NYLON SOLUTIONS

Aegis® H120ZP Nylon 6 Extrusion Grade Homopolymer

Description

Aegis® H120ZP is a high viscosity, nylon 6 extrusion grade homopolymer for cast or blown film applications. It conforms to FDA requirements of 21 CFR 177.1500 as well as EU Directive 2011/10/EC. Aegis® H120ZP homopolymer possesses the combination of strength, toughness and thermoforming properties associated with nylon 6 as well as excellent heat, chemical and abrasion resistance.

Typical Properties	Test Method	Units	Value
Parameter			
Viscosity, FAV	ASTM D-789		120
RV @ 96% Sulfuric Acid			3.6
Extractable Content	SOP-702-307	%	Max. 0.8
Density	ASTM D-792	g/cm^3	1.13
Melt Flow Rate, 235°C/1.0 kg (455°F/1.0 kg)	ASTM D-1238	g/10 min	1.9
Moisture			
Moisture Content	ASTM D-6869	%	Max. 0.08
Moisture (24 Hour)	ASTM D-570	%	1.6
Moisture (50% RH)	ASTM D-570	%	2.7
Moisture (Saturation)	ASTM D-570	%	9.5
Thermal			
Melting Point	ASTM D-3418	°C (°F)	220°C (428°F)

Typical Film Properties	Test Method	Units	Value
Gas Barrier @ 23°C (73°F)/0% RH			
Oxygen Permeability	D-3958	cc.25µm/m²/day (cc.mil/100 in²/day)	40.3 (2.6)
Water Vapor Permeability @ 38°C (100°F)/100% RH	F-1249	gm.25µm/m²/day (gm.mil/100 in²/day)	992 (64)
Nitrogen Permeability		cc.25µm/m²/day (cc.mil/100 in²/day)	14.0 (0.9)
Carbon Dioxide Permeability		cc.25µm/m²/day (cc.mil/100 in²/day)	72.8 (4.7)

Processing Guidelines

Material Handling

Aegis® H120ZP 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. Alternatively, please contact your AdvanSix representative.

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

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)

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)

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

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 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.

Contact AdvanSix
To learn more about the benefits of of Aegis® Nylon Resins, visit **AdvanSix.com/NylonSolutions** or call:
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