Quadrant EPP TIVAR® ECO PE-UHMW reprocessed (ISO Data)

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

Material Notes:

This grade, partially composed of reprocessed PE-UHMW material, has an overall lower property level than the virgin TIVAR 1000 and a lower cost. Compared with virgin PE 500, however, it has a much better impact strength and wear resistance. TIVAR ECO shows a favourable price-performance ratio for applications in many kinds of industries with less demanding requirements Very good wear and abrasion resistance High impact strength, even at low temperatures (particularly UHMW-PE) Excellent chemical resistance Low coefficient of friction Excellent release properties Very low water absorption Moderate mechanical strength, stiffness and creep resistance Very good electrical insulating and dielectric properties (except static dissipative grades) Excellent machinability Physiologically inert (several grades are suitable for food contact) Good resistance to high energy radiation (gamma- and X-rays) Not self-extinguishing

Order this product through the following link:
http://www.lookpolymers.com/polymer_Quadrant-EPP-TIVAR-ECO-PE-UHMW-reprocessed-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	0.940 g/cc	0.0340 lb/in³	ISO 1183-1
Water Absorption	<= 0.10 %	<= 0.10 %	96 hr; ISO 62
Moisture Absorption at Equilibrium	<= 0.10 %	<= 0.10 %	50% RH
Water Absorption at Saturation	<= 0.10 %	<= 0.10 %	ISO 62
Outgassing - Total Mass Loss	0.14 %	0.14 %	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	60	60	
Ball Indentation Hardness	34.0 MPa	4930 psi	ISO 2039-1
Tensile Strength	20.0 MPa	2900 psi	at Yield; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	ISO 527-1/-2
Elongation at Yield	15 %	15 %	ISO 527-1/-2
Tensile Modulus	0.775 GPa	112 ksi	ISO 527-1/-2
Flexural Strength	18.0 MPa	2610 psi	
Compressive Strength	7.00 MPa @Strain 1 %	1020 psi @Strain 1 %	ISO 604
	11.0 MPa @Strain 2 %	1600 psi @Strain 2 %	ISO 604

Mechanical Properties	Metric	English	Comments
	17.5 MPa @Strain 5 %	2540 psi @Strain 5 %	
K Factor (ISO)	15 µm/km	15 µm/km	
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	9.00 J/cm²	42.8 ft-lb/in²	Partial Break; ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.15 - 0.30	0.15 - 0.30	
Sand Slurry	200	200	
Limiting Pressure Velocity	0.0500 MPa-m/sec	1430 psi-ft/min	at 1 m/s unlubricated
	0.0800 MPa-m/sec	2280 psi-ft/min	at 0.1 m/s unlubricated

Thermal Properties	Metric	English	Comments
CTE, linear	200 µm/m-°C @Temperature 23.0 - 100 °C	111 µin/in-°F @Temperature 73.4 - 212 °F	
Thermal Conductivity	0.400 W/m-K	2.78 BTU-in/hr-ft²-°F	
Melting Point	135 °C	275 °F	DSC, 10°C/min.; ISO 11357-1/-3
Maximum Service Temperature, Air	80.0 °C	176 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	42.0 °C	108 °F	ISO 75-1/-2
Flammability, UL94	HB	HB	
Oxygen Index	<= 20 %	<= 20 %	ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	<= 1.0e+8 ohm	<= 1.0e+8 ohm	IEC 60093

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
European Food 1935/2004	No	No	
FDA	No	No	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Acceptable	Acceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Acceptable	Acceptable	
Conductive / Static Dissipative	Yes	Yes	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Unacceptable	Unacceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Limited	Limited	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

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