

Alathon®

9305TC

High Density Polyethylene

Wire and Cable Grade

Melt Index 0.075 Density 0.949

Applications

ALATHON 9305TC is a high molecular weight high density copolymer with a broad bimodal molecular weight distribution. This resin exhibits high density and stiffness and is designed for grooved feed and smooth bore equipment. Typical applications for wire and cable include cable in conduit.

Processing Techniques

9305TC, like other thermoplastic polyolefin resins, can be extruded as wire and cable insulation or jacketing using a conventional extruder. Below are suggested extrusion conditions for 9305TC. These conditions are intended as general guidelines only and are not optimum values, since manufacturing conditions such as extruder type and size affect the processing of thermoplastic resins.

Suggested General Extrusion Conditions

Extruder Zone	Temperature Range	Extruder Zone	Temperature Range
Feed	300° - 325°F (149° - 163°C)	Adapter	475° - 500°F (246° - 260°C)
Zone 2	350° - 400°F (177° - 204°C)	Die	475° - 500°F (246° - 260°C)
Zone 3	400° - 450°F (204° - 232°C)	Melt Temperature	475° - 500°F (246° - 260°C)
Zone 4-X	475° - 500°F (246° - 260°C)		

Industry Specifications/Certification

9305TC meets the requirements of the following: ASTM D 1248, Type III, Class A, Category 5, Grades E10. Federal LP390C, Type II, Class H, Category 5, Grade 5. 9305TC also meets the requirements of the Food and Drug Administration regulation 21 CFR 177.1520. This regulation allows the use of this olefin polymer in "...articles or components of articles intended for use in contact with food." Specific limitations or conditions of use may apply.

Typical Properties

Property*	Nominal Value	Units	ASTM Test Method
Melt Index	0.075	g/10 min	D 1238
Density	0.949	g/cc	D 1505
Tensile Strength @ Break	5,300 (36.6)	psi (MPa)	D 638
Tensile Stress @ Yield	3,400 (23.4)	psi (MPa)	D 638
Elongation @ Break	800	%	D 638
Flexural Modulus, 1% Secant	145,000 (1000)	psi (MPa)	D 790
Low Temperature Brittleness, F ₅₀	<-76	°C	D 746
Thermal Stress Crack Resistance, F ₅₀	>2500	hours	D 2951
ESCR, 10% Igepal®, F ₅₀	>2000	hours	D 1693
Dielectric Constant @ 1 MHz	2.33		D 1531
Dissipation Factor @ 1 MHz	0.00007		D 1531
Volume Resistivity, Original	2.6x10 ¹⁷	ohm-cm	D 257
Hardness, Shore D	65	D max	D 2240
Vicat Softening Point	125	°C	D 1525

*All properties determined from compression molded plaques.