/1.0 kg); g/10 min	D-1238	2.6	-
Gas Barrier @ 23°C (73°F)/0% RH Oxygen Permeability cc.25µm/m²/day (cc-mil/100 in²/day)		40.3 (2.600)	-
Nitrogen Permeability cc.25µm/m²/day (cc-mil/100 in²/day)		14.0 (0.903)	-
Carbon Dioxide Permeability cc.25µm/m²/day (cc-mil/100 in²/day)		72.8 (4.697)	-
Moisture Moisture Content, %		Max. 0.05	-
Extractable Content, %		Max. 0.8	-
Water Absorption in 24 hrs, %		1.6	-
Equilibrium Moisture @ 50% RH, %		2.7	-
Saturation Moisture Content, %		9.5	-
Density, g/cm³	D-1505	1.13	-
Thermal Melting Point	D-3418	220°C (428°F)	-

PROCESSING GUIDELINES

Material Handling

Aegis® H100NP homopolymer is supplied in sealed containers and drying prior to processing is not required. However, high moisture is the primary cause of processing problems. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80°C (176°F) is recommended. Drying time is dependent on moisture level. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet on AdvanSix.com. Alternatively, please contact your AdvanSix representative.

EXTRUSION GUIDELINES

Melt Viscosity vs. Temperature

Melt Temperature: 220°C (428°F)

Melt Temperature Range: 232°C (450°F) to 271°C (520°F).

Two key factors affect the melt viscosity (stiffness or fluidity of the melt):

1. The molecular weight (MW) of the resin: Higher MW resins will have a higher melt viscosity than lower MW resins.
2. Temperature of the melt for any given MW resin: Higher process temperatures will provide a more fluid melt viscosity than lower process temperatures.

Typical Barrel Profile for Cast Films

Barrel: 230-260°C (446-500°F)

Adapter: 260-266°C (500-510°F)

Die: 260°C (500°F)

Process Melt Temperature: 260-270°C (500-518°F)

Screw Parameters

Metering Section: 40%

Transition Section: 3 to 4 flights

Feed Section: Balance of screw length

Compression Ratio: 3.5:1 to 4.0:1

L/D Ratio: 24:1

Typical Barrel Profile for Tubular (Blown) Films

Barrel: 246-254°C (474-490°F)

Adapter: 260°C (500°F)

Die: 254°C (490°F)

Process Melt Temperature: 254-260°C (490-500°F)

Metering Section Flight Depth

SCREW DIAMETER	RECOMMENDED DEPTH
1"	0.055"
1.5"	0.060"
2"	0.070"
2.5"	0.080"
3.5"	0.100"
4.5"	0.115"
6"	0.135"

NOTE

The values presented in this data sheet are typical values and are not to be interpreted as product specifications.

The values in this data sheet are for natural color resins only. Colorants or other additives may alter some or all of these properties. The data listed here fall within the normal range of product properties, but should not be used to establish specification limits nor used alone as the basis of design.

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CONTACT ADVANSIX

Contact AdvanSix to learn more about the benefits of our Nylon Resins.

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