

Murtfeldt Original Material "S"® plus + TLS Polyethylene

Category : Polymer , Thermoplastic , Polyethylene (PE) , HDPE , High Density Polyethylene (HDPE), UHMW PE Ultra High Molecular Weight

Material Notes:

Original Material "S"® plus+ TLS is designed for high temperature industrial applications for which Original Material "S"® could previously not be used. The thermal oxidation point has been increased through the use of an additive. The material is thus suitable for a wide range of industrial applications that are subject to sustained high temperatures. Special Properties: • Increased constant service temperature of 100°C • Extremely good wear and abrasion resistance • Excellent resistance to chemicals • Excellent machinability Information provided by Murtfeldt Kunststoffe GmbH & Co. KG.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Murtfeldt-Original-Material-S-plus-TLS-Polyethylene.php

Physical Properties	Metric	English	Comments
Density	<= 0.930 g/cc	<= 0.0336 lb/in³	ISO 1183
Moisture Absorption at Equilibrium	<= 0.10 %	<= 0.10 %	ISO 62
Water Absorption at Saturation	<= 0.10 %	<= 0.10 %	ISO 62
Molecular Weight	9.00e+6 g/mol	9.00e+6 g/mol	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	64	64	DIN 53505
Ball Indentation Hardness	38.0 MPa	5510 psi	
Tensile Strength at Break	25.0 MPa	3630 psi	ISO 527
Tensile Strength	23.0 MPa	3340 psi	ISO 527
Tensile Strength, Yield	>= 20.0 MPa	>= 2900 psi	ISO 527
Elongation at Break	250 %	250 %	ISO 527
Modulus of Elasticity	0.700 GPa	102 ksi	
Compressive Yield Strength	4.50 MPa	653 psi	ISO 604
	@Strain 1.00 %	@Strain 1.00 %	
	8.00 MPa	1160 psi	ISO 604
	@Strain 2.00 %	@Strain 2.00 %	
	14.0 MPa	2030 psi	ISO 604
	@Strain 5.00 %	@Strain 5.00 %	
Charpy Impact, Notched	>= 14.0 J/cm²	>= 66.6 ft-lb/in²	ISO 179

Mechanical Properties	Metric	English	Comments
Sand Slurry	80	80	value in %

Thermal Properties	Metric	English	Comments
CTE, linear	200 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 23.0 - 60.0 $^{\circ}\text{C}$	111 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 73.4 - 140 $^{\circ}\text{F}$	
Thermal Conductivity	0.400 W/m-K	2.78 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ISO 52612
Melting Point	130 - 135 $^{\circ}\text{C}$	266 - 275 $^{\circ}\text{F}$	ISO 3146
Maximum Service Temperature, Air	120 $^{\circ}\text{C}$	248 $^{\circ}\text{F}$	Short Term
	100 $^{\circ}\text{C}$ @Time 1.80e+7 sec	212 $^{\circ}\text{F}$ @Time 5000 hour	
Minimum Service Temperature, Air	-200 $^{\circ}\text{C}$	-328 $^{\circ}\text{F}$	
Glass Transition Temp, Tg	-120 $^{\circ}\text{C}$	-184 $^{\circ}\text{F}$	
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00\text{e}+14$ ohm-cm	$\geq 1.00\text{e}+14$ ohm-cm	IEC 60093
Surface Resistance	$\geq 1.00\text{e}+14$ ohm	$\geq 1.00\text{e}+14$ ohm	IEC 60093
Dielectric Constant	2.1 @Frequency 100 Hz	2.1 @Frequency 100 Hz	IEC 60250
	3.0 @Frequency 1.00e+6 Hz	3.0 @Frequency 1.00e+6 Hz	IEC 60250
Dielectric Strength	≤ 45.0 kV/mm	≤ 1140 kV/in	IEC 60243
Dielectric Loss Index	0.00039 @Frequency 100 Hz	0.00039 @Frequency 100 Hz	IEC 60250

Compliance Properties	Metric	English	Comments
European Food 1935/2004	Yes	Yes	
FDA	Yes	Yes	

Descriptive Properties	Value	Comments
Color	Ruby Red	

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