Ultralast™ PE541

Polyurethane (Polyether, PPDI)

Chemtura

Message:

Ultralast Thermoplastic Urethanes combine our proprietary LF and polymerization technology that provide well-defined molecular structure, better phase segregation and stronger hard segments.
Features of Ultralast PE541 include:
Excellent dynamic properties
High cut and tear resistance
Low processing temperatures
MARKETS
Ultralast Thermoplastic Urethanes can meet the needs of the most demanding applications. PE541 is designed but not limited to the oil & gas, mining and industrial markets.

General Information	
Features	Good Tear Strength
Uses	Industrial Applications Mining Applications Oil/Gas Applications
Processing Method	Extrusion Injection Molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.13	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	15 to 45	g/10 min	ASTM D1238
Molding Shrinkage			ASTM D955
Flow : 24 hr	1.3	%	
Across Flow : 24 hr	1.3	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore D)	53 to 55		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Flexural Modulus	183	MPa	ASTM D790
Abrasion Resistance - DIN	46.0	mm³	DIN 53516
Dynamic Properties			
Storage Modulus : 30°C	8.88E+8	dynes/cm²	
Storage Modulus : 150°C	4.98E+8	dynes/cm²	
Tangent Delta : 30°C	0.0360		
Tangent Delta : 150°C	0.0370		
Films	**Nominal Value**	**Unit**	**Test Method**
Trouser Tear Resistance	129	N/mm	ASTM D1938
Elastomers	**Nominal Value**	**Unit**	**Test Method**

Tensile Stress (100% Strain)	15.4	MPa	ASTM D412
Tensile Strength	45.1	MPa	ASTM D412
Tensile Elongation (Break)	840	%	ASTM D412
Tear Strength (Split)	54	kN/m	ASTM D470
Compression Set (70°C, 22 hr)	34	%	ASTM D395B
Bayshore Resilience	50	%	ASTM D2632
Thermal	**Nominal Value**	**Unit**	**Test Method**
Glass Transition Temperature	-45.0	°C	
Vicat Softening Temperature	194	°C	ASTM D1525
Injection	**Nominal Value**	**Unit**	
Rear Temperature	190 to 210	°C	
Middle Temperature	190 to 210	°C	
Front Temperature	190 to 210	°C	
Nozzle Temperature	190 to 210	°C	
Processing (Melt) Temp	205 to 220	°C	
Mold Temperature	20.0 to 55.0	°C	
Extrusion	**Nominal Value**	**Unit**	
Cylinder Zone 1 Temp.	190 to 210	°C	
Cylinder Zone 3 Temp.	190 to 210	°C	
Cylinder Zone 5 Temp.	190 to 210	°C	
Melt Temperature	205 to 220	°C	
Die Temperature	200 to 230	°C	

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

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