

## Quadrant EPP TIVAR® SuperPlus PE-UHMW + specific additives (ISO Data)

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

### Material Notes:

TIVAR SuperPlus is a wear optimised, partially cross-linked PE-UHMW material with extremely high degree of polymerisation for use in most demanding applications and environments. When used for drainage elements in paper machinery, this TIVAR-grade generally also offers better wear and sliding performance than TIVAR Ceram P.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Quadrant-EPP-TIVAR-SuperPlus-PE-UHMW-specific-additives-ISO-Data.php](http://www.lookpolymers.com/polymer_Quadrant-EPP-TIVAR-SuperPlus-PE-UHMW-specific-additives-ISO-Data.php)

Physical Properties	Metric	English	Comments
Density	0.960 g/cc	0.0347 lb/in <sup>3</sup>	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	58	58	
Ball Indentation Hardness	31.0 MPa	4500 psi	ISO 2039-1
Tensile Strength	17.0 MPa	2470 psi	at Yield; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	ISO 527-1/-2
Elongation at Yield	20 %	20 %	ISO 527-1/-2
Tensile Modulus	0.600 GPa	87.0 ksi	ISO 527-1/-2
Flexural Strength	14.5 MPa	2100 psi	
Compressive Strength	5.00 MPa	725 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	8.50 MPa	1230 psi	
	@Strain 2 %	@Strain 2 %	ISO 604
	14.5 MPa	2100 psi	ISO 604
	@Strain 5 %	@Strain 5 %	
K Factor (ISO)	4.0 µm/km	4.0 µm/km	

Charpy Impact Unnotched Mechanical Properties	NB Metric	NB English	ISO 179-1/1eU Comments
Charpy Impact, Notched	9.00 J/cm <sup>2</sup>	42.8 ft-lb/in <sup>2</sup>	Partial Break; ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.15 - 0.30	0.15 - 0.30	
Sand Slurry	80	80	
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	180 µm/m-°C	100 µin/in-°F	
	@Temperature 23.0 - 100 °C	@Temperature 73.4 - 212 °F	
Thermal Conductivity	0.400 W/m-K	2.78 BTU-in/hr-ft <sup>2</sup> -°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
Volume Resistivity	>= 1.0e+14 ohm-cm	>= 1.0e+14 ohm-cm	IEC 60093
Surface Resistivity per Square	>= 1.0e+12 ohm	>= 1.0e+12 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
Acids, Strong (pH 1-3)	Acceptable	Acceptable	
Acids, Weak	Acceptable	Acceptable	

Chemical Resistance Properties	Metric	English	Comments
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Acceptable	Acceptable	
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	

## Contact Songhan Plastic Technology Co.,Ltd.

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