Shell Polymers

52N10
High-Density Polyethylene Resin

Technical Data Sheet

Product Description

Shell Polymers HDPE 52N10 is designed to deliver excellent stiffness/impact balance, flow easily, and offer good overall processability. Certified to NSF/ANSI 51.

Highlights

- Intended for use in injection molding applications
- Balances physical property performance and flowability
- Gas phase technology

Resin Properties	Method	Nominal Value
Density	ASTM D792	0.952 g/cm^3
Melt Index (190 °C / 2.16 kg)	ASTM D1238	10 g/10 min

Mechanical Properties	Method	Nominal Value (English)	Nominal Value (SI)
Environmental Stress-Cracking Resistance (ESCR)[a]	ASTM D1693	12 hr	12 hr
Tensile[b] Strength at Yield	ASTM D638	4000 psi	27.6 MPa
Tensile[b] Strength at Break	ASTM D638	1940 psi	13.4 MPa
Tensile[b] Elongation at Yield	ASTM D638	8.7%	8.7%
Tensile[b] Elongation at Break	ASTM D638	542%	542%
Flexural Modulus 1% Secant	ASTM D790B	184,000 psi	1270 MPa
Flexural Modulus 2% Secant	ASTM D790B	157,000 psi	1080 MPa
Tensile Impact Strength	ASTM D1822	33.1 ft·lb/in^2	70.0 kJ/m^2
Notched Izod Impact (-30 °C)	ASTM D256	0.80 ft·lb/in	42.0 J/m

Thermal Properties	Method	Nominal Value (English)	Nominal Value (SI)
Deflection Temperature Under Load at 66 psi (0.455 MPa) Unannealed	ASTM D648	160 °F	71 °C
Peak Melting Temperature		267 °F	130 °C
Peak Crystallization Temperature		241 °F	116 °C

Notes

Typical properties only. Not to be construed as specifications. Users should confirm results by performing their own tests.

Plaques molded in accordance with ASTM D4703C

(a) ESCR tested using Condition B, 100% Igepal

(b) Tensile properties tested on Type IV specimens

Regulatory Statement:

- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.1a or 3.2a
- Consult the Regulatory Data Sheet for more details. It is available upon request. Please contact your Account Manager.

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