Aegis® H55WCX Nylon Compound

NYLON SOLUTIONS

DESCRIPTION

Aegis® H55WCX is a medium viscosity, heat stabilized, nylon 6 universal wire jacket compound providing excellent performance across the range of THHN, THWN and TFFN constructions. It also offers a well-balanced set of properties including extra flexibility for cold and dry environments, toughness, abrasion and crush resistance, and resistance to oil, gas and other hydrocarbons. Aegis® H55WCX nylon compound has been investigated in accordance with the test methods outlined in ANSI/UL 1581 and ANSI/UL 83 and is certified under UL QMTT2 for use in wire, cable and flexible lighting products.

PERFORMANCE OVERVIEW

TYPICAL PROPERTIES	TEST METHOD-ASTM	DRY	CONDITIONED*
PHYSICAL PROPERTIES			
Density, g/cm^3	D-792	1.14	
Rockwell Hardness, R Scale	D-785-08A	116	80
MECHANICAL PROPERTIES			
Tensile Strength, Yield, psi @ 23°C (73°F)	D-638-10	9,300	4,480
Elongation, Yield, % @ 23°C (73°F)	D-638-10	4.6	34
Elongation, Break, % @ 23°C (73°F)	D-638-10	180	360
Flexural Modulus, psi	D-790-10A		
-40°C (-40°F)		521,000	601,000
23°C (73°F)		291,000	82,800
121°C (250°F)		42,100	39,000
Flexural Stress at 5% Strain, psi	D-790-10A		
-40°C (-40°F)		22,500	21,300
23°C (73°F)		10,600	3,420
121°C (250°F)		1,900	1,680
IMPACT			
Notched Izod Impact, ft-lbs/in	D-256-10A		
-40°C (-40°F)		0.8	0.7
23°C (73°F)		0.9	23
ELECTRICAL			
Volume Resistivity, 3.2 mm, Ω·cm	D-257-07	2.19E14	3.63E10
Dielectric Strength, Short Time, 3.2 mm, V/mil	D-149-09	378	235

*Conditioned to 2.7% H2O (equivalent 23°C [73°F] 50% RH)

PROCESSING GUIDELINES

MATERIAL HANDLING

Aegis® H55WCX nylon compound is supplied in sealed containers and drying prior to processing is typically not required. However, high moisture is known to be a primary cause of processing issues. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 70°C (158°F) is recommended. Drying time is dependent on moisture level. Safe handling procedures can be found in the Safety Data Sheet available on AdvanSix.com.

EXTRUSION GUIDELINES

MELT VISCOSITY VS. TEMPERATURE

Melting point: 220°C (428°F)

TYPICAL EXTRUSION TEMPERATURE PROFILE

Barrel: 249-266°C (480-510°F)

Adapter: 260-266°C (500-510°F)

Die: 260-266°C (500-510°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

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.

CONTACT ADVANSIX

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

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