



恆祥龍®工程塑膠 物性表

Technical Properties of HiShiRon® Engineering Plastics

性質	Characteristic	方法 Method of verification	單位 Unit	超高分子量聚乙烯 UHMW PE
I. 物理特性		I. Physical Properties		
比重	Density	ISO 1183	g/cm ³	0.93
吸水率 (飽和)	Water absorption	ISO 62	%	0.01
II. 機械特性		II. Mechanical Properties		
降伏點拉力強度	Tensile strength at yield	ISO 527-2	MPa	17
斷裂拉力強度	Tensile strength at break	ISO 527-2	MPa	40
斷裂伸長率	Elongation at break	ISO 527-2	%	≥ 50
彈性模數—拉力試驗後	Modulus of elasticity after tensile test	ISO 527-2	MPa	650
彈性模數—彎曲試驗後	Modulus of elasticity after flexural test	ISO 178	MPa	800
硬度—洛氏	Hardness - Rockwell	ISO 2039-2		-
硬度—薛氏D	Hardness - Shore D	DIN 53505		61
衝擊強度	Charpy impact strength at 23°C	ISO 179	kJ/m ²	N. B.
磨擦係數	Friction coefficient	DIN 53375		0.25
III. 熱特性		III. Thermal Properties		
熱變形溫度—HDT/A	Heat deflection temperature - HDT/A	ISO 75-2	°C	42
最高使用溫度—短時間	Max. service temperature - Short term		°C	120
最高使用溫度—長期	Max. Service Temperature - Long term		°C	90
熱傳導係數	Thermal conductivity at 23 °C	DIN 11359	W/(K*m)	0.42
線性熱膨脹係數	Coefficient of linear thermal expansion	ISO 11359	10 ⁻⁴ * K ⁻¹	2.00
IV. 電氣特性		IV. Electrical Properties		
介電常數	Dielectric constant at 1 MHz	IEC 60250	10 ⁶ Hz	3.00
介電損失係數	Dielectric loss factor at 1 MHz	IEC 60250	10 ⁶ Hz	0.0001
體積阻抗	Volume resistivity	IEC 60093	Ohm (Ω) * cm	> 10 ¹⁴
表面阻抗	Surface resistivity	IEC 60093	Ohm (Ω)	> 10 ¹¹
介電強度	Dielectric strength	IEC 60243-1	kV/mm	45
V. 其他參考數據		V. Miscellaneous Data		
燃燒能力	Flammability	UL 94	Class	HB

NOTE: 1 g/cm³ = 1,000 kg/m³, 1 Mpa = 1 N/mm², 1kV/mm = 1 MV/m

聲明 / Statement :

上述數據資料為現有訊息，表示個別測量的平均數據，代表恆祥龍®的產品及現有可取得之各項特性。

恆祥龍®不提供任何有關某特定用途的確定性質或適用性的法律保證責任。

The information mentioned the above are approximate figures based on our experience & knowledge .

They are as HiShiRon® products and possible application.

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性質	Characteristic	方法 Method of verification	單位 Unit	防靜電超高分子量聚乙烯 UHMW PE - ESD
I. 物理特性		I. Physical Properties		
比重	Density	ISO 1183	g/cm ³	0.93
吸水率 (飽和)	Water absorption	ISO 62	%	0.01
II. 機械特性		II. Mechanical Properties		
降伏點拉力強度	Tensile strength at yield	ISO 527-2	MPa	17
斷裂拉力強度	Tensile strength at break	ISO 527-2	MPa	40
斷裂伸長率	Elongation at break	ISO 527-2	%	> 50
彈性模數—拉力試驗後	Modulus of elasticity after tensile test	ISO 527-2	MPa	650
彈性模數—彎曲試驗後	Modulus of elasticity after flexural test	ISO 178	MPa	800
硬度—洛氏	Hardness - Rockwell	ISO 2039-2		-
硬度—薛氏D	Hardness - Shore D	DIN 53505		62
衝擊強度	Charpy impact strength at 23°C	ISO 179	kJ/m ²	N. B.
磨擦係數	Friction coefficient	DIN 53375		0.25
III. 熱特性		III. Thermal Properties		
熱變形溫度—HDT/A	Heat deflection temperature - HDT/A	ISO 75-2	°C	-
最高使用溫度—短時間	Max. service temperature - Short term		°C	-
最高使用溫度—長期	Max. Service Temperature - Long term		°C	-
熱傳導係數	Thermal conductivity at 23 °C	DIN 11359	W/(K*m)	0.40
線性熱膨脹係數	Coefficient of linear thermal expansion	ISO 11359	10 ⁻⁴ * K ⁻¹	2.00
IV. 電氣特性		IV. Electrical Properties		
介電常數	Dielectric constant at 1 MHz	IEC 60250	10 ⁶ Hz	-
介電損失係數	Dielectric loss factor at 1 MHz	IEC 60250	10 ⁶ Hz	-
體積阻抗	Volume resistivity	IEC 60093	Ohm (Ω) * cm	< 10 ⁶
表面阻抗	Surface resistivity	IEC 60093	Ohm (Ω)	< 10 ⁹
介電強度	Dielectric strength	IEC 60243-1	kV/mm	45
V. 其他參考數據		V. Miscellaneous Data		
燃燒能力	Flammability	UL 94	Class	HB

NOTE: 1 g/cm³ = 1,000 kg/m³, 1 Mpa = 1 N/mm², 1kV/mm = 1 MV/m

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