

# CERTENE™ PHF-4

High Melt Strength Polypropylene  
Muehlstein

Message:

PHF-4 is a certified prime grade Polypropylene specially designed for extrusion of profile and cast film applications. PHF-4 combines excellent processability and high degree of thermal stabilization, with good melt strength, high tensile strength and good fibrillation tendency. PHF-4 applications include stretched tapes, drinking straws, monofilament yarns for rope, fibrillated tape for twine, and flat films. PHF-4 recommended processing temperature is between 210° to 230°C. PHF-4 complies with FDA regulation 21CFR 177.1520 and with most international regulations concerning the use of Polypropylene in contact with food.

General Information	
Features	High tensile strength Homopolymer Workability, good Good melt strength Thermal stability, good Compliance of Food Exposure
Uses	Twine Strap monofilament cast film Rope Profile Beverage straw
Agency Ratings	FDA 21 CFR 177.1520
Forms	Particle
Processing Method	cast film Profile extrusion molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.903	g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	4.0	g/10 min	ASTM D1238
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	91		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength <sup>1</sup> (Yield, Injection Molded)	35.2	MPa	ASTM D638
Tensile Elongation <sup>2</sup> (Yield, Injection Molded)	11	%	ASTM D638

Flexural Modulus - 1% Secant <sup>3</sup> (Injection Molded)	1720	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C, Injection Molded)	43	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (0.45 MPa, Unannealed, Injection Molded)	98.0	°C	ASTM D648
Vicat Softening Temperature	151	°C	ASTM D1525
Additional Information			
All specimens were injection molded according to ASTM D2146 Type 1.			
Injection	Nominal Value	Unit	
Processing (Melt) Temp	98.9 - 110	°C	
NOTE			
1.	50 mm/min		
2.	50 mm/min		
3.	1.3 mm/min		

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#### Recommended distributors for this material

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