

## 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 and cUL QMTT8 for use in wire, cable and flexible lighting products.

## PERFORMANCE OVERVIEW

<u>TYPICAL PROPERTIES</u>	<u>TEST METHOD-ASTM</u>	<u>DRY</u>	<u>CONDITIONED*</u>
<b>PHYSICAL PROPERTIES</b>			
Density, g/cm <sup>3</sup>	D-792	1.14	
Rockwell Hardness, R Scale	D-785-08A	116	80
<b>MECHANICAL PROPERTIES</b>			
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
<b>IMPACT</b>			
Notched Izod Impact, ft-lbs/in	D-256-10A		
-40°C (-40°F)		0.8	0.7
23°C (73°F)		0.9	23
<b>ELECTRICAL</b>			
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% H<sub>2</sub>O (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](https://www.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.*

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## CONTACT ADVANSIX

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

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**ADVANSIX**  
Good chemistry.