

## Quadrant EPP TIVAR® H.O.T. 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 H.O.T. [Higher Operating Temperature] is formulated to maintain inherent PE-UHMW key properties over an extended service temperature range, in this way considerably increasing part life in low load bearing applications up to temperatures as high as 125°C. Special additives reduce the oxidation rate of the material at higher temperatures thereby slowing down material degradation and extending wear-life. TIVAR H.O.T. also features a food contact compliant composition Very good wear and abrasion resistance High impact strength, even at low temperatures (particularly UHMW-PE) Excellent chemical resistance Low density compared with other thermoplastics 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 (except TIVAR Burnguard)

Order this product through the following link:

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

Physical Properties	Metric	English	Comments
Density	0.930 g/cc	0.0336 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	19.0 MPa	2760 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	0.700 GPa	102 ksi	ISO 527-1/-2
Flexural Strength	16.0 MPa	2320 psi	
Compressive Strength	6.00 MPa @Strain 1 %	870 psi @Strain 1 %	ISO 604
	10.0 MPa	1450 psi	

Mechanical Properties	Metric	English	ISO 604 Comments
	16.0 MPa @Strain 2 %	2320 psi @Strain 2 %	ISO 604
	@Strain 5 %	@Strain 5 %	
K Factor (ISO)	6.0 µm/km	6.0 µm/km	
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	10.0 J/cm <sup>2</sup>	47.6 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	200 µm/m-°C	111 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	110 °C	230 °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
Dielectric Strength	45.0 kV/mm	1140 kV/in	

Compliance Properties	Metric	English	Comments
3A-Dairy	Yes	Yes	
European Food 1935/2004	Yes	Yes	

<small>FDA</small> Compliance Properties	<small>Yes</small> Metric	<small>Yes</small> English	Comments
USP Class VI	No	No	

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	
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.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China